Flat File adapter 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 V7.0 installed and updated with latest fixes
- WebSphere Process Server V7.0 Test Environment installed and updated latest fixes
- Extract Labfiles70.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:

- Import Flat File adapter RAR file into WebSphere Integration Developer
- Use the external service wizard to configure activation spec properties, resource adapter properties to generate business objects and other artifacts and configure function selector, data binding and data handlers
- Deploy the adapter application onto WebSphere Process Server
- Test the deployed application using WebSphere Process Server test environment for both passthrough and non pass-through using different scenarios and patterns
- Restore the server configuration

Introduction

The backend EIS is the source of events. When events are generated at the EIS, files are 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.

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 will form a fundamental unit of transfer to the adapter that can internally represent more than one backend events. The adapter sends the entire file content across to the endpoint in the form of a Business Object for further processing.

Backend EIS Remote File System Event directory Archive Directory Archive Event Files Files Application Server Runtime Flat Files Adapter Flat File Event Table JCA **Event Database** Foundation BO classes Maintain Event Status and Endpoint information Endpoint

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

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 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 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.

Once the event business object is posted, the event entry is then deleted from the 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 are 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 or .bat) for your operating system. The directory locations are specified in the lab instructions using symbolic references, as follows:

Reference variable	Windows location	AIX [®] or UNIX [®] location
<wid_home></wid_home>	C:\Program Files\IBM\WID7Beta	
<wps_home></wps_home>	C:\ <wid_home>\runtimes\bi_v70</wid_home>	
<ffadapter_home></ffadapter_home>	<wid_home>\ResourceAdapters\FlatFile_7.0.0.0.0\deploy</wid_home>	
<lab_files></lab_files>	C:\Labfiles70	/tmp/Labfiles70
<workspace></workspace>	<lab_files>\FlatFileInbound\workspace</lab_files>	
<event_dir></event_dir>	<lab_files>\FlatFileInbound\eventdir</lab_files>	
<archive_dir></archive_dir>	<lab_files>\FlatFileInbound\archivedir</lab_files>	
<fffiles></fffiles>	<lab_files>\FFFiles</lab_files>	
<temp></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, replace C:\Labfiles70\ with C:/Labfiles70/

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></server_name>	server1	sssr011	
<was_home></was_home>	C:\Program Files\IBM\WebSphere\AppServer	/etc/sscell/AppServer	
<hostname></hostname>	localhost	mvsxxx.rtp.raleigh.ibm.com	
<soap_port></soap_port>	8880	8880	
<telnet_port></telnet_port>	N/A	1023	
<profile_name></profile_name>	AppSrv01	default	
<userid></userid>	N/A	ssadmin	
<password></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 "<u>Task: Adding remote server to WebSphere Integration Developer</u> test environment".

Part 1: Initialize the workspace and prepare for the lab

This part of the lab, you will start the WebSphere Integration Developer V7.0 with a new workspace and create required data source and database using the administrative console of WebSphere Process Server V7.0

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

🥵 Workspace Launcher		×		
Select a workspace				
IBM WebSphere Integration Developer 7.0 stores your projects in a folder called a workspace. Choose a workspace folder to use for this session.				
		1		
Workspace: C:\Labfiles70\FlatFileInbound\workspace		Browse		
▶ <u>C</u> opy Settings				
(?) ОК		Cancel		

- _ 3. Click the ² button on the right corner to close the Welcome page and proceed with the workbench
- 4. Follow the instructions of 'WPBMv70_ConfigureDatasourceTask' lab with these inputs and create the data source and data base required for this lab:
 - ___a. Data source name: FF
 - ___ b. JNDI name: jdbc/FF
 - ____ c. Database name: **FFDB**

Part 2: Pass through scenario

Inbound support can be broadly classified into two flows, one that involves data transformation and another without it (pass-through). In this part of the lab, you will configure the pass through scenario using the new External Service option from the WebSphere Integration Developer and then test the configuration.

Pass through flow for the inbound scenario:



- Event data is picked from the event file based on event file size and SplitCriteria, converted into a byte[] and set as a ByteArrayInputStream on FlatFileInputStreamRecord.
- Protocol specific information like event file name, directory name are also set in the FlatFileInputStreamRecord.
- The FlatFileInputStreamRecord is sent to the function selector. The function selector instantiates the wrapper. There is no value for the data handler property in the chose databinding, so no content-specific data handler is invoked but UnstructuredContent SDO is instantiated. It is set with byte content.
- The FlatFile wrapper is set with protocol specific information and UnstructuredContent is set in FlatFile
- FlatFile wrapper data object is set in FlatFileBG and sent to the endpoint.

2.1. Configure pass through using the external service wizard

In this part of the lab you will use the new external service feature to create and configure the function selector, data binding and other required artifacts to test the inbound pass through scenario

- 1. Create the module: FFPSInboundModule
 - ____a. From the Business Integration window, right-click and select New > Module

____b. From the New Module window, enter **FFPSInboundModule** for the Module Name

🤀 New Module 📃 🗖 🗙
Create a Module
Use a module to integrate business applications and services. A module can contain any type of component and can be deployed on WebSphere Process Server.
Module name: FFPSInboundModule
☑ Use default location
Location: C:\Labfiles70\FlatFileInbound\workspace\FFPSInboundModule Browse
✓ Open module assembly diagram

_ c. Ensure that the box next to Open module assembly diagram is checked and then click Finish. You should see a new module, FFPSInboundModule, created from your Business Integration window

- ____ 2. To start external service from the palette:
 - ____a. From the **palette**, on the left side of assembly diagram, click **Inbound Adapters**:

🕄 FFPSInboundModule -	Assembly Diagram
👌 😳 Palette	
💫 🗨 🗨 ዄ 🕼	
🔁 Favorites	
🔁 Components	
🔁 Outbound Imports	
🔁 Inbound Exports	
🔁 Outbound Adapters	
🔁 Inbound Adapters 🔫	
🔁 E-mail	
Flat File	
류 FTP _ ଏ	
iSeries An export com	ponent which
DBC CONNECCS CO G	local file system.
🏂 JD Edwards Enter	
🚽 Lotus Domino	

- __ 3. Under Inbound Adapters, click the Flat File and then click the empty canvas of the assembly diagram. The New Flat File Service wizard is opened
- 4. From the New External Service window, expand Adapters > Flat File and select Advanced: Create a Flat File service using the complete wizard



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 that establishes connectivity with other systems.

Select Adapters > Flat File and click Next

____5. On the Specify the Discovery Properties screen, select **IBM WebSphere Adapter for Flat Files** (**IBM : 7.0.0.0**) and click **Next**

🤀 New External Service	
Select an Adapter	150
Select the adapter you want to use.	
٨	
📄 IBM WebSphere Adapter for Flat Files (IBM : 7.0.0.0)	

____6. Import a RAR File 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 **<FFADAPTER_HOME**>.

- ____a. The default connector file is selected. This file is shipped along with WebSphere Integration Developer
- ____b. Accept the default name for connector project, **CWYFF_FlatFile**. You can change it to any other name, but for this lab, you can leave the default name.
- ____ c. For target server, ensure that WebSphere Process Server v7.0 is selected

🚯 New External Service	
Import a RAR File	
Import a resource adapter a for the adapter.	rchive (RAR) from the file system to create a connector project
Archive file:	C:\IBM\WID7Beta\ResourceAdapters\FlatFile_7.0.0.0\CWYFF_FlatFile.rar
Connector project: *	CWYFF_FlatFile
Target runtime enviroment:	WebSphere Process Server v7.0
	WebSphere Process Server v7.0 WebSphere ESB Server v7.0

____d. Click Next

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

Note: If you are using the **File menu** option to start the external service wizard, you are asked to select the **Processing Direction** at this point. Select the radio button next to **Inbound** and click **Next** to proceed to the next step.

- 7. Service configuration properties:
 - ____a. Deploy connector project: ensure that the default option With module for use by single application is selected
 - ____b. Under Connection Configuration, click **Browse...** next to Event directory and select **<EVENT_DIR>** from the pop-up window:

🚯 New External Service				
Service Configuration Properties For this service, specify security and connection configuration properties.				
Deploy connector project: Connection settings:	With module for use by single application	[
Connection properties File system connection information. Event directory:* C:\Labfiles70\FlatFileInbound\eventdir				

Note: Alternatively, you can also replace the absolute directory path with WebSphere variables for the Event directory, Archive directory. Refer to '**Flat File adapter – Processing COBOL copy book files lab**' for more details on this new feature introduced in V6.2.

8. Rule editor: Configure rules for event filtering.

Note: You will configure three rules to match three different file name patterns. Adapter polls only those files that match the rule that is configured here.

New in V7.0: The rule table in the Properties view is now displayed in the table format instead of a string.

- ____a. Define a rule to filter only .txt files:
 - 1) Click Add... next to the rule editor table
 - 2) From the Add/Edit window, enter these:
 - a) Property Type: select File name from the drop down list
 - b) Operator: select MatchesFilePattern from the drop down list

c) Value: *.txt

🚯 Add/Edit		
Add/Edit pro	perties	
Specify the prop	erties.	
Property type:	File name	<u> </u>
Operator:	MatchesFilePattern	
Value: *	*.txt	

- d) Click Finish
- 3) You should see a new rule entry in the table as shown below:

Rule editor to filter files:							
	Property type	Operator	Value		Add		
	File name	MatchesFilePattern	*.txt				
L.					Edit		

_ b. Repeat the instructions listed in step 8.a and create two more rules as shown below:

Rule editor to filter files:						
	Property type	Operator	Value	Add		
	File name	MatchesFilePattern	*.txt			
	File name	MatchesFilePattern	*.txt1	Edit		
	File name	MatchesFilePattern	*.txt2			
17				Remove		

9. Click Advanced >> to see the hidden advanced properties that can be configured:

<< Advanced
Event polling configuration
Event delivery configuration
Event persistence configuration
Additional configuration
File archiving configuration
 Bidi properties
Logging and tracing

You can click each of the configurations and review the options available under it. For this lab, you will need only some of these properties.

____a. Event polling configuration: This has all the polling configuration details and for this lab, you can accept the defaults.

____b. Event delivery configuration:

- Ensure once-only event delivery: You should check this box only if you are using data source and table name in the Event persistence configuration (below). If this property is set to true, while using in-memory capability (explained below), the adapter will log a warning message. By default this is selected and you can accept the default selection.
- ____ c. Event persistence configuration:
 - 1) Ensure that the Auto create event table is checked
 - 2) Event recovery table name: FFPSTABLE
 - 3) Event recovery data source (JNDI) name: jdbc/FF

Note: This represents the JNDI name of the data source used by event persistence to get the JDBC database connection. The data source must be created in the WebSphere Process Server. You should enter the data source JNDI name that you created in Step 3 of Part 1.

 Event persistence configuration 	
Auto create event table	
Event recovery table name:	FFPSTable
Event recovery data source (JNDI) name:	jdbc/FF
User name used to connect to event data source:	
Password used to connect to event data source:	
Database schema name:	

Note: The event recovery data source (JNDI) name is **not mandatory** from V6.1. Now, the adapter can use **in-memory representation** of event table to store all the necessary information. The adapter uses this feature when event database information is not configured during inbound event polling. This feature will not support the capability of handling "Ensure once-only event delivery".

- ____d. Additional Properties: Accept all the **default** values
 - Include business object delimiter in the file content (IncludeEndBODelimiter): When this property is set to true (selected) the delimiter (given in Split criteria) is appended to the business object content before further processing is done. This property is valid only if you are splitting the event files based on a delimiter, that is, only if the Split function class name (below) is com.ibm.j2ca.utils.filesplit.SplitByDelimiter. This is not selected by default.
 - 2) **Split function class name**: This value takes a fully qualified class name of the class to be used in order to split the event file. It takes two values as of now:
 - **com.ibm.j2ca.utils.filesplit.SplitBySize**: a class that splits the event file based on event file size. This is the **default** value for the split function class name.
 - **com.ibm.j2ca.utils.filesplit.SplitByDelimiter**: a class that splits the event file based on delimiter (used to separate business objects in event file)

The delimiter or file size is specified in split criteria attribute.

