Java CAPS 6
Using JCA and JBI, Note 3

Batch Inbound, through Batch Local File to BPEL 2.0

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1 Introduction

Java CAPS 6 has the 5.x compatibility infrastructure which allows one to import 5.x projects right into Java CAPS 6, build, deploy and run without changes. One can also develop repository-based projects in Java CAPS 6 – that's the 5.x-style projects. This is the old way of developing Java CAPS solutions – still good and valid.

If one were to decide to not use the old way there is the JBI infrastructure, which allows development of solutions that use BPEL Service Engine, XSLT Service Engine, IEP Service Engine, Java EE Service Engine, etc., and a variety of Binding Components. The implication is that business logic is implemented in BPEL 2.0, which is used to orchestrate other services and resources, including interaction with external systems through Binding Components. This is the new way of developing Java CAPS solutions – 100% compatible with the Open Source OpenESB project since it uses the OpenESB project-developed container and components.

Someone might ask "so what happened to eGate?". "eGate" meaning Java Collaboration Definition-like logic components, eWays and the JMS messaging backbone.

While the facility seems underadvertised/downplayed, Java CAPS 6 provides a number of 5.1 eWay-based JCA Adapters and a moderately easy means of developing JCA Message-Driven Beans that can use these adapters to implement JCD-like logic components and, effectively, eGate-like solutions that do not use BPEL or the JBI infrastructure.

This Note discusses and illustrates the implementation of a mixed Java CAPS 5.x-like integration solution that retrieves a file from the local file system using JCA Adapters and passes its content to a BPEL 2.0 process executing in the JBI container. This requirement I have seen and heard of being implemented in 5.x many times by many customers.

Most of the material in the first 16 pages of this Note is the same as in Note 2.

The JCA Message-Driven Bean, the piece of JCD-like Java logic, will be triggered by a Batch Inbound Adapter (what one would have called the Batch Inbound eWay in 5.1), will read the content of the file using the Batch Local File Adapter (eWay) and will send the payload as a string to a BPEL 2.0 Business Process, which will be triggered by this message and will execute in the JBI container. The batch Inbound Adapter will be configured to use a regular expression to match the name of the file. Once it finds the file it will rename the file by prepending the GUID to the name and will pass the new name, the original name and the directory path to the Java code. This is exactly what the 5.1 Batch Inbound does. The JCA MDB will use the new name, the original name and the directory path to dynamically configure the Batch Local File Adapter to retrieve the file content and rename the file (post transfer) to the original name with some string appended to indicate that the file was processed. This, too, is exactly what one would do in a 5.1 JCD in the same circumstance. Once the payload is available the JCA MDB will use the OneWay WSDL interface and the JBI NMR to send it, as a String, to a BPEL 2.0 process. Both the JCA MDB and the BPEL process will be a part of the same JBI Composite Application and will communicate with one another using the Normalized Message Router (NMR).

2 Create Connection Pool and JNDI Reference

Before one can use the Batch Inbound and Batch Local File JCA Adapters one must create and configure connection pools, one for each distinct directory+file combination and a corresponding JNDI reference. If the Batch Local File Adapter is to be dynamically configured the connection pool used for the Batch Inbound can be re-used since directory and file property values will be set at runtime.

If the BatchInbound_generic resources already exist, perhaps because they were created when working through Note 2, they can be reused and the following steps in this section can be skipped.

Let's create the connection pool for the Batch adapter. This will be a generic pool used by both the Batch Inbound and the Batch Local File because the Batch Inbound Adapter's configuration is specified at the time the JCA MDB is created and the Batch Local File Adapter we will be using will be configured dynamically from the Java code.

Start the Application Server Admin Console and navigate to Resources> Connectors> Connector Connection Pools. Click the New … button and configure properties for Step 1 of 2 - Name: BatchInbound_generic, Resource Adapter: sun-batch-adapter, Connection Definition: make sure to choose the BatchLocalApplicationConnectionFactory. Figure 2-1 illustrates this configuration.

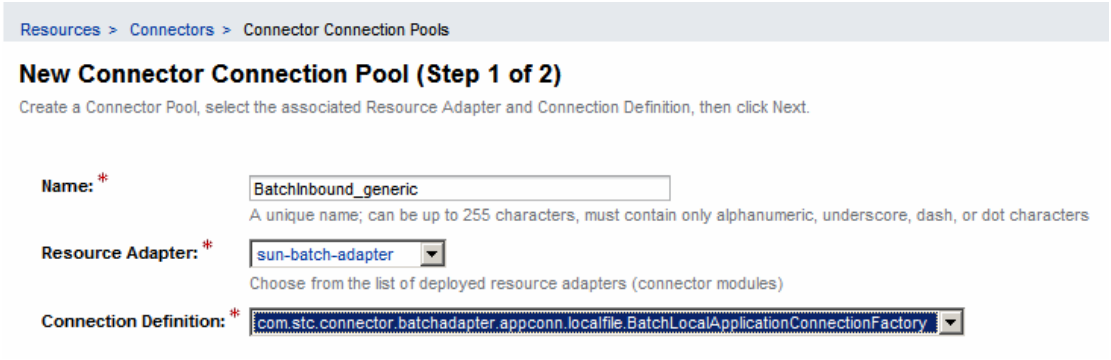


Figure 2-1 Configure pool name and adapter for which it is intended

Click Next and configure properties for Step 2 of 2 – leave all properties as they are. Figure 2-2 illustrates some of the settings for Step 2.

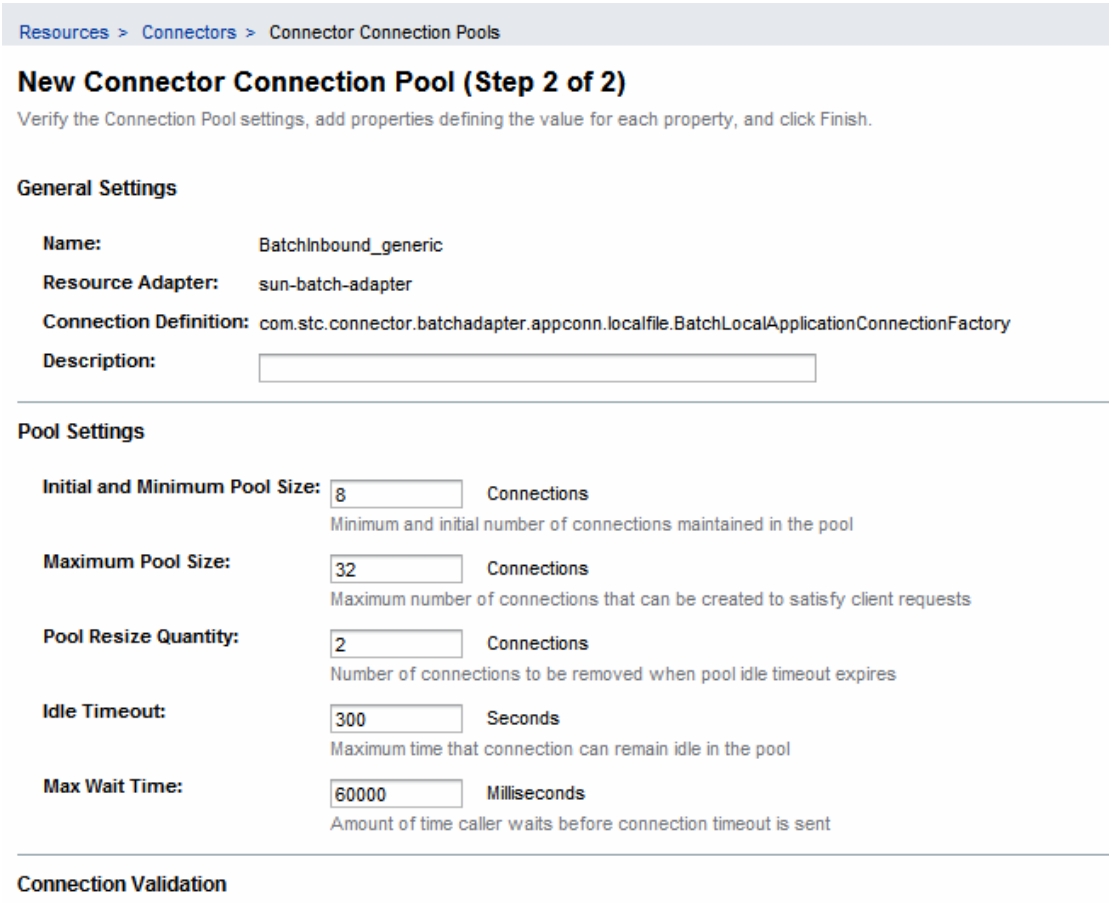


Figure 2-2 Settings for Step 2

Click Finish.

The proceeding steps created a connection pool for the Batch Local Adapter. This pool is good for generic Batch Inbound as well as a generic, dynamically configured Batch Local File. As the pool was created an entry with the same name was added to CAPS> Connector Connection Pools. As previously stated, the Batch Inbound is configured at JCA MDB creation time and the Batch Local File will be configured dynamically so there is no need to do anything to the CAPS> Connector Connection Pool entry. Had we used a static configuration CAPS> Connector Connection Pool

entry would be the place to configure static property values like directory, file name, pre- and post-transfer, etc..

The Bach Local File Adapter configuration wizard, used later, will require a JNDI reference to the connection pool we just created. We must create this JNDI reference.

Let's navigate to Resources> Connectors> Connector Resources and choose New … Let's name this reference jndiBatchInbound_generic and associate it with the BatchInbound_generic pool we created earlier. Figure 2-3 illustrates this.

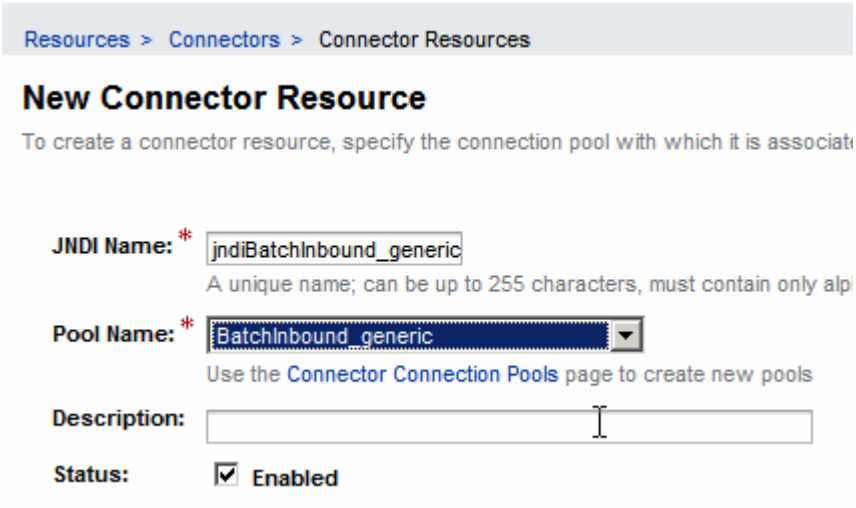


Figure 2-3 Create a JNDI reference to the connection pool

3 Create Project Group JCABatchProjects_PG

As on previous occasions, let's create a new project group to contain projects we will be building in this Note. The group will be called "JCABatchProjects_PG".

If the project group already exists, perhaps because it was created when implementing the solution described in Note 2, the following steps in this section can be skipped.

Let's right-click anywhere in the Projects tab and choose Project Groups -> New Group … to start the wizard. Figure 3-1 shows the dialog box where project group name and file system directory path are specified.

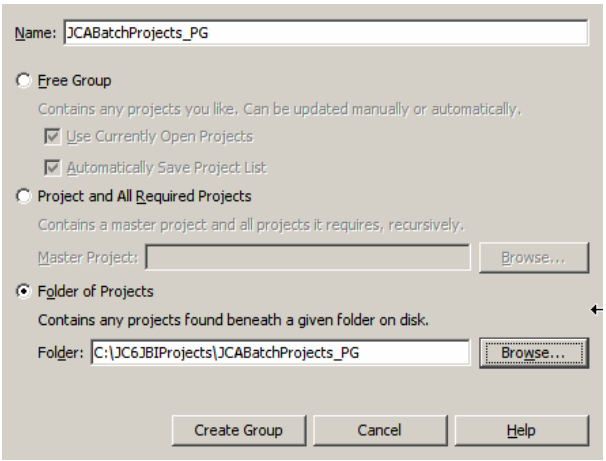


Figure 3-1 Creating a new Project Group

4 Create EJB Module and OneWay WSDL

Create a new Enterprise -> EJB Module project, BInboundThroughBLFToBPEL20_EJBM, making sure to pick the correct folder for project files. This has been done before so no picture will be shown ☺

The JCA MDB we will create in the next section will interact with the BPEL 2.0 Process through the JBI NMR. To facilitate that interaction we must create a WSDL interface document in which the abstract part defines the message to be sent and the operation. Because the NetBeans IDE will not help us to create a Web Service Client infrastructure unless the concrete part of the WSDL is also defined we will define the concrete part including the binding and the service, pretending that it is a SOAP service.

The entire payload, as a string, will be sent to the BPEL process so the message will have one part of type xsd:string.

Let's create a new WDL Document, name it wsdlPayloadToBPEL, name the operation opSubmitPayload, make sure to change the type to One-Way operation, accept the SOAP binding default and complete the wizard. Figures 4-1 through 4-? Illustrate key steps in the process.