- 3) **Specify the criteria to split file content**: This attribute takes different values based on value set in Split function class name.
 - If split function class name is set to **com.ibm.j2ca.utils.filesplit.SplitBySize**, then split criteria must contain a valid number that represents the size in bytes. If event file size is greater than this value, it is split into chunks of this value and so many chunks are posted. If event file size is less than this value the entire event file is posted in one shot. When split criteria=0 (**default**), chunking is disabled.
 - If split function class name is set to com.ibm.j2ca.utils.filesplit.SplitByDelimiter, then split criteria must contain the delimiter that separates the business objects in the event file.

Note: You will use the SplitByDelimiter class later in the content specific (non-pass through) scenario

4) Poll subdirectories in event directory:

Note: 'Poll subdirectories in event directory' is the new Boolean property added in V6.2. This property is used for recursive polling. Flat File adapter polls the given 'Event directory' and all the sub-directories present in the 'Event directory'. Refer to **'Log and confidential trace lab'** for more details on this new feature

____e. File archiving configuration:

- Pass only file name and directory, not the content (FilePassByReference): This
 property determines if the adapter needs to load the contents of the file or just provide
 information on the directoryName and file name. If the value is true, the adapter just
 provides the directory name and file name. This is not selected by default.
- 2) Archive directory: click Browse... and select <ARCHIVE_DIR>

 File archiving configuration 		
Pass only file name and directo	ry, not the content	
Archive directory:	C:\Labfiles70\FlatFileInbound\archivedir 🔫 🗕	Browse
File extension for archive:	original	
Success file extension for archive:	success	
Failure file extension for archive:	fail	

Note: Alternatively, you can also replace the absolute directory path with WebSphere variables for the Event directory, Archive directory. Refer to '**Flat File adapter – Processing COBOL copy book files lab**' for more details on this new feature introduced in V6.2.

_____f. Logging and tracing: Refer to 'Log and confidential trace' lab for more details on this new feature

Function selector configuration: Function selectors are required in order to map between events generated by resource adapters and the appropriate SCA export function name.

There are two function selectors provided by the adapter that are supported by the FlatFile adapter - **FilenameFunctionSelector** and **EmbeddedNameFunctionSelector**.

FilenameFunctionSelector is used for generic FlatFile business object, where the object name cannot be determined from the event file The FilenameFunctionSelector is a rule-based function selector that can match a regular expression on a file name to an object name. This is represented in properties as a 2-column table, with N rows. So, you can have a mapping as follows: For any event file with a .txt extension, the corresponding object name is FFBG. The endpoint method name generated by the function selector in this case is emitFFBG. You need to set this same name for the Native method property after you add the operation.

You can also have same rules multiple times. If more than one rule matches, the function selector will return the object name based on the first matching rule.

The function selector can be configured with multiple "rules", each of which contains an object name, and a regular expression to match against the file name. In the next part of this lab, you will create three such rules.

10. Under Service properties, for function selector options, select Use a function selector configuration from the drop down menu

Note: If you select **Use default function selector 'FilenameFunctionSelector'** option for the function selector, the adapter automatically creates a function selector with FilenameFunctionSelector as the class name. But, for this lab, you need to define three rules at the function selector and so you are going to using the 'Use a function selector configuration' option.

____a. Click Select next to Function selector. The Binding Resource Configuration window is opened

Service properties		
Function selector options:	Use a function selector configuration	
Function selector:	Not defined	Select

b. Under 'Use existing function selector from the list', select FilenameFunctionSelector properties

🚯 Function Selector Configuration	
Select a Function Selector	
Select a function selector entry from the list. To use your own custom fur selector, select the second radio button to add your custom function sele	ector.
• Use existing function selector from the list	
	#
EmbeddedNameFunctionSelector properties	
RootNameFunctionSelector properties	

___ c. Click Next

11. Define Function selector rules: In this step, you will define three different rules and object names associated with those rules.

When the adapter gets an event file, the function selector looks at the file type (ex: .txt, .tmp) and if the type matches with any of the rules defined in this table, it will associate the corresponding Object name of that rule to that event file.

Object Name	Rule	Operation Name	Native method name = emit + Object Name
FFBG	.*txt	emitFlatFileBG	emitFFBG
FFType1	.*txt1	emitFlatFile1	emitFFype1
FFType2	.*txt2	emitFlatFile2	emitFFype2

Note: Make a note of the Object name you specify here as you are going to use this in the later part of the lab while specifying the Native method name.

- ____a. Click Add... next to the Function selector rules table
- ____b. From the Add/Edit pop-up window, enter these:
 - 1) Object name: FFBG
 - 2) Rule: *.txt

Object name:	FFBG
Rule:	.*txt

Note: You have now created a rule for the files of type **.txt** and an Object name corresponding to those file type

- 3) Click **Finish** from Add/Edit window
- ____ c. The created rule is populated under Function selector rules:

Add
Edit

_____d. Repeat Steps 9.a and 9.b to add these function selector rules:

Object name	Rule
FFType1	*.txt1
FFType2	*.txt2

____e. You should see these three rules:

Co	onfiguring function selecto)r	
Fu	nction selector rules:		
	Object name	Rule	<u>A</u> dd
Г	FFBG	.*txt	
Ε.	FFType1	.*txt1	Edit
	FFType2	.*txt2	
Ŀ			<u>R</u> emove

- ___ f. Click Next
- ____g. Ensure that the selected module is FFPSInboundModule
- ___h. For Name, enter any string. For Ex: GenericFS

<u>M</u> odule:	FFPSInboundModule	Browse	New
Name <u>s</u> pace:	http://FFPSInboundModule	🔽 Default	
F <u>o</u> lder:		Browse	
N <u>a</u> me:	GenericFS		

- ____ i. Click Finish
- 12. You will now be back to External Service window and the function selector created in the previous steps is populated:

Service properties			
Function selector options:	Use a function selector configuration	←	
Function selector: *	GenericFS		Select

- 13. 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 format options, select 'Use a data binding configuration for all operations'

Service properties		
Service propercies		
Function selector options:	Use a function selector configuration	
Function selector: *	GenericFS	Select
Data format options:	Use a data format configuration for all operations 🛛 🗮 🔽	
Data format:	Not defined	Select

____b. Click Select... next to Data format. A Binding Resource Configuration window is opened

____ c. Select the radio button for 'Use existing data format transformation from the list' and then select FlatFileBaseDataBinding

#

___ d. Click Next

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

____e. Click **Next** from the Data Transformation Properties screen

🚯 Data Binding Configu	ration	
Data Transformatic	n Properties	
Specify the properties for	the data transformation.	
Select DataBinding if you	vant to use a data binding developed fo	r earlier versions of the adapter.
Binding type:	DataHandler	_
Configured data handler:	Not defined	Select
Configured data binding;	Not defined	Select

- ____f. Note that the selected module is FFPSInboundModule
 - 1) For the Name, enter FFPSDB

<u>M</u> odule:	FFPSInboundModule	Browse	New
Name <u>s</u> pace:	http://FFPSInboundModule	🔽 Default	
F <u>o</u> lder:		Browse	
N <u>a</u> me:	FFPSDB		

- 2) Click Finish
- ____g. Now the **FFPSDB** should be displayed for Data format:

Data format options:	Use a data format configuration for all operations	•	
Data format:	* FFPSDB		Select

14. 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 and click Next

Following screen is the Operations screen where you can define all your operations.

From V6.1, you can select from three different Data types for any operation:

User defined type

Generic FlatFile business object

Generic FlatFile business object with business graph

The pass through scenario of this lab demonstrates the creation of three operations (for the three rules you have defined in the previous steps) using the Generic FlatFile business object and Generic FlatFile business object with business graph data types.

Create emitFlatFileBG Operation:

15. From the Operations screen, click **Add...**

____a. Add Operation window is opened. Select Generic FlatFile business object with business graph for the Data type and click Next

Operation properties	
Data type for the operation:	Generic FlatFile business object with business graph 💌

You are back to Operation window and because you have chosen the data type with business graph, the Input type is populated as **FlatFileBG**.

- ____b. For Operation name, enter any name, for Ex: emitFlatFileBG
- ____ c. For Data format options, select Use a data binding configuration from the dropdown list

Define Data format:

- ____d. Click Select... next to Data format. A Binding Resource Configuration window is opened
- ____ e. Ensure that the radio button for 'Use existing data format transformation from the list' and then select FlatFileBaseDataBinding > FFPSDB



___f. Click Finish

____g. Now the **FFPSDB** is displayed for **Data format** in the Add Operation window:

🚯 Add Operation	
Operation	
Specify the properties for the operation to add.	41
Operation name: * emitElatEileBG	
Input type: ElatEileBG (http://www.ibm.com/ymlps/prod/websphere	Browse New
Data format options: Use a data format configuration	
Data format: * FFPSDB	Select

___h. Click Finish. The defined operation, emitFlatFileBG, is populated under Operations list

Operations:	
emitFlatFileBG ({http://www.ibm.com/xmlns/prod/websphere/j2ca/flatfile/flatfilebg}	FlatFileBG) : void Add
	Edit

Create emitFlatFile1 operation:

_____16. From the Operations screen, click Add...

____a. Select Generic FlatFile business object for the Data type and click Next

You are back to the Operation window and because you have chosen the data type with no business graph, the Input type is populated as **FlatFile**.

- ____b. For the operation name, enter emitFlatFile1
- ___ c. Follow the instructions used to define data binding for emitFlatFileBG in the previous step, and define the same FFPSDB for Data format
- _____d. Now the **FFPSDB** is displayed for **Data format** in the Add Operation window:

Operation name:	* emitFlatFile1	1
Specify the operation ir	put	
Input type:	FlatFile {http://www.ibm.com/xmlns/prod/websphere/j;	Browse, New,
Data format option	s: Use a data format configuration 🛛 🗧 🛨	ſ
Data format:	* FFPSDB	Select

____e. Click Finish. The defined operations, emitFlatFile1, is populated under Operations list

O	perations:	
	<pre>emitFlatFileBG ({http://www.ibm.com/xmlns/prod/websphere/j2ca/flatfile/flatfilebg}FlatFileBG) : void emitFlatFile1 ({http://www.ibm.com/xmlns/prod/websphere/j2ca/flatfile/flatfile}FlatFile) : void</pre>	Add Edit

Create emitFlatFile2 Operation

- _____17. Repeat steps under 'Create emitFlatFile1 operation' (Step15) to add one more operation, emitFlatFile2, with these changes:
 - ____a. Operation Name: emitFlatFile2

Operation name:	* emitFlatFile2	
Specify the operation in	put	
Input type;	FlatFile {http://www.ibm.com/xmlns/prod/websphere/j; Browse New	h
Data format option:	: Use a data format configuration 🛛 🔫 🗾	
Data format:	* FFPSDB Select	

_____18. You should now see these three operations:

(Operations:	
	<pre> emitFlatFileBG ({http://www.ibm.com/xmlns/prod/websphere/j2ca/flatfile/flatfilebg}FlatFileBG) : void emitFlatFile1 ({http://www.ibm.com/xmlns/prod/websphere/j2ca/flatfile/flatfile}FlatFile) : void emitFlatFile2 ({http://www.ibm.com/xmlns/prod/websphere/j2ca/flatfile/flatfile}FlatFile) : void </pre>	Add
ļ	emit-lat-lie2 ({http://www.ibm.com/xmins/prod/websphere/j2ca/flatfile/flatfile}-lat-lie) : void	

- ____a. Click Next from Operations screen
- _____ 19. From Generate Artifacts screen:
 - ____a. For Name, enter FFPSInboundInterface

Properties for service								
	Module:	FFPSInboundModule	New					
	Namespace:	http://FFPSInboundModule/FFPSInboundInterface						
		Vse default namespace						
	Name: *	FFPSInboundInterface						
	Description:							

___ b. Click Finish

____20. The Assembly diagram for FFPSInboundModule is opened with an Export component, **FFPSInboundInterface**:



____a. Save (Ctrl + S) changes to your assembly diagram

Note: You need to manually change the Native method names.

The following table summarizes the rules, operations you have defined so far in this lab. Note the last column, which shows the Native method name for each of the rule and operation defined:

Object Name	Rule	Operation Name	Native method name = emit + Object Name
FFBG	.*txt	emitFlatFileBG	emitFFBG
FFType1	.*txt1	emitFlatFile1	emitFFype1
FFType2	.*txt2	emitFlatFile2	emitFFype2

- 21. Change the Native method binding name
 - ____a. Ensure that the FFPSInboundInterface is selected from the Assembly diagram
 - ____b. From the bottom panel, select **Properties > Binding > Method bindings**
 - ___ c. From the Bound Methods list, click emitFlatFileBG
 - ____d. From the right side, ensure that the Generic tab is selected, and then change the **Native method** to **emitFFBG**



____e. From the Bound Methods list, click emitFlatFile1

_____f. Similarly, for emitFlatFile1, change the Native method to emitFFType1



____g. Similarly, for emitFlatFile2, change the Native method to emitFFType2

Bound Methods	Generic Data Serialization
emitFlatFileBG	☑ Bind method Native method: * emitFFType2 Method binding description:

- ___h. Save (Ctrl + S) your changes
- 22. Review the FFPSInboundModule: The generated Data Types, Interface, and Function selector (GenericFS) and Data binding (FFPSDB) under Configured Resources can be found inside FFPSInboundModule



You can open each of these generated artifacts and business objects and review the properties inside.

Review the created methods inside the interface:

____a. From the Business Integration view, expand FFPSInboundModule > Interfaces and then doubleclick FFPSInboundInterface to open it

____b. You should see these three operations:

D FFPSInboundInterface 🛛							
■Interface							
Configuration							
Name	Name FFPSInboundInterface Refactor name						
Namespace	http://FFPSIn	boundModule/FFPSInboundInterface	Refactor namesp	ace			
Binding Style	document liter	al wrapped	Change binding s	tyle to document literal non-wrapped	More		
Operations and	Operations and their parameters Name Type						
🔷 🐝 emitFlat	FileBG 🚅 🗕	•					
DI Inputs	inputs emitFlatFileBGInput			FlatFileBG			
🔝 🦤 🏇 emitFlat	🗢 🐉 emitFlatFile1 🔫						
🕼 Inputs	D Inputs emitFlatFile1Input			FlatFile			
🔻 뛇 emitFlat	🗢 🐉 emitFlatFile2 🔫 🛶						
沟 Inputs	D Inputs emitFlatFile2Input			FlatFile			

____ c. Close the interface, FFPSInboundInterface

2.2. Add Java component

In this part of the lab, you will add a Java component and then wire the component to the existing Export interface. The Java component is your endpoint.

- 1. Open the assembly diagram for FFPSInboundModule (if it is already not open)
 - ____a. From the business integration view, expand FFPSInboundModule and double click Assembly diagram
- Drop a Java component to onto the assembly diagram
 - ____a. From the Palette, click Components to expand it

👌 😳 Palette						
₿®, @, %, Ø ,						
🔁 Favorites						
🕞 Components						
Lintyped Component						
<u>श</u> ी Human Task						
🚰 Java						
Mediacon Flow						
👤 Proce Java						
🔚 Rule Group						
🖰 State Machine						

- ____b. Click **Java** and then click the empty space of FFPSInboundModule assembly diagram. This will place a new component, **Component1** on the assembly diagram.
- 3. Wire the FFPSInboundInterface to the Component1
 - ____a. Select the wire (1) icon from the Palette
 - ____b. Click FFPSInboundInterface and then click Component1 to wire them together
 - ____ c. Select **OK** for the Add Wire pop-up window:

🚯 Add Wire 🛛 🛛 🗙
This action will allow the target service to be used in other modules. The service interface from the export will be added to the target. Do you want to continue?
Always create without prompt
OK Cancel

__ d. From the top of the Palette, click the **Selection Tool** icon () to get back to the normal cursor mode

Your assembly diagram for FFPSInboundModule will look like this:

😪 *FFPSInboundModule - Assembly Diagram 🛛						
 ↓ Palette ↓ ● ● ● ● ■ ► Favorites 	FFPSInboundInterface	Component1				

- ____e. Right-click **Component1** and select **Generate Implementation** from the pop-up menu
- ____f. On the Generate Implementation panel, select default package, and click OK
- ____g. **Component1Impl.java** is opened in Assembly editor. Scroll down to the method **emitFlatFileBG** that needs to be implemented and add this code under that method:

System.out.println("****Inside emitFlatFileBG:type .txt files****");

____h. Similarly add the print statement to emitFFType1 method:

System.out.println("****Inside emitFlatFileBG:type .txt1 files****");

_____ i. And finally, add the print statement to **emitFFType2** method:

System.out.println("****Inside emitFlatFileBG:type .txt2 files****");

- ____j. Save (Ctrl + S) and close Component1Impl.java
- ____k. Save (Ctrl + S) and close Assembly diagram: FFPSInboundModule

2.3. Test pass through scenario

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

- _____1. Add the project to the WebSphere Test Environment server
 - ____a. Right-click WebSphere Process Server v7.0 under the Servers view and select Add and remove projects... from the pop-up menu
 - ___ b. From the Add and Remove Projects window, select FFPSInboundModuleApp under Available projects panel and click Add >
 - ____ c. You will now see the FFPSInboundModuleApp added to the Configured projects
 - _____d. Click **Finish** and wait until the project is being published onto the server. The server will start in Debug mode if it is not already started before
 - __2. Test the application by providing three different input files:

Note: For your convenience, three test files, sample.txt, sample.txt1, sample.txt2 are placed in <FFFILES>.

Test scenario 1: processing of .txt files

- ____a. Copy the **sample.txt** file from <FFFILES> to <EVENT_DIR>. The adapter will poll the copied file from the event directory and will transfer it to the archive directory
- ____b. Because you have placed a **.txt** file, it will pass through the **emitFlatFileBG** method and you should see this message in your **Server Logs** view (or SystemOut.log):

🔠 Task Flows 🗟 Bu	uild Activities	Properties	🖹 Problems	🛅 Server Log	; 🛛 🖓 Serve	ers 🕒 Asset Repositories	
🗓 • 🎝 • 📾 🖃 🖨 🖓 • 🛛 🖉 🖉 • 📿 🚮 🎽							
Welcome WebSp	Welcome WebSphere Process Server v7.0 at localhost 🔀						
Console (filtere	Console (filtered): WebSphere Process Server v7.0 at localhost						
Show All Record Types (Hierarchical) > with only Server State and Error Contents (Page 1 of 1)							
					1		8
Туре		Time	T	'hread ID 🛛 🗌 C	ontents		
Type	ge De	Time c 5, 2009 18:08:	23.375 0	Thread ID C 0000193 W	ontents SVR0200I: Starting	application: FFPSInboundM	IoduleApp
Type	ige De ge De	Time c 5, 2009 18:08: c 5, 2009 18:08:	T 23.375 0 39.265 0	Thread ID C 0000193 W 0000193 W	ontents SVR02001: Starting SVR02211: Applicat	application: FFPSInboundM ion started: FFPSInboundM	IoduleApp

____ c. To verify your test results, 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

A <u>d</u> dress	ddress 🛅 C:\Labfiles70\FlatFileInbound\archivedir					
Folders		×	Name 🔺	Size	Туре	
	🗆 🚞 FlatFileInbound 🗁 archivedir		sample.txt.2009_12_05_18_11_10_234.success	1 KB	SUCCESS File	

Test scenario 2: processing of .txt1 files:

- _____d. Copy the **sample.txt1** file from <FFFILES> to <EVENT_DIR>. The adapter will poll the copied file from the event directory and will transfer it to the archive directory
- ____e. Because you have placed a **.txt1** file, it will pass through the **emitFlatFile1** method and you should see this message in your **Server Logs** view (or SystemOut.log):

Туре	▲ Time	Thread ID	Contents
🔲 🗐 Log message	Dec 5, 2009 18:08:23.375	00000193	WSVR02001: Starting application: FFPSInboundModuleApp
🗖 🗐 Log message	Dec 5, 2009 18:08:39.265	00000193	WSVR02211: Application started: FFPSInboundModuleApp
🔲 🗐 Log message	Dec 5, 2009 18:11:10.609	0000083	*****Inside emitFlatFileBG:type .txt files****
🗖 🗐 Log message	Dec 5, 2009 18:12:38.531	000001ce	****Inside emitFlatFileBG:type .txt1 files****

____ f. To verify your test results, 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

Address 🛅 C:\Labfiles70\FlatFileInbound\archivedir					
Folders	×	Name 🔺	Size	Туре	
E ElatEileIobound		sample.txt1.2009_12_05_18_12_38_500.success	1 KB	SUCCESS File	
archivedir		Bample.txt.2009_12_05_18_11_10_234.success	1 KB	SUCCESS File	

Test scenario 3: processing of .txt2 files:

- ____g. Copy the **sample.txt2** file from <FFFILES> to <EVENT_DIR>. The adapter will poll the copied file from the event directory and will transfer it to the archive directory
- ____h. Because you have placed a .txt2 file, it will pass through the emitFFType2 method and you should see this message in your Server Logs view (or SystemOut.log):

Туре	▲ Time	Thread ID	Contents
🔲 🗐 Log message	Dec 5, 2009 18:08:23.375	00000193	WSVR02001: Starting application: FFPSInboundModuleApp
🔲 🖃 Log message	Dec 5, 2009 18:08:39.265	00000193	WSVR02211: Application started: FFPSInboundModuleApp
🔲 🗐 Log message	Dec 5, 2009 18:11:10.609	0000083	*****Inside emitFlatFileBG:type .txt files****
🔲 🗐 Log message	Dec 5, 2009 18:12:38.531	000001ce	*****Inside emitFlatFileBG:type .txt1 files****
🗖 🗐 Log message	Dec 5, 2009 18:13:34.562	000001ce	****Inside emitFlatFileBG:type .txt2 files****

_____i. To verify your test results, 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

Address 🗁 C:\Labfiles70\FlatFileInbound\archivedir						
Folders	×	Name	Size	Туре		
ElatEileInbound		sample.txt2.2009_12_05_18_13_34_515.success	1 KB	SUCCESS File		
		Bample.txt1.2009_12_05_18_12_38_500.success	1 KB	SUCCESS File		
		sample.txt.2009_12_05_18_11_10_234.success	1 KB	SUCCESS File		

- _____ 3. Restore the Sever Configuration
 - ____a. Right-click WebSphere Process Server v7.0 under the Servers view and select Add and remove projects... from the pop-up menu
 - ____b. Select FFPSInboundModuleApp 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

2.4. Test pass through scenario with SplitBySize

In this last part of the lab, you will use the WebSphere Process Server Test Environment to test the SCA application Inbound processing for the pass through scenario with split by size.

- 1. Configure/change the adapter properties from the Properties view:
 - ____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 FFPSInboundModule and double-click FFPSInboundModule to open it in Assembly Editor
 - ____ c. Click FFPSInboundInterface from the Assembly Editor and select Properties tab from the bottom
 - _____d. Select **Binding** under Properties and select **End-point configuration** under Binding itself and then select the **Connection** tab
 - ____e. Now under **ActivationSpec Properties**, you can review the properties that were given during the external service wizard
 - ____f. Scroll down to Additional configuration
 - 1) Select the box for 'Split file content based on size (bytes) or delimiter'
 - 2) Split function class name: com.ibm.j2ca.utils.filesplit.SplitBySize (default)
 - 3) Specify criteria to split file content: 1000

Note: The value, 1000, you entered for the field, Specify criteria to split the content, is the size of the input file in Bytes.

ditional configuration		
Retrieve files with pattern:	* *	
🔲 Include business object delimiter in the file conter	nt	
Retrieve files in sorted order:	No sort	
File content encoding;	UTF-8	Select
Specify the splitting function class name and the split Split file content based on size (bytes) or delimite	t criteria to split the file content. P	
Split function class name:	com.ibm.j2ca.utils.filesplit.SplitBySize	Browse
Specify criteria to split file content:	1000	
Poll subdirectories in event directory		

- ____g. Click Assembly diagram (or any where else so that the save button is enabled) and then save (Ctrl +S) your changes
- ___ 2. Modify Java code:
 - ____a. From the assembly diagram of FFPSInboundModule, double-click Component1

___ b. Component1Impl.java is opened in Assembly editor. Scroll down to the method emitFlatFileBG and add this code under that method:

```
System.out.println("********Inside emitFlatFileBG: type .txt
files**********);
DataObject FlatFile = emitFlatFileBGInput.getDataObject("FlatFile");
DataObject Unstructured = FlatFile.getDataObject("Content");
String astext = Unstructured.getString("AsText");
System.out.println("File content----> "+astext);
```

Note: You can also copy the Java code from <FFFILES>\SplitBySizeJavaCode.txt.

- ____ c. Save (Ctrl + S) and close Component1Impl.java
- ____ d. Save (Ctrl + S) and close Assembly diagram: FFPSInboundModule
- ____3. Repeat Step 1 of part 2.3 to add the saved project **FFPSInboundModuleApp** to the server
- _____4. Test the application with and input file larger than 1000 Bytes

Note: For your convenience, a test file **SplitBySize.txt** is placed in **<FFFILES>**. The size of the file is around 3KB.