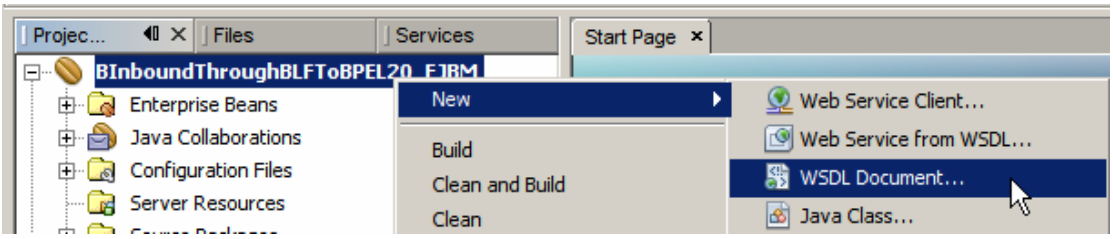


Figure 4-1 Initiate WSDL Wizard

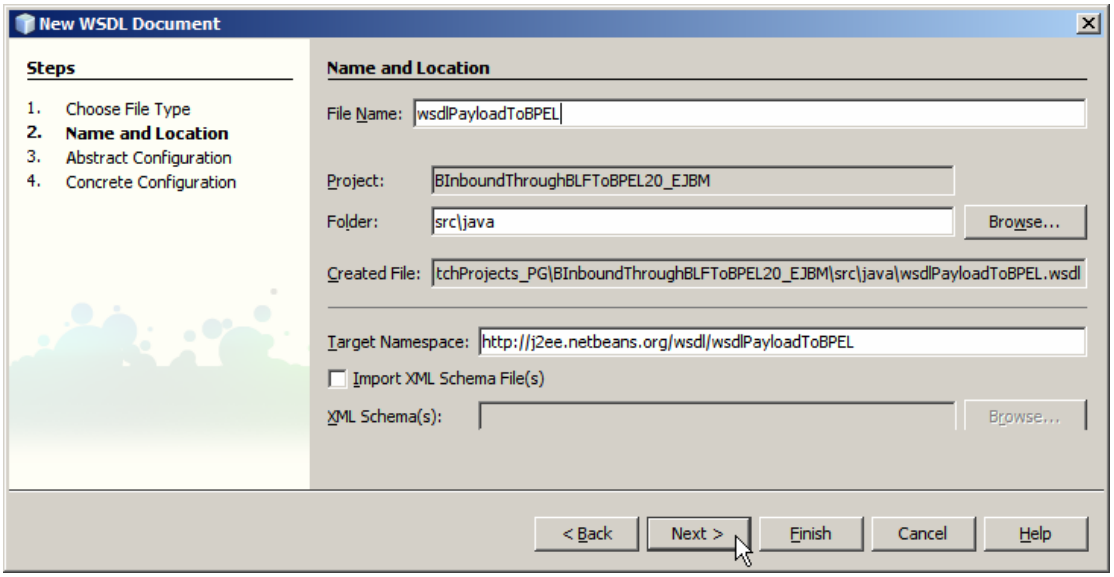


Figure 4-2 Name the WSDL

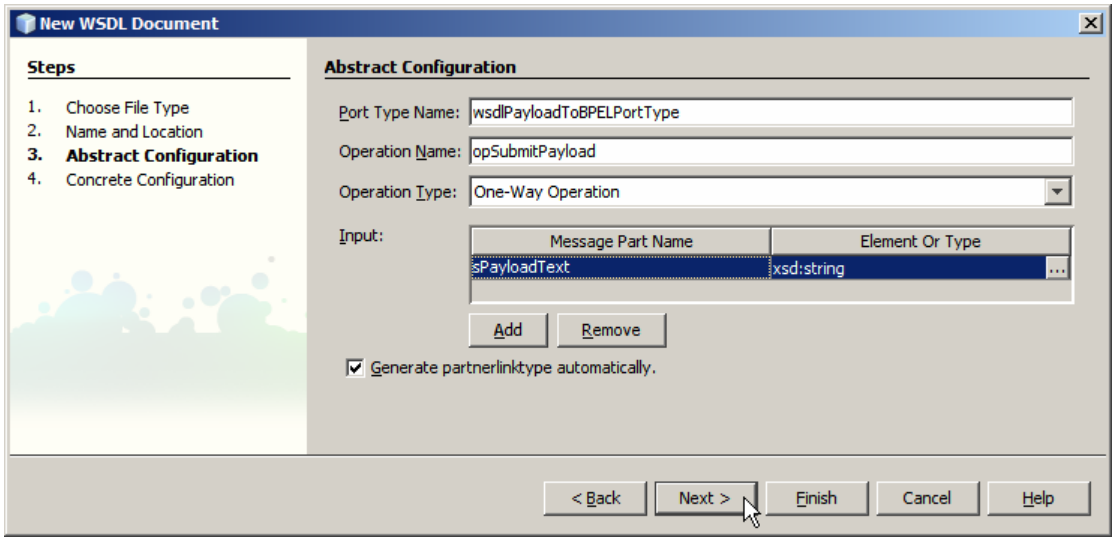


Figure 4-3 Name operation, nominate its type and name the message part

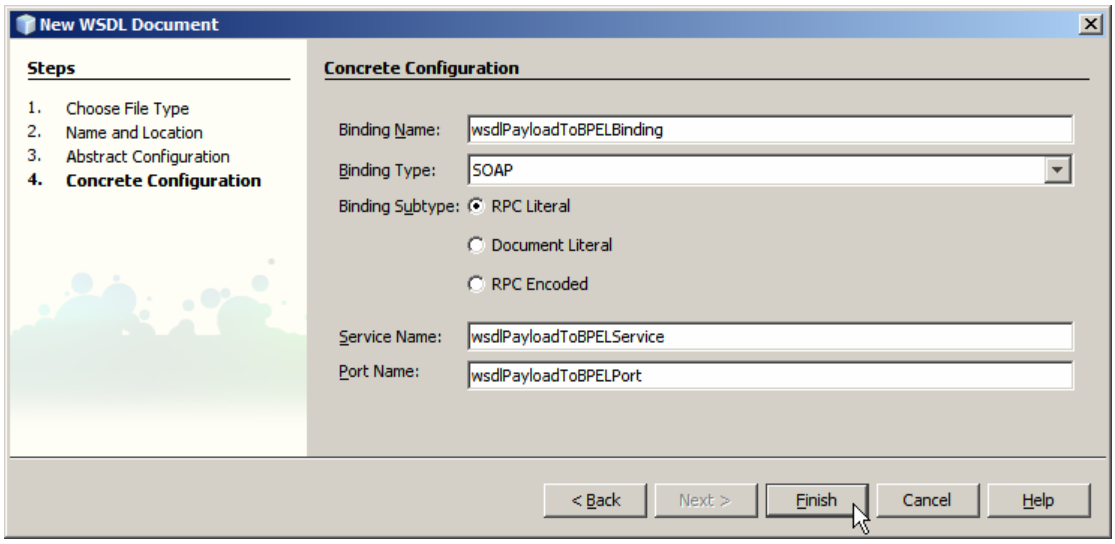


Figure 4-4 Complete the Wizard

Since we will not actually implement the service at this point we don't need to concern ourselves with the end-point address.

5 Create JCA Message-Driven Bean

Create a new JCA Message Driven Bean, jcaBInboundThroughBLFToBPEL20. Figures 5-1 and 5-2 illustrate the initial steps.

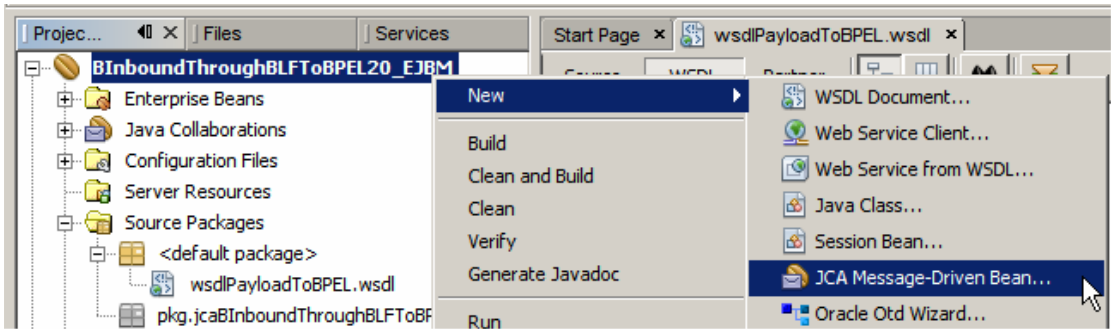


Figure 5-1 Choose JCA Message-Driven Bean

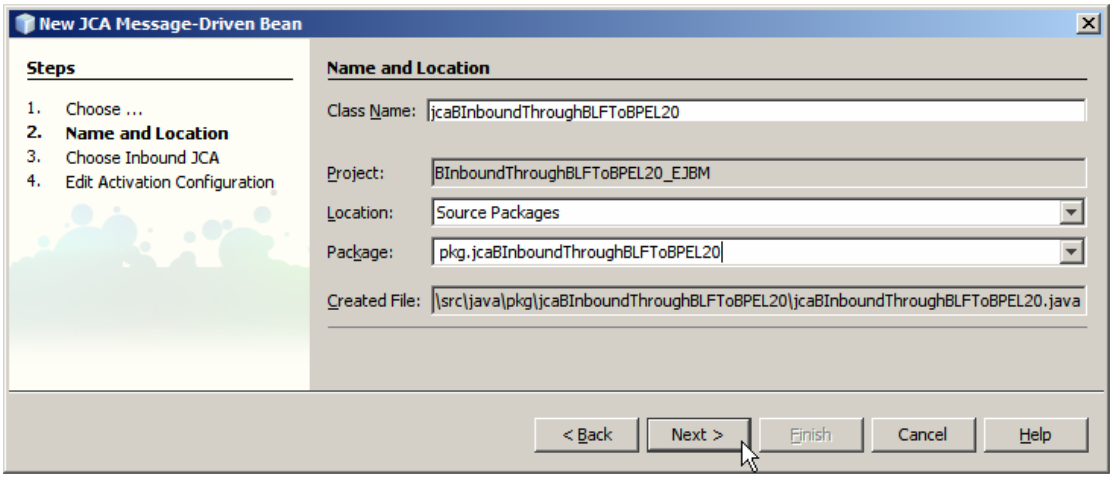


Figure 5-2 Name the bean and the package

Select the Batch JCA Adapter and configure its properties. Click on the ellipsis button at the right of the Configuration field. Figures 5-3 and 5-4 illustrate the steps.

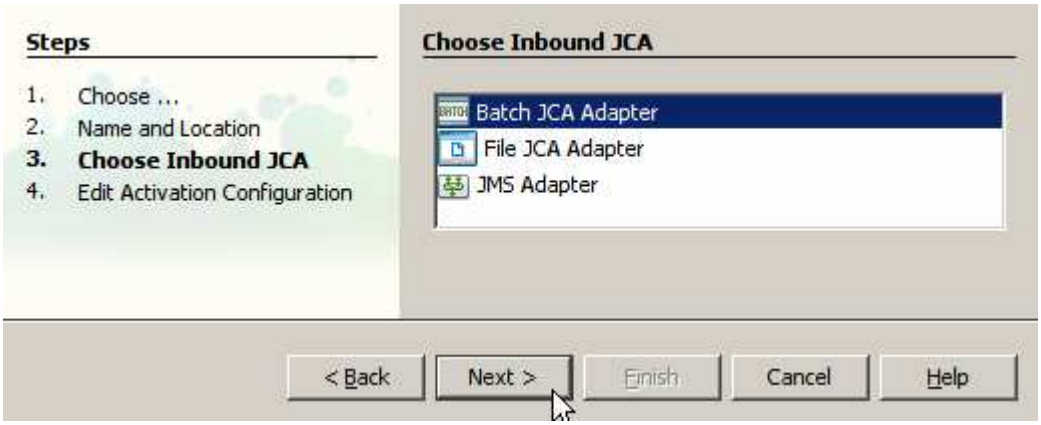


Figure 5-3 Choose Batch JCA Adapter.

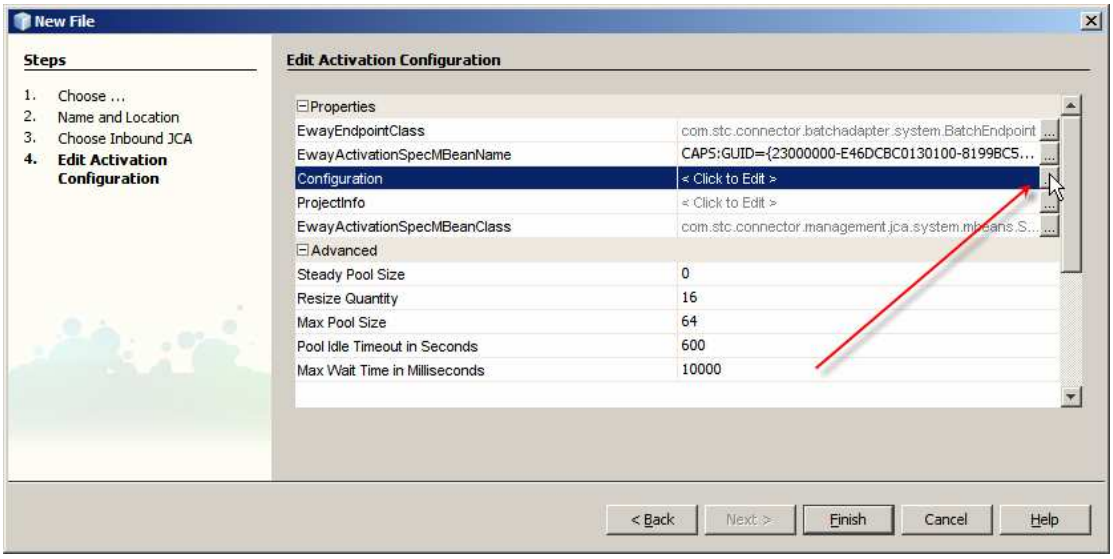


Figure 5-4 Trigger configuration editor

Let's configure the Batch Inbound properties as shown in Figure 5-5, click Close and click Finish. This assumes that the project developed in Note 2 is not deployed,

otherwise the two Batch Inbound instances will compete for the same file. If this is the case just change the name of the trigger file.