- _____a. Copy the **SplitBySize.txt** file from <FFFILES> to <EVENT_DIR>. The adapter will poll the copied file from the event directory and will transfer it to the archive directory
- ____ 5. Verify your results
 - ____a. Because you have placed a .txt file, it will pass through the emitFlatFileBG method and you should see this message in your Server Logs view

🔠 Task Flows 🙆 Build Activi	ities 🔲 Properties 🔝 Probler	ms 👔 Server I	.ogs 🕱 🖓 Servers 🕻 Asset Repositories 🛛 🖓 🗖				
🗓 • 🐉 • 🕋 🖿 🖬 🛧 😔 🤣 🛷 • 📿 🚮 🍸							
Welcome WebSphere Process Server v7.0 at localhost 🔀							
Console (filtered): WebSphere Process Server v7.0 at localhost							
Show All Record Types (Hierarchical) > with only Server State and Error Contents (Page 1 of 1)							
Туре	🔺 Time	Thread ID	Contents				
🔲 🗐 Log message	Dec 5, 2009 18:24:21.250	00000083	WSVR0221I: Application started: FFPSInboundModuleApp				
🗖 📑 Log message	Dec 5, 2009 18:25:28.062	000001ce	***********Inside emitFlatFileBG: type .txt files*******				
🗖 🗐 Log message	Dec 5, 2009 18:25:28.062	000001ce	File content> SplitBySize test content Segment 1:				
🗖 🗐 Log message	Dec 5, 2009 18:25:28.281	00000084	**************Inside emitFlatFileBG: type .txt files********				
🔲 🗐 Log message	Dec 5, 2009 18:25:28.281	00000084	File content> SplitBySize test content Segment 2:				
🔲 🗐 Log message	Dec 5, 2009 18:25:28.453	000001ce	*******************Inside emitFlatFileBG: type .txt files************************************				
🗖 📑 Log message	Dec 5, 2009 18:25:28.453	000001ce	File content> SplitBySize test content Segment 3: 🗾 🔽				

____b. For full stack of message, open your SystemOut.log located at <WID_HOME>\pf\wps\logs\server1 and verify this message:

E Console ×	🔲 🗶 💥 📑 🖬 🖬 🖬 🖬 🖬 👘 🖓 🖛 🗗					
WebSphere Process Server v6.1 [WebSphere Process Server] WebSphere Process Server v6.1 (WebSphere v6.1)						
[1/9/08 13:10:05:250 CST] 0000008d SystemOut	O ********Inside emitFlatFileBG: type .txt files**********					
[1/9/08 13:10:05:250 CST] 0000008d SystemOut	O File content> SplitBySize test content Segment 1:					
*****	* * * * * * * * * * * * * * * * * * * *					
*****	* * * * * * * * * * * * * * * * * * * *					
*****	* * * * * * * * * * * * * * * * * * * *					
*****	* * * * * * * * * * * * * * * * * * * *					
*****	* * * * * * * * * * * * * * * * * * * *					
******	*************************					
[1/9/08 13:10:05:281 CST] 00000091 SystemOut	0 *********Inside emitFlatFileBG: type .txt files***********					
[1/9/08 13:10:05:281 CST] 00000091 SystemOut	O File content> SplitBySize test content Segment 2:					
***************************************	***************************************					

[1/9/08_13:10:05:312_CST1_00000092_SystemOut	O **********Theide emitFlatFileBG: tune _tyt files**********					
[1/9/08_13:10:05:312_CST1_00000092_SustemOut	O File content ShitBuSize test content Segment 3.					
333333333333333333333333333333333333333	333333333333333333333333333333333333333					
333333333333333333333333333333333333333	***************************************					

Note: The same SplitBySize.txt file, if delivered without specifying Split criteria to 1000 (about 1KB), will reach the end point only once. Here, in this part, you saw the successful event delivery message for three times for the same file (with the file size being 3KB) because of the split criteria that has been given as 1KB, which means it splits the file into three parts and delivers to the endpoint.

1) 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

Address 🛅 C:\Labfiles70\FlatFileInbound\archivedir						
Folders	×	Name	Size	Туре		
🗆 🗁 ElatEileIobound		SplitBySize.txt.2009_12_05_18_25_28_437.success	ЗKB	SUCCESS File		
archivedir		Image: Sample.txt2.2009_12_05_18_13_34_515.success	1 KB	SUCCESS File		

6. Restore the Sever Configuration: follow the instructions under Step 3 of Part 2.3

Part 3: Content specific (non-pass through) scenario

Of the two flows, you have just tested the pass through scenario that does not involve data transformation. In this part of the lab, you will configure the non-pass through scenario using the new External Service option from the WebSphere Integration Developer and then test the configuration with different cases.

Content specific flow for the inbound scenario:



- Event data is picked from the event file based on SplitCriteria, converted into a byte[], and set on FlatFileInputStreamRecord.
- Protocol specific information like event file name, directory name are also set in the FlatFileInputStreamRecord.
- The FlatFileInputStreamRecord is sent to the foundation class and from there to the function selector. The function selector instantiates the wrapper and then based on the data handler property value in the chosen databinding, the function selector will invoke that data binding and get back a content specific data object (Customer SDO).
- This content specific data object is set on the wrapper data object. Protocol specific information is also set the wrapper. The wrapper is set in a BG and sent to the end point.

3.1. Configure content specific (non-pass through) scenario using external service wizard

In this part of the lab you will use this new external service feature to create and configure the function selector, **data handler**, data binding, and other required artifacts to test the inbound pass through scenario

- 1. Create FFCustomInboundModule
 - ____a. From the Business Integration window, right-click and select New > Module
 - ___b. From the New Module window, enter FFCustomInboundModule 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, FFCustomInboundModule, created from your Business Integration window

2. Import required business objects

New in V7.0: Wrapper business objects for the business objects containing global elements are supported in this version. So, you can now pass the protocol specific information as part of each request.

- ____a. Expand FFCustomInboundModule (if not already expanded), right-click **Data Types** and select **Import...** from the pop-up menu
- ____b. From the Import window, expand General and select File System and then click Next
- ____ c. Enter From directory
 - 1) Click Browse... next to From directory
 - 2) From the Import from directory window, select <FFFILES > and click OK

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

- _____d. Select the box next to Customer.xsd and Order.xsd
- ____e. Ensure that the FFCustomInboundModule 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 imported business objects:
 - _____a. Expand FFCustomInboundModule > Data Types and you will now see two new data types Customer and Order under it.

____b. Double-click **Customer** review the fields inside the object:

Г	-	
	📋 Customer	
	🚔 <click filter<="" th="" to=""><th>></th></click>	>
	e customerNa	me string
	e Address	string
	City	string
	e State	string
_ L	-	

4. Now, double-click Order and review the fields inside the object:

Г	-	П.
	📋 Order	
	Click to filter>	
	e OrderNumber string	
	CorderType string	
	e Quantity string	
	e Price string	
L		

- _____5. After reviewing, close the Customer business object from the Assembly editor
- 6. To start External Service from the Palette:
 - ____a. From the **Palette** on the left side of Assembly Diagram, click **Inbound Adapters**:
- 7. Under Inbound Adapters, click the **Flat File** and then click the empty canvas of the assembly diagram. The New Flat File Service wizard is opened

8. From the New External Service window, expand Adapters > Flat File and select Advanced: Create a Flat File service using the complete wizard



___a. Click **Next**

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

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

9. On the Select an Adapter screen, expand IBM WebSphere Adapter for Flat Files (IBM : 7.0.0.0) and select CWYFF_FlatFile



___a. Click Next

Note: If you are using the **File menu** option to start the external service wizard, you are asked to select the **processing direction** at this point. Select the radio button next to **Inbound** and click **Next** to proceed to the next step.

- _____10. Service configuration properties:
 - ____a. Deploy connector project: ensure that the default option With module for use by single application is selected
_ b. Under Connection Configuration, click Browse... next to Event directory and select <EVENT_DIR> from the pop-up window:

🚯 New External Service		
Service Configuration For this service, specify secur	Properties rity and connection configuration properties.	5
Deploy connector project:	With module for use by single application	
Connection settings;	Use properties below	V
Connection properties		
File system connection in	formation.	
Event directory:* C:\La	abfiles70\FlatFileInbound\eventdir 🛛 🚽	Browse

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

You can click each of the configurations and review the options available under it. This lab guides you through some of the important and required configurations.

- ____ d. Event persistence configuration:
 - 1) Ensure that the Auto create event table is checked
 - 2) Event recovery table name: FFCustomTable
 - 3) Event recovery data source (JNDI) name: jdbc/FF

Note: This represents the JNDI name of the Data Source used by Event Persistence to get the JDBC database connection. The Data Source must be created in the WebSphere Process Server. You can use the same data source JNDI name that you created in Step 3 of Part 1

 Event persistence configuration 	
🔽 Auto create event table	
Event recovery table name:	FFCustomTable
Event recovery data source (JNDI) name:	jdbc/FF
User name used to connect to event data source	
Password used to connect to event data source:	
Database schema name:	

Note: The Event recovery data source (JNDI) name is **not mandatory** from V6.1. Now, the adapter can use **in-memory representation** of event table to store all the necessary information. Adapter uses this feature when event database information is not configured during inbound event polling. This feature will not support the capability of handling "Ensure once-only event delivery".

____e. File archiving configuration:

1) Archive directory: click Browse... and select <ARCHIVE_DIR>

 File archiving configuration 			
Pass only file name and directory, not the content			
Archive directory:	C:\Labfiles70\FlatFileInbound\archivedir 🔫	Browse	
File extension for archive:	original		
Success file extension for archive:	success		
Failure file extension for archive:	fail		

Function selector configuration: Of the two function selectors that are supported by the FlatFile adapter, FilenameFunctionSelector was used for pass through scenario. The **EmbeddedNameFunctionSelector** is used in case of content-specific business objects, where the object name is embedded in the event file. For example, if the content-specific business object is CustomerWrapperBG, the function returned by the function selector is emitCustomer. This function selector should be configured with a data handler. The data binding should be the adapter-specific WrapperDataBinding. The data binding should be configured to use the same data handler configured with the function selector.

11. Under Service properties, for Function selector options, select **Use a function selector configuration** from the drop down menu

Note: If you select **Use default function selector** '**FilenameFunctionSelector**' option for the Function selector, the adapter automatically creates a function selector with FilenameFunctionSelector as the class name. For non-pass through scenario, you need to define a function selector that uses **EmbeddedNameFunctionSelector**.

- ____a. Click Select next to Function selector. The Binding Resource Configuration window is opened
- ____ b. Under 'Use existing function selector from the list', select EmbeddedNameFunctionSelector properties

🌐 Function Selector Configuration	_ 🗆 🗙
Select a Function Selector	
Select a function selector entry from the list. To use your own custom function selector, select the second radio button to add your custom function selector.	
• Us <u>e</u> existing function selector from the list	
	#
EmbeddedNameFunctionSelector properties FilenameFunctionSelector properties RootNameFunctionSelector properties	

___ c. Click Next

The following screen is Function Selector Properties screen where you will define the data handler and encoding used in inbound processing.