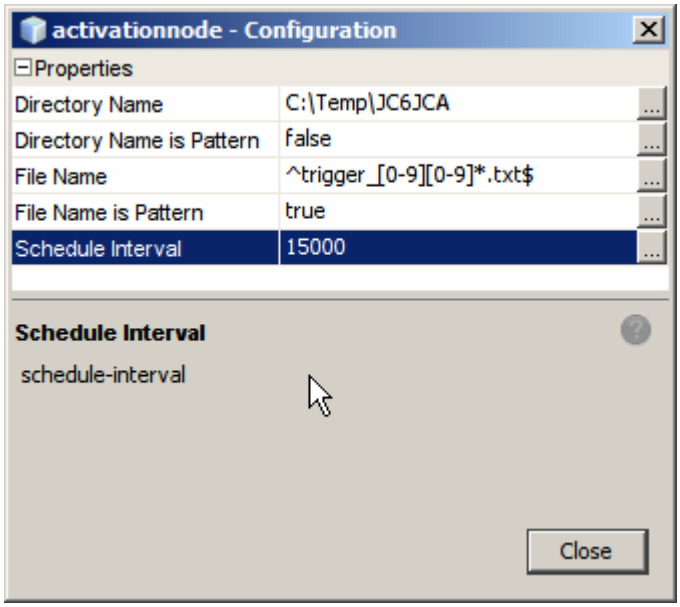


Figure 5-5 Batch Inbound configuration

The Java code shown in Figure 5-6 will appear.

```
package pkg.jcaBInboundThroughBLFToBPEL20;


import javax.ejb.MessageDriven;
import com.stc.connector.batchadapter.appconn.BatchAppconnMessage;
import com.stc.connector.batchadapter.system.BatchListener;

/**
 *
 * @author mczapski
 */
@MessageDriven(name="pkg.jcaBInboundThroughBLFToBPEL20.jcaBInboundThroughBLFToBPEL20")
public class jcaBInboundThroughBLFToBPEL20 implements BatchListener {

    public jcaBInboundThroughBLFToBPEL20() {
    }

    public void onBatchFileList(BatchAppconnMessage data) throws Exception {
        // implement listener interface here

    }
}
```

Figure 5-6 JCA MDB template source

The Batch Inbound configuration can be modified through the right-click menu off the Java Collaborations node under the EJB Module project tree. Figures 5-7 and 5-8 highlight key points.

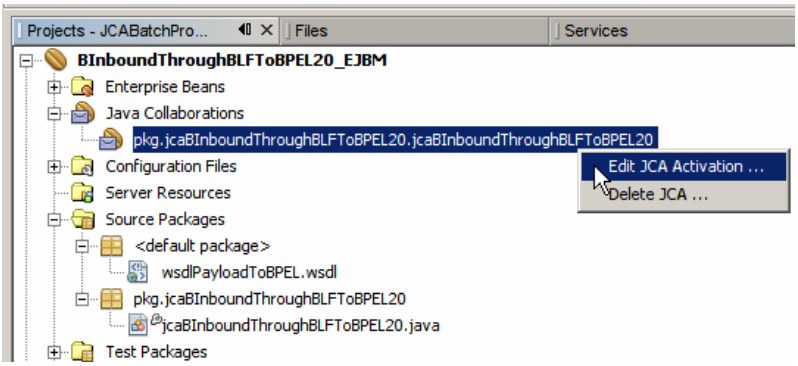


Figure 5-7 Triggering the Edit JCA Configuration Dialogue Box

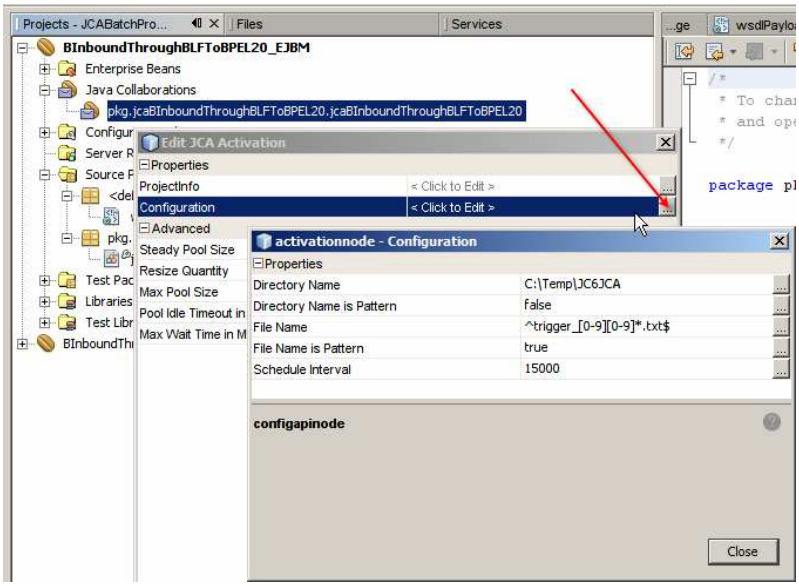


Figure 5-8 Accessing Inbound JCA Adapter Configuration

The skeleton MDB needs business logic to do something useful. The next step in the process is addition of the Batch Local File JCA Adapter invocation.

Let's drag the Batch JCA icon from the palette to the source code window inside the receive method, as illustrated in Figure 5-9, choose the Batch Local File OTD, as illustrated in Figure 5-10, invent and enter a method name and choose the JNDI reference to the connection pool created at the beginning of the process in section 2, as illustrated in Figure 5-11. Note that when choosing a JNDI reference it mat take some time for the JNDI 'tree' to appear in the dialog box. There is no indication that work is going on in the background. The dialogue box appears like that shown in Figure 5-12. After a while it will change to look similar to that shown in Figure 5-13, which indicates that the resource tree is ready to be expanded and pool reference can be chosen. Until the usability fix is available just be patient.