Data handler configuration:

- _____d. Click **Select...** next to Data handler configuration name. A Binding Resource Configuration window is opened for you to define the data handler
- ____e. Under 'Use existing data format transformation from the list', select XML > UTF8XMLDataHandler

Note: UTF8XMLDataHandler listed under XML is the predefined data handler with UTF-8 as the encoding. You can also select XML and then select the encoding of your choice in the next screen to define a data handler of your choice.

elect Data Format Transformation	
elect a data format transformation entry from the list. If you want to use your own custom ata transformation then select the second radio button to add your custom transformation.	
Use existing data format transformation from the list	
	±
🕀 😳 Delimited	
Fixed width	
Handled by WTX	
E - P ISON	
UTF8XMLDataHandler	
,	
Select your custom data format transformation from the workspace	
Data transformation class name:	Select
Add gustom class to binding registry	
escription:	
escription: On inbound, parses UTF-8 encoded XML data into a business object. On outbound, serializes bu	siness

___ f. Click Finish

____g. From the next screen, the Data handler configuration name that was selected in the previous steps - **UTF8XMLDataHandler** - is displayed



___h. Click Next

_____i. From the New Function Selector Configuration screen, enter CustomFS for Name

🚯 Binding Re	source Configuration	
New Functi	on Selector Configuration	
Create a new namespace, a	function selector configuration. Specify the module, folder, nd name for the function selector configuration.	
<u>M</u> odule:	FFCustomInboundModule Browse,	New
Name <u>s</u> pace:	http://FFCustomInboundModule	
F <u>o</u> lder:	Browse	
N <u>a</u> me:	CustomFS	

___ j. Click Finish

You are now done with configuring the function selector, CustomFS and, in that process, configured a data handler, CustomDH. You are back to the external service wizard and the configured function selector, CustomFS is displayed for function selector configuration field:

Service properties			
Function selector options:	Use a function selector configuration	~~~	
Function selector: *	CustomFS		Select

Data binding configuration:

12. 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 format options, select 'Use a data binding configuration for all operations'

Data format options:	Use a data format configuration for all operations	
Data format:	Not defined	Select

____b. Click Select... next to Data format. A Binding Resource Configuration window is opened

____ c. Select the radio button for 'Use existing data format transformation from the list' and then select FlatFileBaseDataBinding

👍 Data Binding Configuration	_ 🗆 🗙
Select Data Format Transformation Select a data format transformation entry from the list. If you want to use your own custom data transformation then select the second radio button to add your custom transformation.	0
• Use existing data format transformation from the list	
	#
FlatFileBaseDataBinding	

- ___ d. Click Next
- ____e. Select the UTF8XMLDataHandler for data handler:
 - 1) Click **Select** next to 'Configured data handler'
 - 2) From the Binding Resource Configuration window, select XML > UTF8XMLDataHandler listed under 'Use existing data format transformation from the list'
 - 3) Click Finish
- ____ f. Back to Data Transformation Properties and the selected data handler 'UTF8XMLDataHandler' is displayed here:

🚯 Data Binding Config	uration	
Data Transformati	on Properties	
Specify the properties for the data transformation.		
Select DataBinding if you want to use a data binding developed for earlier versions of the adapter.		
Binding type:	DataHandler	←
Configured data handler	: UTF8XMLDataHandler	Select
Configured data binding:	Not defined	Select,

___g. Click Next

- ____h. Note that the selected module is FFCustomInboundModule
 - 1) For the Name, enter CustomDB

Module:	FFCustomInboundModule	Browse,	New
Name <u>s</u> pace:	http://FFCustomInboundModule	🔽 Default	
F <u>o</u> lder:		Browse	
N <u>a</u> me:	CustomDB		

2) Click Finish

____ i. Now the **CustomDB** should be displayed for Data format

Service properties			
Function selector options:	Use a function selector configuration	•	
Function selector: *	CustomFS	Select	
Data format options:	Use a data format configuration for all operations	← •	
Data format: *	CustomDB	Select	

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

Define emitCustomerFile operation:

_____ 14. From the Operations screen, click Add...

Add Operation window is opened

____a. Select User-defined type for the Data type and click Next

🤀 Add Operation	
Specify the I/O Properties	
	63
	9
Operation properties	
Data type for the operation: User-defined type	

You are now back to Operation window and because you chose the User defined data type, the Input type is **blank** and because you have selected Output required box, the Output type is **CreateResponse**

- ____b. For Operation name, enter emitCustomerFile
- ____ c. Define Input type:
 - 1) Click New... next to Input type to open a New Business Object window

- 2) From this window, ensure that the Module selected is **FFCustomInboundModule** and click **Next**
- 3) Click **Browse...** next to Data type
- 4) From the Data Type Selection window, select **Customer** under Matching data types:

🕀 Data Type Selection 📃 🗆 🗙
Filter by type, namespace, or file (? = any character, $*$ = any string)
*
Matching data types:
Customer Customer Order

- 5) Click OK
- 6) From the wizard, check the box next to Generate business graph for each business object
- 7) Do not check the box for 'Generate retrieve container to retrieve multiple business objects'

Note: The 'Generate retrieve container to retrieve multiple business objects' is used only during outbound retrieve operation.

🤀 New Business Object From External Data	
Specify the Properties	€
Data type: * Customer {http://www.ibm.com/xmlns/prod/webs	Browse New

8) Click Finish

____d. The Input type in Add Operation window is populated with CustomerWrapperBG, because you have selected to have business graph (BG) generated

____e. For **Data format options**, accept the default selection **Use data format configuration 'CustomDB'** from the dropdown list

🤀 Add Operation		
Specify the I/O Proj	perties	
Operation name: *	emitCustomerFile	
Specify the Operation Inj		
Input type: *	CustomerWrapperBG {http://www.ibm.com/xmlns/proc	Dremsenn New
Data format options:	Use data format configuration 'CustomDB' 🔫 🚽	
Data format:	Not defined	Select

___ f. Click Finish

____g. The defined operation, emitCustomerFile, is populated in the Operations list

(Operations:	
l	🚥 🏶 emitCustomerFile ({http://www.ibm.com/xmlns/prod/websphere/j2ca/flatfile/customerwrapperbg}CustomerWrapperBG) : void	Add

Define emitOrderFile operation:

_____15. From the Operations screen, click Add...

Add Operation window is opened

____a. Select **User defined type** for the Data type and click **Next**

You are back to Operation window and because you chose the User defined data type, the Data type is blank.

- ____b. For Operation name, enter emitOrderFile
- ___ c. Define Data type:
 - 1) Click **New...** next to **Input type** to open a new window
 - 2) From the next screen, ensure that FFCustomInboundModule is selected and click Next
 - 3) Click Browse... next to Data type

4) From the Data Type Selection window, select **Order** under Matching data types:

Matching data types:			
Order			

5) Click OK

- 6) Do not check the box next to Generate business graph for each business object
- 7) Do not check the box for 'Generate retrieve container to retrieve multiple business objects'

Note: From V6.1, the generation of business graph is optional and you can leave this option unchecked. As a result, Adapter will not generate the BG for Order business object and you can confirm this bye reviewing the generated data types from the business integration view of your WebSphere Integration Developer.

Note: The 'Generate retrieve container to retrieve multiple business objects' is used only during outbound retrieve operation.

Data type:	* Order {http://www.ibm.com/xmlns/prod/websphere/jz= Browse New
Generate business gra	aph for each business object
Namespace for generated	business graph and container object.
Business object namespac	ce: http://www.ibm.com/xmlns/prod/websphere/j2ca/flatfile
Generate retrieve cor	tainer to retrieve multiple business objects.
0	

8) Click Finish

- ____d. The Input Type in Add Operation window is populated with **OrderWrapper**, because you have **not** selected to have business graph (BG) generated
- ____e. For Data format options, accept the default selection Use data format configuration 'CustomDB' from the dropdown list

Ор	eration name: *	emitOrderFile	
Spe	ecify the operation inp	ut	
	Input type: *	OrderWrapper {http://www.ibm.com/xmlns/prod/webs	Dromsenn New
	Data format options:	Use data format configuration 'CustomDB' 🔫 🛨	
	Data format:	Not defined	Select

___f. Click Finish

____g. The defined operation, emitOrderFile, is populated in the Operations list

Ор	erations:	
	emitCustomerFile ({http://www.ibm.com/xmlns/prod/websphere/j2ca/flatfile/customerwrapperbg}CustomerWrapperBG) : void emitOrderFile ({http://www.ibm.com/xmlns/prod/websphere/j2ca/flatfile/orderwrapper}OrderWrapper) : void	Add Edit

- ___h. Click Next
- 16. From the Generate Artifacts screen, enter these:

____a. For Name, enter FFCustomInboundInterface

Properties for service						
Module:	FFCustomInboundModule	New				
Namespace;	http://FFCustomInboundModule/FFCustomInboundInterface					
	☑ Use default namespace					
Name: *	FFCustomInboundInterface					
Description:						

___ b. Click Finish

17. You will now see a new export component, FFCustomInboundInterface in the assembly diagram of FFCustomInboundModule

PFCustomInboundMo	dule - Assembly Diagram 😣
👌 🚭 Palette	۲ 🕲
Ravorites	

- ____a. Save (Ctrl+S) your changes to the assembly diagram
- 18. Review the generated Native method bindings for the defined operations:
 - ____a. Ensure that the FFCustomInboundInterface is selected from the Assembly diagram
 - ____b. From the bottom panel, select Properties > Binding > Method bindings

Note: The Native method name should be 'emit' added as a prefix to the business object name, that is., Native method = emit + Business Object name. In this case, for the processed business object is Customer, the Native method is emitCustomer and for Order it is emitOrder.

- ___ c. From the Bound Methods list, click emitCustomerFile and you should see emitCustomer as the Native method
- ____ d. Now, click emitOrderFile from Bound Methods and you should see emitOrder as the Native method

19. Review FFCustomInboundModule: The generated Data Types, Interface, and the Function selector (CustomFS) Data binding (CustomDB), and Data handler (UTF8XMLDataHandler) under Configured Resources can be found inside FFCustomInboundModule



You can open each of these generated artifacts and business objects and review the properties inside.

Review the created methods inside the interface:

- ____a. From the Business Integration view, expand FFCustomInboundModule > Interfaces and then double-click **FFCustomInboundInterface** to open it
- ____b. You should see these two operations:

▼Int Confi	▼Interface 🔄 🗄 Configuration					
Nar	me	FFCustomInbo	undInterface	Refactor	r name	
Nar	mespace	http://FFCusto	omInboundModule/FFCustomInboundInterface	Refactor	r namespace	
Bind	ding Style	document liter	al wrapped	Change	Change binding style to document literal non-wrapped More	
▼Op Oper	Operations Sector Sec					
			Name		Туре	
T	🔝 🖏 emitCustomerFile 🔫 🛶 🛶					
D	DInputs emitCustomerFileInput			CustomerWrapperBG		
-	눬 emitOrd	erFile 룾				
D	DI Inputs emitOrderFileInput OrderWrapper					

____ c. Close the interface, FFCustomInboundInterface

3.2. Add Java component

In this part of the lab, you will add a Java component to the module and then wire the export to the added component. Then you will add the custom Java code to the added module.

- ____1. Open the assembly diagram for FFCustomInboundModule, if it is already not open
 - ____a. From the business integration view, expand FFCustomInboundModule and double click Assembly diagram
- 2. Drop a Java component to onto the assembly diagram
 - ____a. From the Palette, click Components to expand it
 - ____ b. Click Java and then click the empty space of FFCustomInboundModule assembly diagram. This will place a new component, Component1 on the assembly diagram.
 - 3. Wire the FFCustomInboundInterface to the Component1
 - ___a. Select the wire (11) icon from the Palette
 - ____b. Click FFCustomInboundInterface and then click Component1 to wire them together
 - ____ c. Select **OK** for the Add Wire pop-up window:

🚯 Add Wire 🛛 🔀
This action will allow the target service to be used in other modules. The service interface from the export will be added to the target. Do you want to continue?
Always create without prompt
Cancel

Your assembly diagram for FFCustomInboundModule will look like this:



- ___ d. From the top of the Palette, click the **Selection Tool** icon () to get back to the normal cursor mode
- _____ 4. Generate Java Implementation
 - ____a. Right-click Component1 and select Generate Implementation from the pop-up menu
 - _____b. On the **Generate Implementation** panel, select default package, and click **OK**

____ c. Component1Impl.java is opened in Assembly editor. Scroll down to the method emitCustomerFile(DataObject emitCustomerFileInput) that needs to be implemented and add this code under that method:

Note: The code is also available at <FFFILES>\CustomerJavaCode.txt for your convenience

_____d. Scroll down to the method emitOrderFile(DataObject emitOrderFileInput) and add this code:

Note: The code is also available at <FFFILES>\OrderJavaCode.txt for your convenience

____e. Save (Ctrl + S) and close Component1Impl.java

____5. Save (Ctrl + S) and close Assembly diagram: FFCustomInboundModule

3.3. Test non pass through scenario

In this part of the lab, you will use the WebSphere Process Server Test Environment to test the SCA application Inbound processing for the non pass through Scenario with input file having a single business object.

- _____1. Add the project to the WebSphere Test Environment server
 - ____a. Right-click WebSphere Process Server v7.0 under the Servers view and select Add and remove projects... from the pop-up menu
 - ____ b. From the Add and Remove Projects window, select FFCustomInboundModuleApp under Available projects panel and click Add >
 - ____ c. You will now see the FFCustomInboundModuleApp added to the Configured projects
 - _____d. Click **Finish** and wait until the project is being published onto the server. The server will start in Debug mode if it is not already started before
 - 2. Put the input files in the event directory

Note: For your convenience, the test files SingleCustomerBO.xml, SingleOrderBO.xml are placed in <FFFILES>.