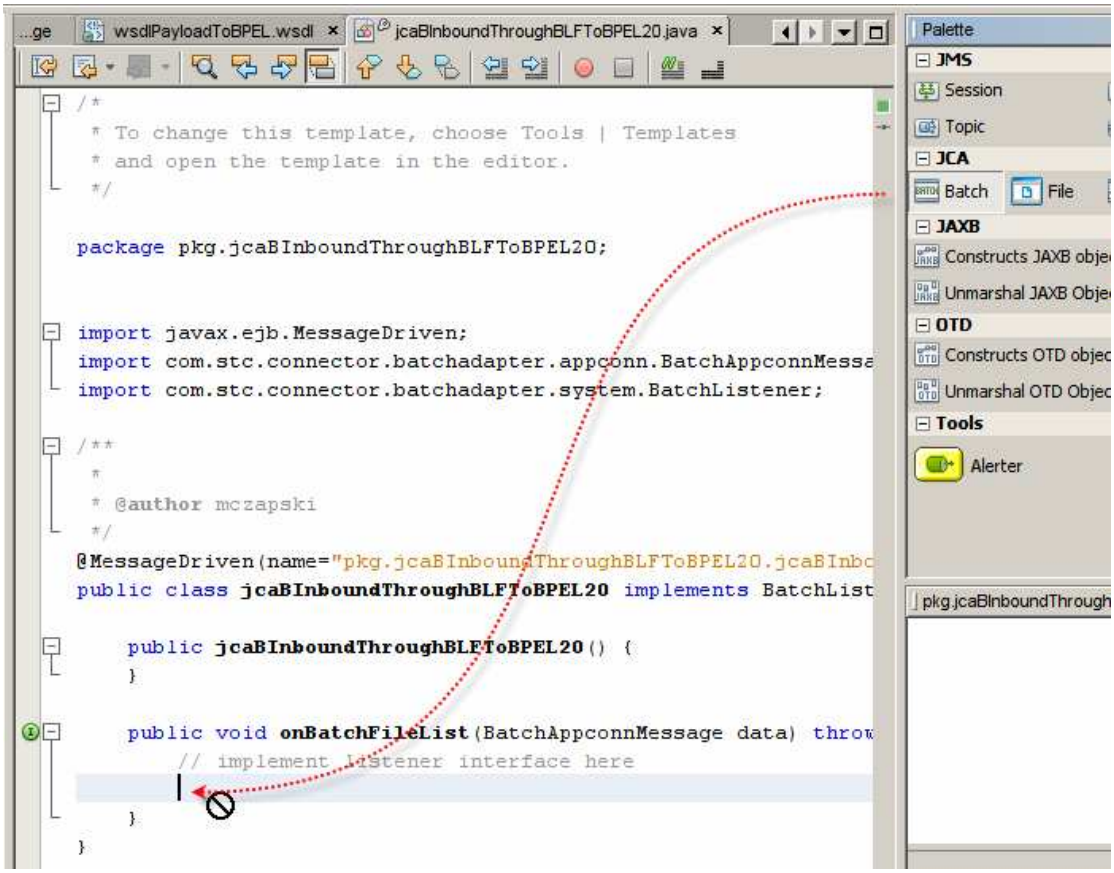


Figure 5-9 Adding Batch JCA to the MDB

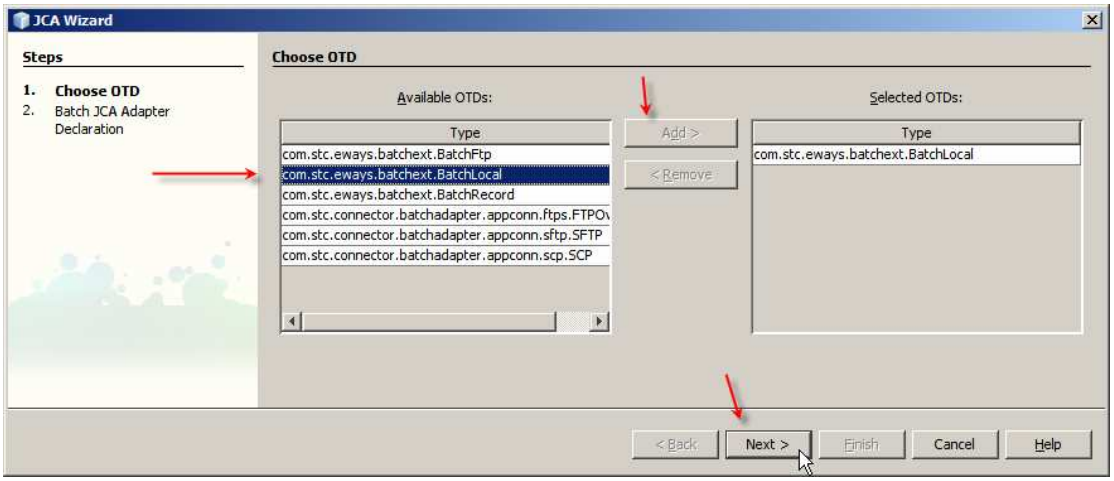


Figure 5-10 Choosing the Batch Local File OTD

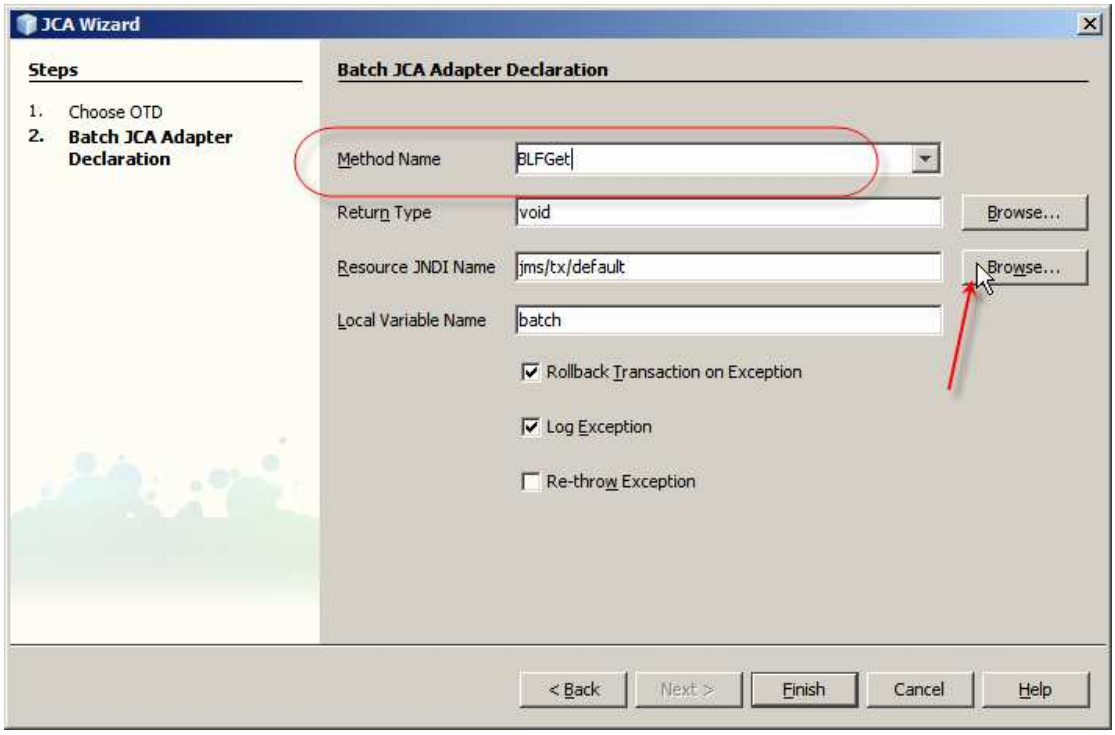


Figure 5-11 Invent the method name and start the process of choosing JNDI Reference

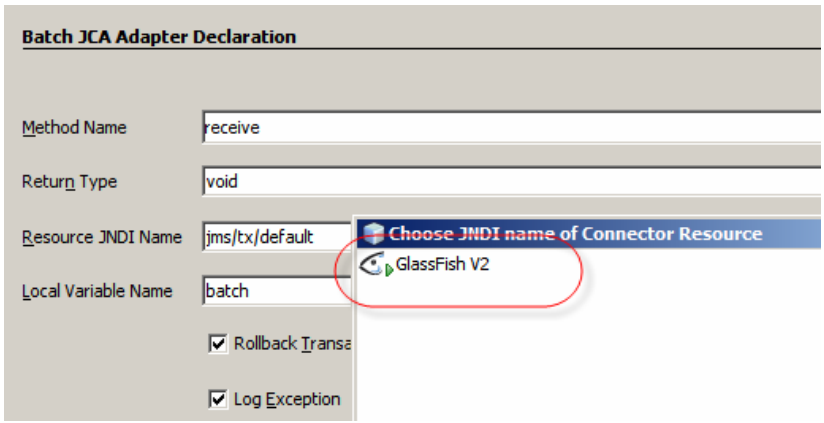


Figure 5-12 Waiting for the JNDI resource list to be assembled

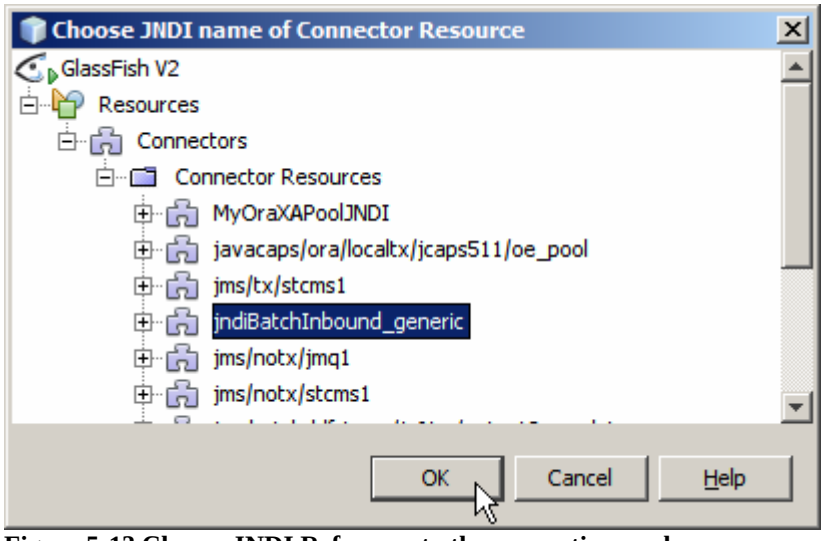


Figure 5-13 Choose JNDI Reference to the connection pool

Slabs of boilerplate code are added to the Java source. Figure 5-14 shows some of that code.

Figure 5-14 Boilerplate code added by the Batch Local File wizard

Take note of the onBatchFileList method – this is the ‘onMessage’ method that is invoked when a message is delivered to the MDB. The BatchAppconnMessage parameter named “data” provides access to the Batch Inbound fields, much as the “input” message in a Batch Inbound-triggered JCD would. Figure 5-15 illustrates this.

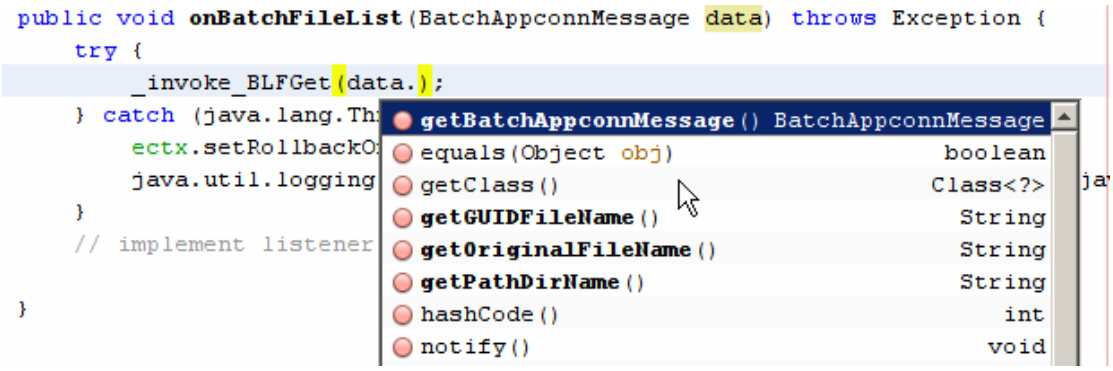


Figure 5-15 Batch Inbound message fields

Within the onBatchFileList method notice the _invoke_BLFGet(data) mthod invocation. Recall that BLFGet is the method name we provided to the wizard when adding the Batch Local File to the code. This method, see Figure 5-14, gives us a "connected" batchOTD and invokes the BLFGet method with the Batch Inbound message, data, and the batchOTD as parameters. Our "creative code" will go into that method.