- ____a. Copy the **SingleCustomerBO.xml** file from <FFFILES> to <EVENT_DIR>. The adapter will poll the copied xml file from the event directory and will transform it to the archive directory
- ____b. Check your **Server Logs** view (or Systemout.log file) for this successful message:

📅 Task Flows 🕝 Build Activities 🔲 Properties 🔝 Problems 🛅 Server Logs 🛛 🖓 Servers 🖪 Asset Repositories 🗧							
Welcome WebSphere Pro	cess Server v7.0 at localhost	x					
Console (filtered): We	ebSphere Process So	erver v7.0 a	t localhost				
Show All Record Types (Hierard of 1)	chical) > with only Server Stat	e and Error Cor	tents (Page 1 <type contents="" filter="" text="" the="" to=""></type>				
Туре	🔺 Time	Thread ID	Contents				
🔲 🗐 Log message	Dec 5, 2009 18:48:08.5	000001ce	WSVR02211: Application started: FFCustomInboundModule/	Арр			
🗖 📑 Log message	Dec 5, 2009 18:49:17.2	00000082	*****************ENDPOINT emitCustomer*****************				
🔲 🗐 Log message	Dec 5, 2009 18:49:17.2	00000082	FILENAME : SingleCustomerBO.xml				
🔲 🗐 Log message	Dec 5, 2009 18:49:17.2	00000082	NAME> IBM				
🔲 🗐 Log message	Dec 5, 2009 18:49:17.2	00000082	ADDRESS> 11501 Burnet Rd				
🔲 🗐 Log message	Dec 5, 2009 18:49:17.2	00000082	CITY> Austin				
🔲 🗐 Log message	Dec 5, 2009 18:49:17.2	00000082	STATE> TX				

___ c. Now copy the SingleOrderBO.xml file from <FFFILES> to <EVENT_DIR>. The adapter will poll the copied xml file from the event directory and will transform it to the archive directory

Туре	🔺 Time	Thread ID	Contents	
🔲 🗐 Log message	Dec 5, 2009 18:49:17.2	00000082	**************************************	
🗖 🗐 Log message	Dec 5, 2009 18:49:17.2	00000082	FILENAME : SingleCustomerBO.xml	
🔲 🗐 Log message	Dec 5, 2009 18:49:17.2	00000082	NAME> IBM	
🗖 🗐 Log message	Dec 5, 2009 18:49:17.2	00000082	ADDRESS> 11501 Burnet Rd	
🔲 🗐 Log message	Dec 5, 2009 18:49:17.2	00000082	CITY> Austin	
🗖 🗐 Log message	Dec 5, 2009 18:49:17.2	00000082	STATE> TX	
🗖 📑 Log message	Dec 5, 2009 18:50:26.8	00000083	**************************************	
🗖 🗐 Log message	Dec 5, 2009 18:50:26.8	00000083	FILENAME : SingleOrderBO.xml	
🔲 🗐 Log message	Dec 5, 2009 18:50:26.8	00000083	ORDER NUMBER> ABC12345	
🔲 🗐 Log message	Dec 5, 2009 18:50:26.8	00000083	ORDER TYPE> BULK	
🔲 🗐 Log message	Dec 5, 2009 18:50:26.8	00000083	QUANTITY> 500	
🗖 🗐 Log message	Dec 5, 2009 18:50:26.8	0000083	PRICE> 26.59	

_____d. Check your **Server Logs** view (or SystemOut.log) for this message:

- _____3. You can also verify the results by reviewing the archive directory
 - ____a. Check the **<ARCHIVE_DIR>** subdirectory, which should contain two archives of the event files with the same file name appended with year, month, date, system time, and success

Address 🛅 C:\Labfiles70\FlatFileInbound\archivedir					
Folders	×	Name	Size	Туре	
ElatEileInbound		SplitBySize.txt.2009_12_05_18_25_28_437.success	3 KB	SUCCESS File	
		SingleOrderBO.xml.2009_12_05_18_50_26_781.success	1 KB	SUCCESS File	
🖨 eventdir		SingleCustomerBO.xml.2009_12_05_18_49_17_265.success	1 KB	SUCCESS File	

- _____4. Restore the Sever Configuration
 - ____a. Right-click WebSphere Process Server v7.0 under the Servers view and select Add and remove projects... from the pop-up menu
 - ____b. Select FFCustomInboundModuleApp 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

3.4. Test non-pass through scenario with SplitByDelimiter

In this last part of the lab, you will use the WebSphere Process Server Test Environment to test the SCA application Inbound processing for the non pass through Scenario with input file having multiple business objects separated by a delimiter.

- 1. Configure/change the adapter properties from the Properties view:
 - ____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 FFCustomInboundModule and double-click FFCustomInboundModule to open it in Assembly Editor
- ____ c. Click FFCustomInboundInterface from the Assembly Editor and select Properties tab from the bottom
- _____d. Select **Binding** under Properties and select **End-point configuration** under Binding itself and then select the **Connection**
- ____e. Now click **Advanced>>** button at the bottom. You can see all the properties that were given during the external service wizard
- ____f. Scroll down to Additional configurations part and enter these:
 - 1) Select the box for 'Split file content based on size (bytes) or delimiter
 - Split function class name: com.ibm.j2ca.utils.filesplit.SplitByDelimiter (you can Browse... and select)
 - 3) Specify criteria to split file content: #####

Additional configuration		
Retrieve files with pattern:	* **	
☐ Include business object delimiter in the file content		
Retrieve files in sorted order:	No sort	
File content encoding:	UTF-8	Select
Specify the splitting function class name and the split criteria to split to Split file content based on size (bytes) or delimiter	he file content.	
Split function class name:	com.ibm.j2ca.utils.filesplit.SplitByDelimiter	Browse
Specify criteria to split file content:	#####	
Poll subdirectories in event directory		

- ____ g. Click Assembly diagram (or any where else so that the save button is enabled) and then save (Ctrl +S) your changes
- 2. Repeat Step 1 of Part 3.3 to add the saved project FFCustomInboundModuleApp to the server

3. Test the input file **CustomerSplitByDelimiter.xml**

Note: For your convenience, a test file **CustomerSplitByDelimiter.xml** is placed in **<FFFILES>**. The file contains two Customer Business Objects separated by the delimiter **#####**.

- ____a. Copy the **CustomerSplitByDelimiter.xml** file from <FFFILES> to <EVENT_DIR>. The adapter will poll the copied xml file from the event directory and will transform it to the archive directory
- ____b. Verify your results

1) Check your Server Logs view (or Systemout.log file) for this 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 #####.

Туре	▲ Time	Thread ID	Contents
🔲 🗐 Log message	Dec 5, 2009 18:56:30.8	00000083	WSVR02211: Application started: FFCustomInboundModuleApp
🔲 📑 Log message	Dec 5, 2009 18:56:51.2	000001c8	**************************************
🔲 📑 Log message	Dec 5, 2009 18:56:51.2	000001c8	FILENAME : CustomerSplitByDelimiter.xml
🔲 📑 Log message	Dec 5, 2009 18:56:51.2	000001c8	NAME> IBM
🔲 📑 Log message	Dec 5, 2009 18:56:51.2	000001c8	ADDRESS> 11501 Burnet Rd
🔲 📑 Log message	Dec 5, 2009 18:56:51.2	000001c8	CITY> Austin
🔲 📑 Log message	Dec 5, 2009 18:56:51.2	000001c8	STATE> TX
🔲 📑 Log message	Dec 5, 2009 18:56:51.3	00000193	**************************************
🔲 📑 Log message	Dec 5, 2009 18:56:51.3	00000193	FILENAME : CustomerSplitByDelimiter.xml
🔲 📑 Log message	Dec 5, 2009 18:56:51.3	00000193	NAME> MBI
🔲 📑 Log message	Dec 5, 2009 18:56:51.3	00000193	ADDRESS> RTP
🔲 📑 Log message	Dec 5, 2009 18:56:51.3	00000193	CITY> Raleigh
🔲 📑 Log message	Dec 5, 2009 18:56:51.3	00000193	STATE> NC

2) 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

Address 🛅 C:\Labfiles70\FlatFileInbound\archivedir						
Folders	x	Name 🔺	Size	Туре		
🗆 🚞 FlatFileInbound		CustomerSplitByDelimiter.xml.2009_12_05_18_56_51_375.success	1 KB	SUCCESS File		

4. Test the input file **OrderSplitByDelimiter.xml**:

Note: For your convenience, the test file **OrderSplitByDelimiter.xml** is placed in **<FFFILES>**. The file contains two Order Business Objects separated by the delimiter **#####**.

- ____a. Copy the **OrderSplitByDelimiter.xml** file from <FFFILES> to <EVENT_DIR>. The adapter will poll the copied xml file from the event directory and will transform it to the archive directory
- ____b. Verify the results for OrderSplitByDelimiter.xml file:
 - 1) Check your **Server Logs** view (or Systemout.log file) for this successful message:

Туре	🔺 Time	Thread ID	Contents
🗖 📑 Log message	Dec 5, 2009 18:58:24.9	00000083	**************************************
🔲 🗐 Log message	Dec 5, 2009 18:58:24.9	0000083	FILENAME : OrderSplitByDelimiter.xml
🗖 🗐 Log message	Dec 5, 2009 18:58:24.9	0000083	ORDER NUMBER> ABC12345
🗖 🗐 Log message	Dec 5, 2009 18:58:24.9	0000083	ORDER TYPE> BULK
🔲 🗐 Log message	Dec 5, 2009 18:58:24.9	0000083	QUANTITY> 500
🔲 🗐 Log message	Dec 5, 2009 18:58:24.9	0000083	PRICE> 26.59
🗖 🗐 Log message	Dec 5, 2009 18:58:25.0	00000193	**************************************
🔲 🗐 Log message	Dec 5, 2009 18:58:25.0	00000193	FILENAME : OrderSplitByDelimiter.xml
🗖 🗐 Log message	Dec 5, 2009 18:58:25.0	00000193	ORDER NUMBER> XYZ987
🔲 🗐 Log message	Dec 5, 2009 18:58:25.0	00000193	ORDER TYPE> SINGLE
🔲 🗐 Log message	Dec 5, 2009 18:58:25.0	00000193	QUANTITY> 1000
🗖 🗐 Log message	Dec 5, 2009 18:58:25.0	00000193	PRICE> 56.67

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 #####.

2) 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

	Address 📔	Address 🛅 C:\Labfiles70\FlatFileInbound\archivedir						
ĺ	Eolders X Name 🔺			Size	Туре			
	-	🗁 ElatEileInbound		CustomerSplitByDelimiter.xml.2009_12_05_18_56_51_375.success	1 KB	SUCCESS File		
		archivedir		OrderSplitByDelimiter.xml.2009_12_05_18_58_25_015.success	1 KB	SUCCESS File		

- ____ 5. Restore the Sever Configuration
 - ____a. Right-click WebSphere Process Server v7.0 under the Servers view and select Add and remove projects... from the pop-up menu
 - ____b. Select FFCustomInboundModuleApp 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

Part 4: Use default function selector and data binding

This part of the lab will show you how to use the default use the default function selector and data binding options from the external service wizard and generate other required artifacts.

When you use the default function selector, you cannot define the rules as you did in Part 2 and hence there will only be one method that handles all types of files.

When you use the default data binding, you cannot have multiple data types as in Part 3 and each data type is handled by different method. Instead, there will only be one method and one data type.

After running the external service wizard, you will add the required Java component with implementation and then will continue to test the adapter.

4.1. Configure inbound using default function selector and data binding

In this part of the lab you will use the default function selector and data binding options from the external service wizard and generate other required artifacts to test the inbound scenario.