To make it easier to relate what we are doing to a JCD in 5.1 let's rename the parameters to the BLFGet to "input" and "G_BatchLocalFile", where "input" is the name that Java CAPS 5.x gives and "G_BatchLocalFile" is the name I use as a convention.

The method signature now looks like that shown in Figure 5-16.

```
    private void BLFGet
            (BatchAppconnMessage input
            ,com.stc.eways.batchext.BatchLocal G_BatchLocalFile)
                throws java.lang.Exception {

    }
```

Figure 5-16 BLFGet method signature after parameter name changes

The action will be in the BLFGet method, which receives the Batch Inbound "input" message and the Batch Local File "G_BatchLocalFile".

As we would have done in the 5.1 JCD we can use the batch Inbound message fields to get access to the original file name, the GUID file name and the directory path of the file that Batch Inbound found. Figure 5-17 shows the code involved.

```
    private void BLFGet
            (BatchAppconnMessage input
            ,com.stc.eways.batchext.BatchLocal G_BatchLocalFile)
                throws java.lang.Exception {

        String sGUIDFileName = input.getGUIDFileName();
        String sOrigFileName = input.getOriginalFileName();
        String sPathDirName = input.getPathDirName();


    }
```

Figure 5-17 Getting data from the Batch Inbound message

Configuring the Batch Local File so that it can read the correct file, from the correct directory, and rename it after it is read, is accomplished the same way it would have been done in a 5.x JCD. Figure 5-18 illustrates this. We are using the GUID file name as the name of the file to read and the directory name prvided by the Batch Inbound as the directory where the file resides. The original file name, with the literal ".~in" appended is the used as the name to which to rename the input file once it is read. Finally, once the configuration is populated, we execute the get() method of the Batch Local File OTD to bet the payload.

```
String sGUIDFileName = input.getGUIDFileName();
String sOrigFileName = input.getOriginalFileName();
String sPathDirName = input.getPathDirName();

G_BatchLocalFile.getConfiguration().setTargetDirectoryName(sPathDirName);
G_BatchLocalFile.getConfiguration().setTargetDirectoryNameIsPattern(false);
G_BatchLocalFile.getConfiguration().setTargetFileName(sGUIDFileName);
G_BatchLocalFile.getConfiguration().setTargetFileNameIsPattern(false);

G_BatchLocalFile.getConfiguration().setPostDirectoryName(sPathDirName);
G_BatchLocalFile.getConfiguration().setPostDirectoryNameIsPattern(false);
G_BatchLocalFile.getConfiguration().setPostFileName(sOrigFileName + ".~in");
G_BatchLocalFile.getConfiguration().setPostFileNameIsPattern(false);
G_BatchLocalFile.getConfiguration().setPostTransferCommand("Rename");

G_BatchLocalFile.getClient().get();
```

Figure 5-18 Dynamically configuring the Batch Local File and getting the payload

As stated at the beginning, the intention was to get the content of the file and and send it, as a string, to a BPLE 2.0 Business Process.

Recall, from Section 4, “Create EJB Module and OneWay WSDL”, the WSDL we created. It can be seen in Source Packages -> <default package> as wsdlPayloadToBPEL.wsdl. Figure 5-19 shows this.

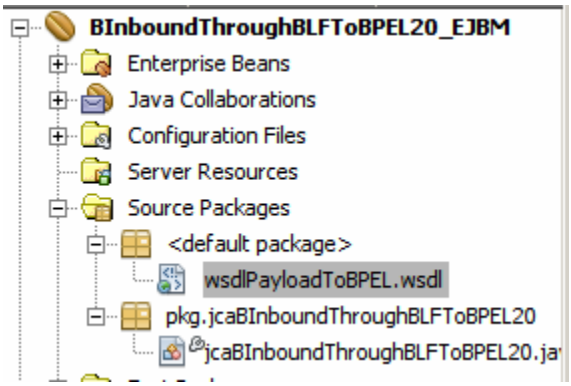


Figure 5-19 wsdlPayloadToBPEL.wsdl, created in Section 4

Using NetBeans facilities let’s create a Web Service Client reference. Figures 5-20 through 5-22 illustrate key steps in the process.

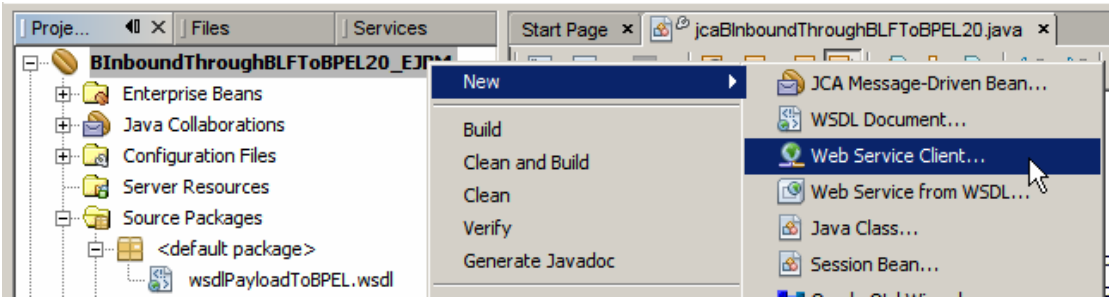


Figure 5-20 Trigger Web Service Client wizard

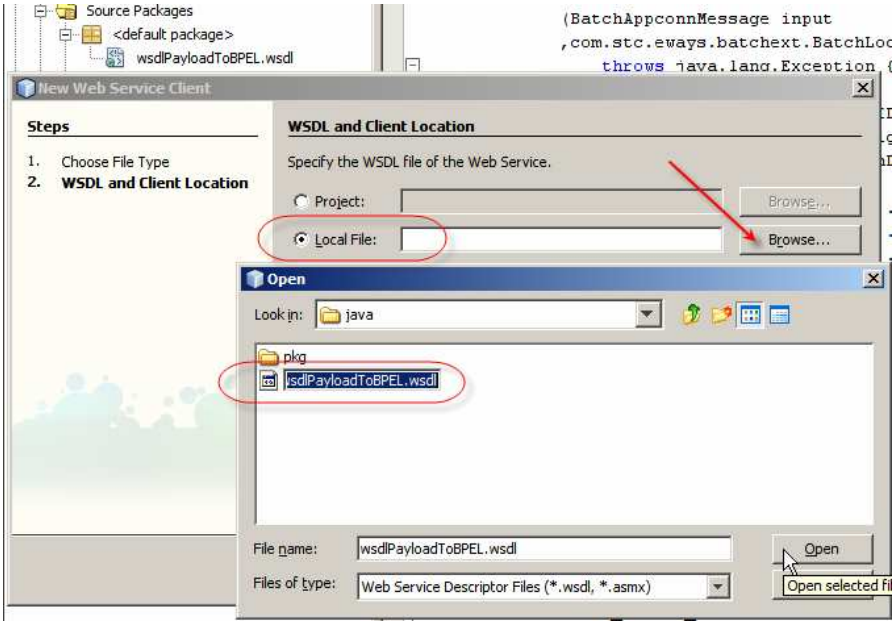


Figure 5-21 Find the 'local file' that contains the WSDL and select it

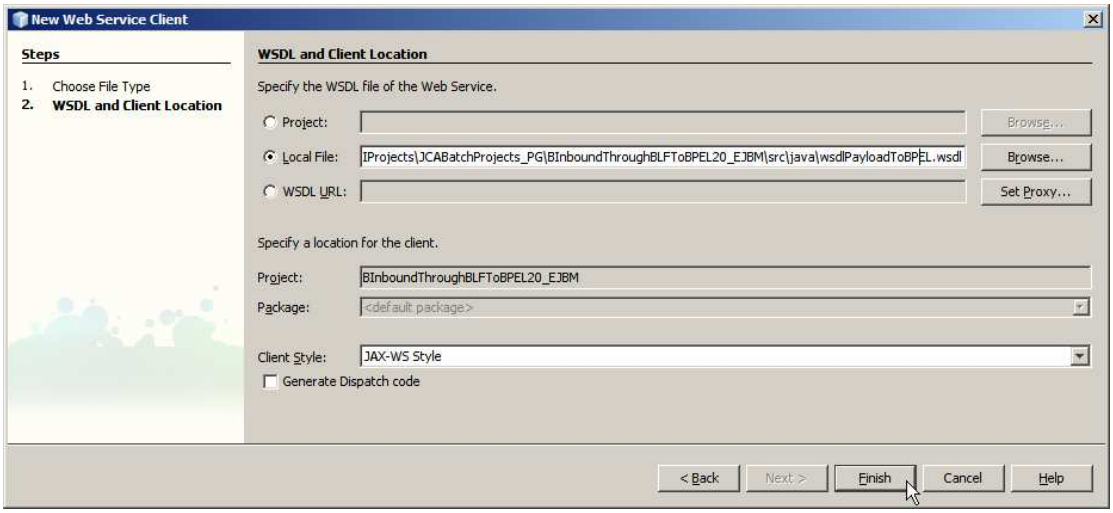


Figure 5-22 Finish the wizard

If you have difficulties locating the WSDL file right click on the WSDL file name in the Source Packages -> <default package>, choose Proeprties and see where the file is hiding.