- 1. Create FFDefaultsInboundModule
 - ____a. From the Business Integration window, right-click and select New > Module
 - ___b. From the New Module window, enter FFDefaultsInboundModule 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, FFDefaultsInboundModule, created from your Business Integration window

- ____ 2. To start an external service from the Palette:
 - ____a. From the **Palette** on the left side of Assembly Diagram, click **Inbound Adapters**:
 - ____b. Under Inbound Adapters, click the **Flat File** and then click the empty canvas of the assembly diagram. The New Flat File Service wizard is opened
- 3. From the New External Service window, expand Adapters > Flat File and select Advanced: Create a Flat File service using the complete wizard

🚯 New External Service
Select the Service Type or Registry 🛛 🙀 🥢
Select the type of service to create or registry to browse.
Eilter: type filter text
<u>A</u> vailable types:
 Adapters Advanced: Create a Flat File service using the complete wizard Advanced: Create a Flat File service to read from a local file
Description:
Creates a service that reads from or writes to a file on a local file system using the WebSphere® Adapter for Flat Files. You can create integrated processes, which include the exchange of data with the local file system, without special coding. During outbound processing, services running on WebSphere Process Server or WebSphere Enterprise Service Bus use the adapter to perform operations on files in the local file system, while during inbound processing, these services use the adapter to receive events from the local file system.

___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 that establishes connectivity with other systems.

Select Adapters > Flat File and click Next.

____4. On the Select an Adapter screen, expand IBM WebSphere Adapter for Flat Files (IBM : 7.0.0.0) and select CWYFF_FlatFile

<u>الم</u>
IBM WebSphere Adapter for Flat Files (IBM : 7.0.0.0) Gradient Content of the second

- ___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. Under Connection Configuration, click Browse... next to Event directory and select <EVENT_DIR> from the pop-up window:

📴 New 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 settings:	Use properties below					
Connection properties						
File system connection information.						
Event directory:* C:\La	bfiles70\FlatFileInbound\eventdir 🛛 🗧	Browse				

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

You can click each of the configurations and review the options available under it. This lab guides you through some of the important and required configurations.

_____d. Event persistence configuration: In this part of the lab, you will not use any JNDI instead use adapter's in-memory representation of event table to store all the necessary information

Note: The Event recovery data source (JNDI) name is **not mandatory** from V6.1. Now, the adapter can use **in-memory representation** of event table to store all the necessary information. Adapter uses this feature when event database information is not configured during inbound event polling. This feature will not support the capability of handling "Ensure once-only event delivery".

____e. File archiving configuration:

1) Archive directory: click Browse... and select <ARCHIVE_DIR>

-	File archiving configuration		
	Pass only file name and director	y, not the content	
	Archive directory:	C:\Labfiles70\FlatFileInbound\archivedir 🔫 🗕	Browse
	File extension for archive:	original	
	Success file extension for archive:	success	
	Failure file extension for archive:	fail	

- 6. Under Service properties, for Function selector options, select Use default function selector 'FilenameFunctionSelector' from the drop down list
- 7. For Data format options, select Use default data binding 'FlatFileBaseDataBinding' for all operations from the drop down list

iervice properties					
Function selector options	: Use default function selector 'FilenameFunctionSelector' 🥣 🛨				
Function selector:	Not defined	Select			
Data format options:	Use default data format 'FlatFileBaseDataBinding' for all operations				
Data format:	Not defined	Select			

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

Define emitFlatFileBG operation:

- 9. From the Operations screen, click Add...
 - ____a. Add Operation window is opened. Select Generic FlatFile business object with business graph for the Data type and click Next

Operation properties	
Data type for the operation:	Generic FlatFile business object with business graph 🗾

You are back to Operation window and because you have chosen the data type with business graph, the Input type is populated as **FlatFileBG**.

_____ 10. For **Operation name**, enter any name, for Ex: **emitFlatFileBG**

11. Accept the default selection, Use suggested data format 'FlatFileBaseDataBinding', for Data format options

🚯 Add Operation		
Operation		
Specify the properties for	the operation to add.	
Operation name: *	emitFlatFileBG	
Specify the operation inp	ut	
Input type;	FlatFileBG {http://www.ibm.com/xmlns/prod/websphere/j2ca/fl	Browse New
Data format options:	Use suggested data format 'FlatFileBaseDataBinding' 🔫 🚽	
Data format:	Not defined	Select

____a. Click Finish. The defined operation, emitFlatFileBG, is populated under Operations list

	Operations:	
	emitFlatFileBG ({http://www.ibm.com/xmlns/prod/websphere/j2ca/flatfile/flatfilebg}FlatFileBG) : void	Add
		Edit
1		

- ____b. Click Next from Operations screen
- ____ 12. From Generate Service screen, accept the default value, FlatFileExport, for Name

I	Properties for serv	vice		
	Module:	FFDefaultsInboundModule	-	New
	Namespace:	http://FFDefaultsInboundModule/FlatFileExport	_	
		Vse default namespace		
	Name: *	FlatFileExport		
	Description:			

- ___a. Click Finish
- 13. The Assembly diagram for FFDefaultsInboundModule is opened with an Export component, FlatFileExport:



_____14. Save (Ctrl + S) changes to your assembly diagram

4.2. Add Java component

In this part of the lab, you will add a Java component and then wire the component to the existing Export interface. The Java component is your endpoint.

- ____ 1. Open the assembly diagram for FFDefaultsInboundModule (if it is already not open)
 ___ a. From the business integration view, expand FFDefaultsInboundModule and double click Assembly diagram
- 2. Drop a Java component to onto the assembly diagram
 - ____a. From the Palette, click Components to expand it
 - ____ b. Click Java and then click the empty space of FFDefaultsInboundModule assembly diagram. This will place a new component, Component1 on the assembly diagram.
 - ___3. Wire the FFDefaultsInboundInterface to the Component1
 - ____a. Select the wire (11) icon from the Palette
 - ____b. Click FlatFileExport and then click Component1 to wire them together
 - ____ c. Select **OK** for the Add Wire pop-up window:
 - _____d. From the top of the Palette, click the **Selection Tool** icon () to get back to the normal cursor mode
 - ____e. Right-click the empty space of the Assembly diagram and select **Arrange Contents Automatically** from the pop-up menu

Your assembly diagram for FFDefaultsInboundModule will look like this:

3 *FFDefaultsInboundM	odule - Assembly Diagram 🛛	
👌 👯 Palette		۲ 🖆 🕲
₽ € € %		
🕞 Favorites	😲 🔁 FlatFileExport 🖂	Component1

- ____f. Right-click Component1 and select Generate Implementation from the pop-up menu
- ____g. On the Generate Implementation panel, select default package, and click OK
- ____h. Component1Impl.java is opened in Assembly editor. Scroll down to the method emitFlatFileBG that needs to be implemented and add this code under that method:

System.out.println("*******Reached Endpoint*********");

- ____i. Save (Ctrl + S) and close Component1Impl.java
- ____j. Save (Ctrl + S) and close Assembly diagram: FFDefaultsInboundModule

4.3. Test all defaults scenario

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

- _____1. Add the project to the WebSphere Test Environment server
 - ____a. Right-click **WebSphere Process Server v7.0** under the Servers view and select **Add and** remove projects... from the pop-up menu
 - ___ b. From the Add and Remove Projects window, select FFDefaultsInboundModuleApp under Available projects panel and click Add >
 - ____ c. You will now see the FFDefaultsInboundModuleApp added to the Configured projects
 - _____d. Click **Finish** and wait until the project is being published onto the server. The server will start in Debug mode if it is not already started before
 - 2. Test the application by providing three different input files:

Note: For your convenience, three test files, sample.txt, sample.txt1, sample.txt2 are placed in <FFFILES>.

- _____ a. Copy the any of the three test files (for Ex: sample.txt file) from <FFFILES> to <EVENT_DIR>. The adapter will poll the copied file from the event directory and will transfer it to the archive directory
- ____ b. No matter what type of file you put in Event directory, it will pass through the only existing method, FlatFileBG, and you should see this message your **Server Logs** view (or SystemOut.log):

Туре	▲ Time	Thread ID	Contents
🔲 🗐 Log message	Dec 5, 2009 19:08:48.2	000001ce	WSVR02001: Starting application: FFDefaultsInboundModuleApp
🗖 🗐 Log message	Dec 5, 2009 19:08:51.0	000001ce	WSVR02211: Application started: FFDefaultsInboundModuleApp
🗖 🗐 Log message	Dec 5, 2009 19:08:59.2	00000082	************Reached Endpoint*********

_ c. To verify your test results, 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



- ____ 3. Restore the Sever Configuration
 - ____a. Right-click **WebSphere Process Server v7.0** under the Servers view and select **Add and remove projects...** from the pop-up menu
 - ____b. Select FFDefaultsInboundModuleApp 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

Part 5: Use 'Create a service from a typical pattern'

In this part of the lab you will use the **typical pattern** option from the external service wizard to create and configure the function selector, data binding, and other required artifacts to test the inbound scenario.

Based on your selection, the binding resources (data binding and function selector) are created. You will review these later in this part.

After running the external service wizard, you will continue to add the Java component with implementation and then test the adapter.

5.1. Configure inbound using 'Create a service from a pattern (typical)' option

In this part of the lab you will use the **typical pattern** from the external service feature to create and configure the function selector

1. Create the module: FFTypicalInboundModule

____a. From the Business Integration window, right-click and select New > Module

- ___b. From the New Module window, enter FFTypicalInboundModule 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, **FFTypicalInboundModule**, created from your Business Integration window and the Assembly diagram for the same module is opened in the Assembly Editor.

2. Import required business objects

New in V7.0: Wrapper business objects for the business objects containing global elements are supported in this version. So, you can now pass the protocol specific information as part of each request.

- ____a. Expand FFTypicalInboundModule (if not already expanded), right-click **Data Types** and select **Import...** from the pop-up menu
- ____b. From the Import window, expand General and select File System and then click Next
- ____ c. Enter From directory
 - 1) Click Browse... next to From directory
 - 2) From the Import from directory window, select <FFFILES > and click OK

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

- _____d. Select the box next to **Customer.xsd**
- ____e. Ensure that the FFTypicalInboundModule 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 imported business object:
 - _____a. Expand FFTypicalInboundModule > Data Types and you will now see a new data type Customer and Order under it.

____b. Double-click **Customer** review the fields inside the object:

Г	-	
	📋 Customer	
	🔆 <click filter.<="" th="" to=""><th>></th></click>	>
	e customerNan	ne string
	e Address	string
	e City	string
	e State	string
- L		

- ____ c. After reviewing, close the Customer business object from the Assembly editor
- ____ 4. To start an external service from the Palette:
 - ____a. From the **Palette** on the left side of Assembly Diagram, click **Inbound Adapters**:
- 5. Under Inbound Adapters, click the **Flat File** and then click the empty canvas of the assembly diagram. The New Flat File Service wizard is opened
- 6. From the New External Service window, expand Adapters > Flat File and select Simple: Create an inbound Flat File service to read from a local file

🚯 New External Service
Select the Service Type or Registry 🛛 💂 🦟
Select the type of service to create or registry to browse.
Filter: type filter text
Available types:
🖃 💣 Adapters
🗄 🖷 📄 Flat File
Advanced: Create a Flat File service using the complete wizard
Simple: Create an inbound Flat File service to read from a local file
Description:
The Flat File inbound pattern creates a service that retrieves a file from a directory on the local file system. If the file is not in an XML format, you can specify a data handler that will transform from the file content format to business objects. The file content can be split if the content contains multiple copies of the data structure for processing.