After due activity, which is logged in the Output window, NetBeans adds a Web Service Reference node tree to our project. Figure 5-23 illustrates this.

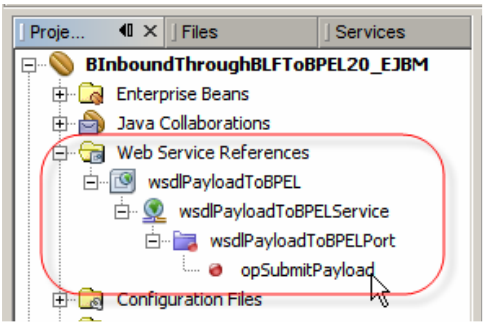


Figure 5-23 Web Service Reference created by NetBeans, based on the WSDL

To invoke the web service, or as will be the case in this project, to send a message to the BPEL 2.0 process, let's drag the web service operation, opSubmitPayload, from the Web Service Reference tree into the Java source window following the line that reads "G_BatchLocalFile.getClient().get();". Figure 5-24 illustrates this.

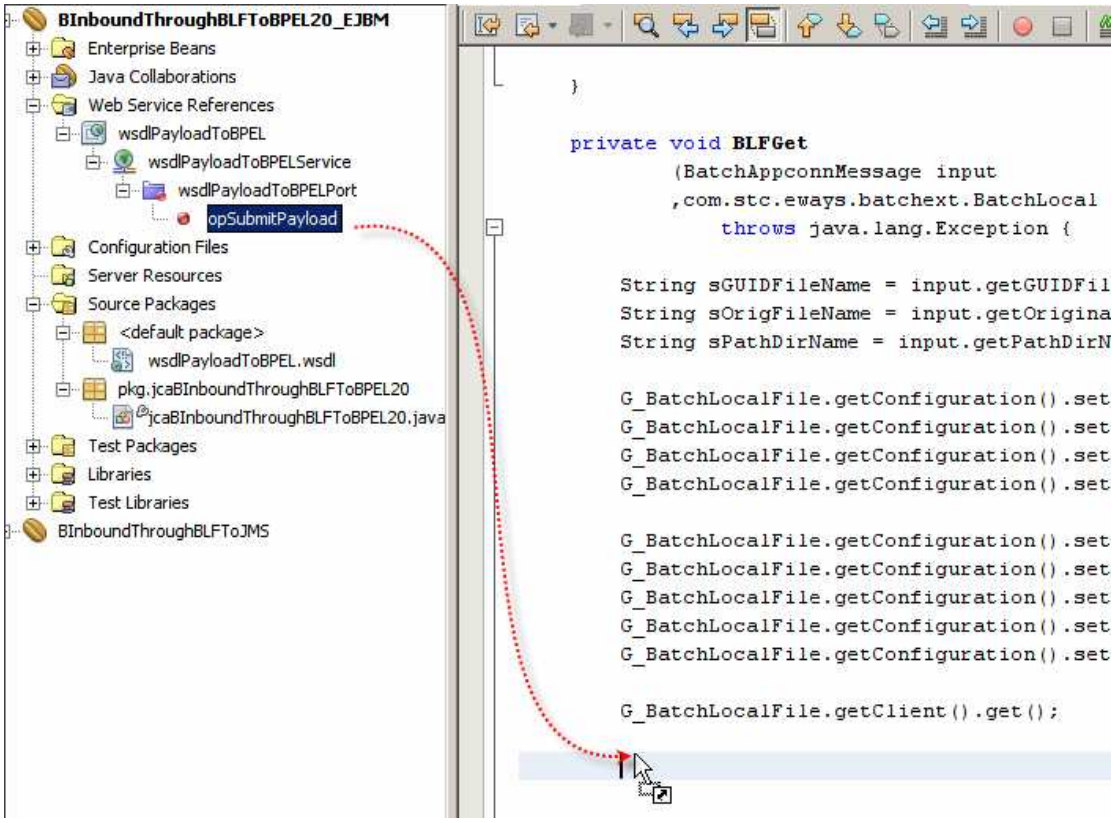
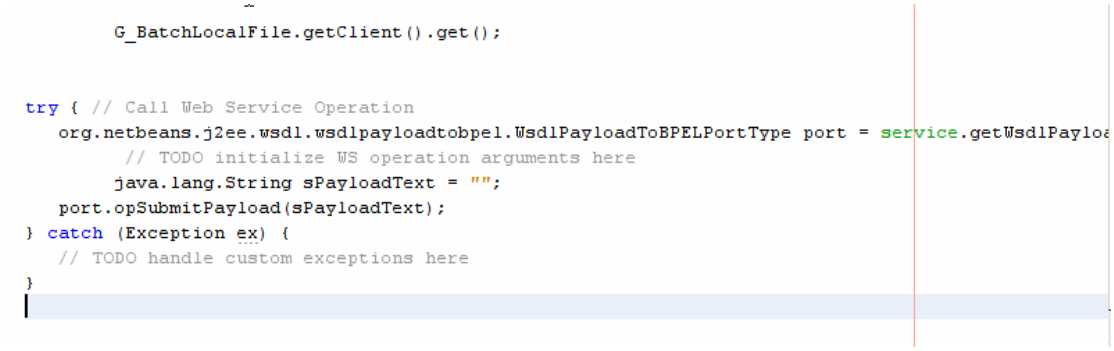


Figure 5-24 Adding Web Service invocation to the Java source

NetBeans adds a slab of boilerplate code which needs formatting and modification, see Figure 5-25.



```
        G_BatchLocalFile.getClient().get();


try { // Call Web Service Operation
   org.netbeans.j2ee.wsdl.wsdlpayloadtobpel.WsdlPayloadToBPELPortType port = service.getWsdlPayloa
         // TODO initialize WS operation arguments here
        java.lang.String sPayloadText = "";
   port.opSubmitPayload(sPayloadText);
} catch (Exception ex) {
   // TODO handle custom exceptions here
}
```

Figure 5-25 Boilerplate code for web service invocation

All we need to do to pass the payload to the BPEL process, which we will develop next, is to modify the statement that reads port.opSubmitPayload(…), as shown in Figure 5.26.

```
try { // Call Web Service Operation
    org.netbeans.j2ee.wsdl.wsdlpayloadtobpel.WsdlPayloadToBPELPortType port = ser
    port.opSubmitPayload(G_BatchLocalFile.getClient().getPayload().toString());
} catch (Exception ex) {
    // TODO handle custom exceptions here
}
```

Figure 5-26 Sending file payload, as string, to the BPEL process.

I used the expression “to the BPEL process”. This is a reflection of what this Note is supposed to achieve rather then a reflection of what the code is doing. The service implementation which is being invoked could be any service implementation, whether JBI-based or not, whether Java or .NET, as long as it implemented the WSDL-mandated interface.

To make sure all is well, let’s build this project, but not deploy it.

This is all that is required for a JCA MDB to be triggered by a Batch Inbound Adapter, use the Batch Local File Adapter to read the content of a file and to send it to a service implementation that complies with the WSDL we used.

6 Create BPEL 2.0 Process

Let’s create the BPEL 2.0 process which will receive the file payload, as string, from the JCA solution we built in the previous section. The process will be a simple one. It will receive the string and write it to a file using the File Binding Component (FILE BC).

We start with a BPLE Module project, BInboundThroughBLFToBPEL20_BPELM , as illustrated in Figures 6-1 and 6-2.