___a. Click Next

_____7. From this Flat File service name screen, for Name, accept the default value 'FlatFileExport' and click Next

🚯 New Inbound Flat File Service 🛛 🗙					
Flat File se Specify the nar	Flat File service name Specify the name and location of the inbound Flat File service.				
<u>M</u> odule: Namegpace: F <u>o</u> lder: Name:	FFTypicalInboundModule Brows http://FFTypicalInboundModule/FlatFileExport Image: Defaultion of the second seco	e New Ilt e			
0	< <u>B</u> ack <u>N</u> ext > ⊟r	nish Cancel			

- 8. From the **Business object and directory screen**, enter these:
 - ____a. Click Browse... next to Business object and a Data Type Selection window is opened
 - ____b. Select Customer under Matching data types and click OK

🚯 Data Type Selection	_ 🗆 X
Filter by type, namespace, or file (? = any character, $*$ = and	ny String):
*	New
Matching data types:	
Customer	

- ____ c. Now, click Browse... next to Directory and a Browse For Folder window is opened
- ____ d. From this window, navigate to select <EVENT_DIR> and click OK
- ____e. Your Business object and directory screen should look like this:

What business ob	ject do you want to read from the input file?	
B <u>u</u> siness object:	Customer {http://www.ibm.com/xmlns/prod/websphere/j2ca/flatfile/custo	Browse
What directory st	nould be polled for the input file?	
Directory:	C:\Labfiles70\FlatFileInbound\eventdir	Browse

___f. Click Next

- 9. From the **Input file format and file content split option** screen, enter these:
 - ____a. For input file format, accept the default XML selection
 - ____b. For file content split option, accept the default selection, None

🚯 New Inbound Flat File Service		×
Input file format and file content split of Specify the input file format and the file content split	option.	
What is the input file format?		
<u>⊙ x</u> mL ○ Other		
Specify a data handler to transform the nati	ive data format to a business object.	
Data handler:		Browse,
 None Split file content by fixed size Size (in bytes); 		
C Split file content by delimiter		
Delimiter:		
C Split fil <u>e</u> content using a custom split	ter	- 1
⊆ustom splitter:		Browse
Split criteria:		
0	< Back Next > Einish	Cancel

___ c. Click Next

_____10. From the Archive directory and wrapper business object screen, enter these:

____a. Click Browse... next to Local archive directory and select <ARCHIVE_DIR>

__ b. Check the box next to **Use a wrapper business object to contain additional input file** information. This will generate a Customer Wrapper under the Data Types of your Module

Where do you want to archive the incoming input file?	
Optionally specify a local archive directory for processed files. The file extension will indica successfully processed.	te if the file was
Local archive directory: C:\Labfiles70\FlatFileInbound\archivedir	Browse
Se a wrapper business object to contain additional input file information	

- ___ c. Click Finish
- _____ 11. Save (**Ctrl + S**) changes to your assembly diagram

(C) *FFTypicalInboundMo	dule - Assembly Diagram 🛛
👌 🔮 Palette	
₽ • • • •	1
🔁 Favorites	PlatFileExport

12. Review the FFTypicalInboundModule and the generated artifacts: The generated Data Types, Interface, Data handler (UTF8XMLDataHandler) and Data binding (FlatFileXMLDataBinding) under Configured Resources can be found under FFTypicalInboundModule. You can open each of these generated artifacts, business objects and review the properties inside.



5.2. Add Java component

In this part of the lab, you will add a Java component and then wire the component to the existing Export interface. The Java component is your endpoint.

- ____ 1. Open the assembly diagram for FFTypicalInboundModule (if it is already not open)
 ___ a. From the business integration view, expand FFTypicalInboundModule and double click Assembly diagram
- 2. Drop a Java component to onto the assembly diagram
 - ____a. From the Palette, click Components to expand it
 - ____b. Click **Java** and then click the empty space of FFTypicalInboundModule assembly diagram. This will place a new component, **Component1** on the assembly diagram.
- ____ 3. Wire the FlatFileExport to the Component1
 - ___a. Select the wire (11) icon from the Palette
 - ____b. Click FlatFileExport and then click Component1 to wire them together
 - ____ c. Select **OK** for the Add Wire pop-up window:
 - _____d. From the top of the Palette, click the **Selection Tool** icon (12) to get back to the normal cursor mode
 - ____e. Right-click the empty space of the Assembly diagram and select Arrange Contents Automatically from the pop-up menu

Your assembly diagram for FFTypicalInboundModule will look like this:



- ____f. Right-click Component1 and select Generate Implementation from the pop-up menu
- ____g. On the Generate Implementation panel, select default package, and click OK
- ____h. **Component1Impl.java** is opened in Assembly editor. Scroll down to the method **emitCustomer** that needs to be implemented and add this code under that method:

Note: The code is also available at <FFFILES>\TypicalCustomerJavaCode.txt for your convenience

- ____i. Save (Ctrl + S) and close Component1Impl.java
- ____j. Save (Ctrl + S) and close Assembly diagram: FFTypicalInboundModule

5.3. Test typical pattern scenario

In this part of the lab, you will use the WebSphere Process Server Test Environment to test the SCA application Inbound processing for the typical pattern with input file having single business object.

- 1. Add the project to the WebSphere Test Environment server
 - ____a. Right-click **WebSphere Process Server v7.0** under the Servers view and select **Add and remove projects...** from the pop-up menu
 - ____ b. From the Add and Remove Projects window, select FFTypicalInboundModuleApp under Available projects panel and click Add >
 - ____ c. You will now see the FFTypicalInboundModuleApp added to the Configured projects
 - _____d. Click **Finish** and wait until the project is being published onto the server. The server will start in Debug mode if it is not already started before
 - 2. Put the input files in the event directory

Note: For your convenience, the test file SingleCustomerBO.xml is placed in <FFFILES>.

- ____a. Copy the **SingleCustomerBO.xml** file from <FFFILES> to <EVENT_DIR>. The adapter will poll the copied xml file from the event directory and will transform it to the archive directory
- ____b. Check your Server Logs view (or Systemout.log file) for this successful message:

Туре	🔺 Time	Thread ID	Contents
🗖 🗐 Log message	Dec 5, 2009 19:14:16.6	000001c8	WSVR02001: Starting application: FFTypicalInboundModuleApp
🗖 🗐 Log message	Dec 5, 2009 19:14:19.4	000001c8	WSVR02211: Application started: FFTypicalInboundModuleApp
🗖 📑 Log message	Dec 5, 2009 19:15:35.6	000001ce	*************ENDPOINT emitCustomer***********
🗖 🗐 Log message	Dec 5, 2009 19:15:35.6	000001ce	FILENAME : SingleCustomerBO.xml
🗖 🗐 Log message	Dec 5, 2009 19:15:35.6	000001ce	NAME> IBM
🗖 🗐 Log message	Dec 5, 2009 19:15:35.6	000001ce	ADDRESS> 11501 Burnet Rd
🗖 🗐 Log message	Dec 5, 2009 19:15:35.6	000001ce	CITY> Austin
🔲 🗐 Log message	Dec 5, 2009 19:15:35.6	000001ce	STATE> TX

- 3. You can also verify the results by reviewing the archive directory
 - ____a. Check the **<ARCHIVE_DIR>** subdirectory, which should contain one archive of the event file with the same file name appended with year, month, date, system time, and success

Folders	×	Name	Size	Туре
🗆 🕞 🗁 ElatEileIphound		SplitBySize.txt.2009_12_05_18_25_28_437.success	3 KB	SUCCESS File
archivedir		GingleOrderBO.xml.2009_12_05_18_50_26_781.success	1 KB	SUCCESS File

- 4. Restore the Sever Configuration
 - ____a. Right-click **WebSphere Process Server v7.0** under the Servers view and select **Add and remove projects...** from the pop-up menu
 - ____b. Select **FFTypicalInboundModuleApp** 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

Solution instructions

- 1. Start WebSphere Integration Developer V7.0 with a new workspace
 - ____a. Follow the instructions outlined in Part 1 of this exercise
- _____2. Import the solution Project Interchange
 - ____a. Import the project interchange file FFInbound_PI.zip from <LAB_FILES>\FlatFileInbound\solution directory
 - ____b. Select File → Import from the menu
 - _____ c. Select Other → Project Interchange in the Import dialog and click Next

🌐 Import	_ 🗆 🗙
Select Import a project and its dependent projects from a Zip file.	ù
Select an import source: type filter text	_
Test Web Web services Topology ML Topology HTTP Localized Model Project Interchange	
⑦ < Back Next > Enish	Cancel

- ____d. For the From zip file, click on the Browse button and select the FFInbound_PI.zip in the <LAB_FILES>>\ FlatFileInbound\solution directory
- ____e. Enter <LAB_FILES>\FlatFileInbound\workspace for the Project location root

____f. Click the **Select All** button. This will select all modules: **CWYFF_FlatFile**, **FFCustomInboundModule**, **FFDefaultsInboundModule**, **FFPSInboundModule**, and **FFTypicalInboundModule**

🤀 Import Project Ir	iterchange Contents	_ 🗆 🗙
Import Projects Import Projects from	a zip file.	ļ,
From zip file: Project location root:	C:\Labfiles70\FlatFileInbound\solution\FFInbound_PI.zip	Browse
CWYFF_FlatF CWYFF_FlatF FFCustomInb FFDefaultsIn FFPSInbound FFTypicalInbo	iile oundModule boundModule Module oundModule	
Select All Deselect	t All Select Referenced	
(?)	< <u>B</u> ack <u>N</u> ext > <u>Finish</u>	Cancel

____ g. Click Finish

- _____ 3. Test inbound pass through scenario:
 - ____a. Continue with **Part 2.3** and **Part 2.4** of this lab to test the inbound pass through scenario with and without SplitBySize
- 4. Test inbound non pass through scenario:
 - ____a. Continue with **Part 3.3** and **Part 3.4** of this lab to test the inbound non pass through scenario with and without SplitByDelimiter
- _____ 5. Test inbound scenario with default data binding and data handler: Continue with Part 4.3 of this lab
- 6. Test inbound scenario using typical pattern: Continue with **Part 5.3** of this lab
IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

What you did in this exercise

In this lab, you started with importing the Flat File Adapter RAR file into your WebSphere Integration Developer new workspace. Next, you made use of the external service wizard available in WebSphere Integration Developer to specify activation spec properties, define data binding, data handler, and function selectors which, after deploying onto the server, will generate Business Objects and other artifacts.

At the end of each part, you deployed and then tested the adapter application for these scenarios - passthrough (with and without SplitBySize) test scenario, two content specific or non pass through (with and without SplitByDelimiter) test scenarios, using all defaults (default data binding, function selector) scenario, and then finally using the typical pattern.

Task: Adding remote server to WebSphere Integration Developer test environment

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

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

🔀 Task Flows 🗟 Build Activities 🔲 Properties 🗌	🐮 Problems 👔 Server Logs 👫 Serve	ers 🕱 🚺 Asset Repositories 🛛 🗖 🗖
		🂠 🜔 🖉 📕 🕮 🛗
Server A	State	Status
🛛 💀 WebSphere Process Server v7.0 at localhos		
	Ne <u>w</u>	🕨 👕 Server 🔪
	Open	F3

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

🖶 New Server
Define a New Server
Choose the type of server to create
Server's host name: mvsxxx.rtp.raleigh.ibm.com
Download additional server adapters
Select the server type:
type filter text
WebSphere Business Monitor Server v7.0 on WebSphere Application Server WebSphere Business Monitor Server v7.0 on WebSphere ESB WebSphere Business Monitor Server v7.0 on WebSphere Process Server WebSphere ESB Server v7.0 WebSphere Portal v6.0 Server WebSphere Portal v6.1 Server WebSphere Process Server v7.0 WebSphere Portal v6.1 Server WebSphere Process Server v7.0 WebSphere Portal v6.1 Server WebSphere Process Server v7.0 WebSphere Process Server v7.0
Runs service projects on the websphere process server 47.0.
Server name: WebSphere Process Server v7.0 at mvsxxx.rtp.raleigh.ibm.com
Server runtime environment: WebSphere Process Server v7.0
Configure runtime environments

___e. Click Next

IBM WEBSPHERE ADAPTER 7.0 – LAB EXERCISE

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

🌐 New Server						
WebSphere Application Server Settings Input settings for connecting to an existing WebSphere Application Server.						
Profile name:	Configure profiles					
Server connection types and administrative ports Automatically determine connection settings Manually provide connection settings						
Connection Type	Port	Default port	Description			
IPC		9633	Recommended for local servers			
RMI FA COAR	0000	2809	Designed to improve communication wit			
	0000	0000	Designed to be more nirewaii compatible			
Run server with resource	Run server with resources within the workspace					
Security is enabled on this server						
Current active authentication settings:						
User <u>I</u> D:	ssadmin					
Pa <u>s</u> sword:	J					
Application server name:	server1					
Test Connection						

____ i. Click Finish.

____j. The new server should be seen in the Server view.

🔀 Task Flows ᢙ Build Activities 🔲 Properties 🔝 Problems 🔞 Se	rver Logs 👭 Servers 🕱	🕼 Asset Repositories 👘 🗖
		🌼 🜔 🖉 🔳 🛅
Server 🔺	State	Status
🗱 WebSphere Process Server v7.0 at localhost	🖡 Started	Synchronized
24 WebSphere Process Server v7.0 at mvsxxx.rtp.raleigh.ibm.com	🚡 Stopped	Synchronized

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

'telnet <HOSTNAME> <TELNET_PORT>'

User ID : <USERID>

Password : <PASSWORD>

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____b. Navigate to the bin directory for the profile being used:

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

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

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

ADMU3200I: Server launched. Waiting for initialization status ADMU3000I: Server sssr01 open for e-business; process id is 0000012000000002