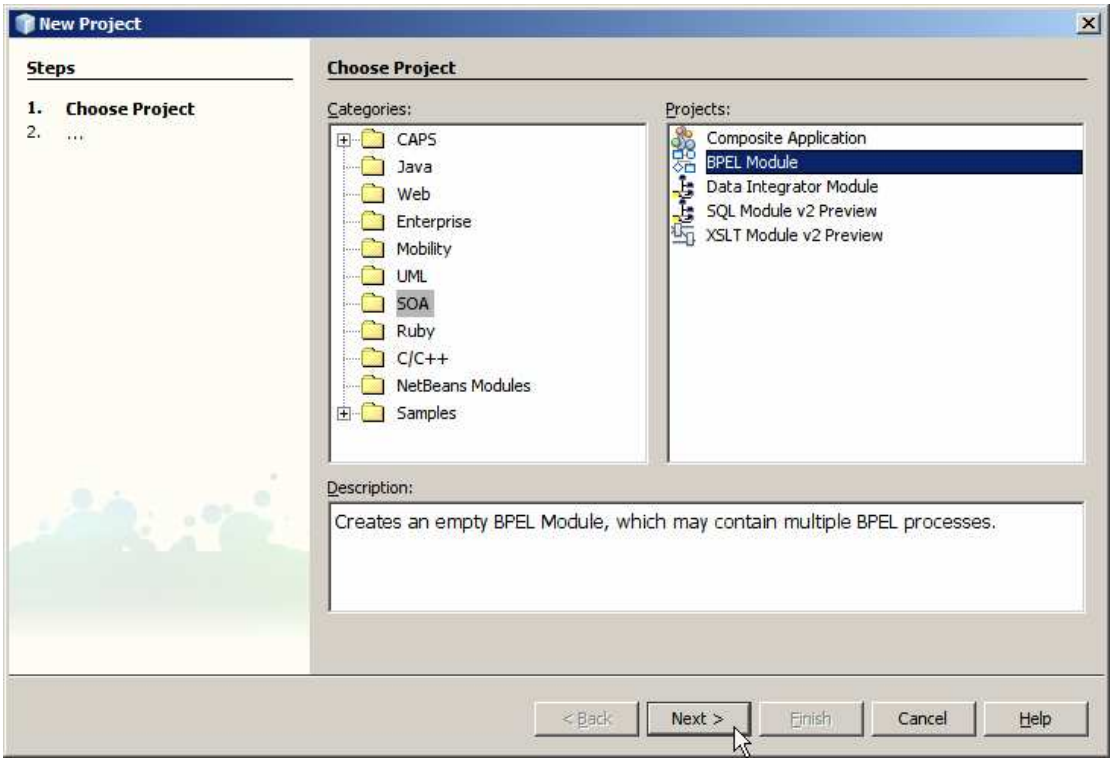


Figure 6-1 Creating a BPEL Module project

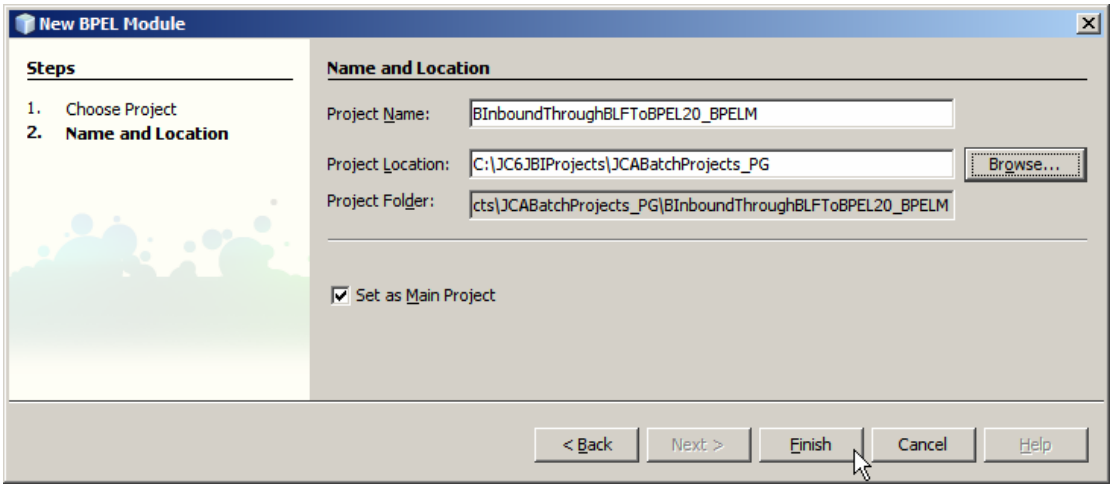


Figure 6-2 Naming the module and choosing project location

To write to a file from a BPEL 2.0 process, as with anything to do with interaction between a BPEL 2.0 process and the external world, requires a WSDL. This WSDL will represent both the message structures exchanged between the BPEL process and the File BC, and the configuration of the File BC.

Let's create a WSDL Document, wsdlOutFile, as shown in Figures 6-3 through 6-6. Make it a One-Way Operation with a one part message of type xsd:string, using the FILE binding.

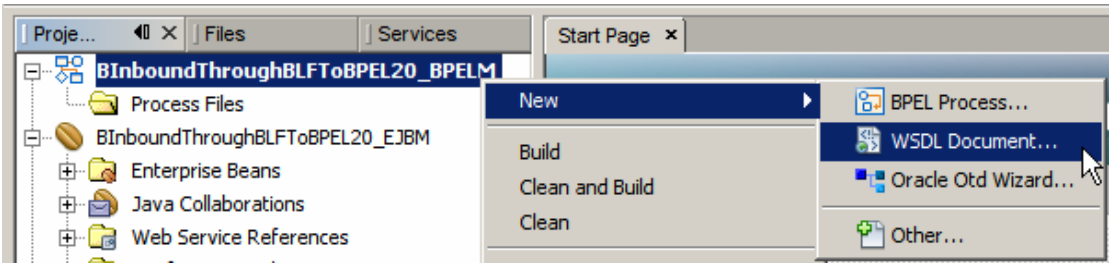


Figure 6-3 Start the New WSDL Document wizard

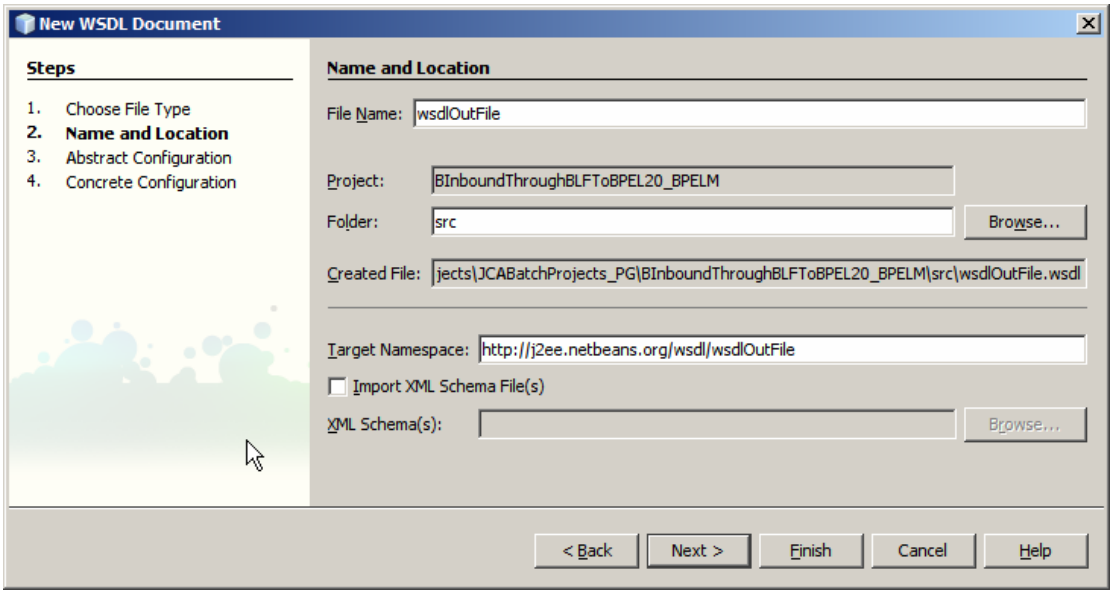


Figure 6-4 Name the WSDL document

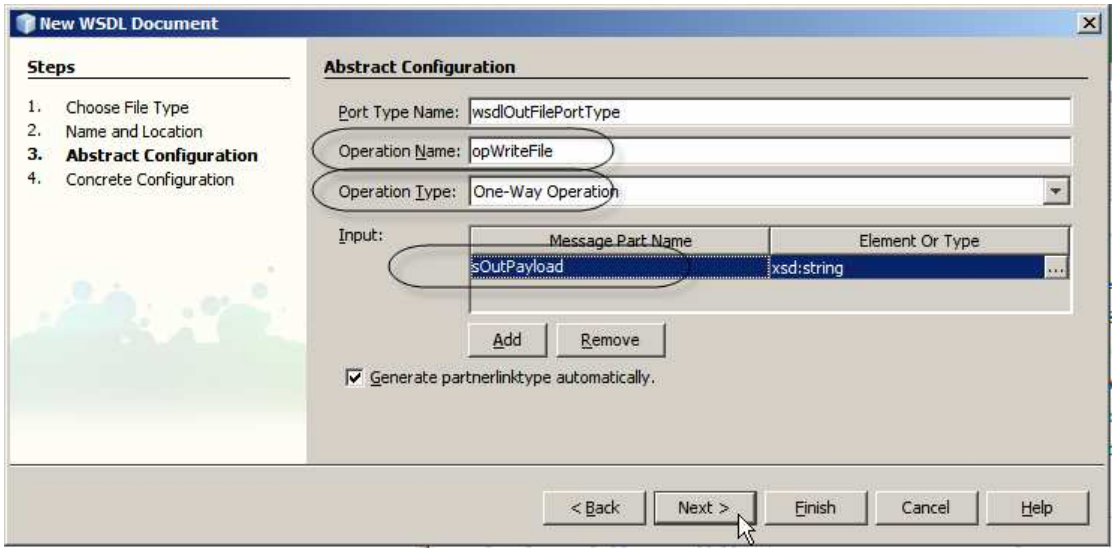


Figure 6-5 One-Way Operation with a single part message of type xsd:string

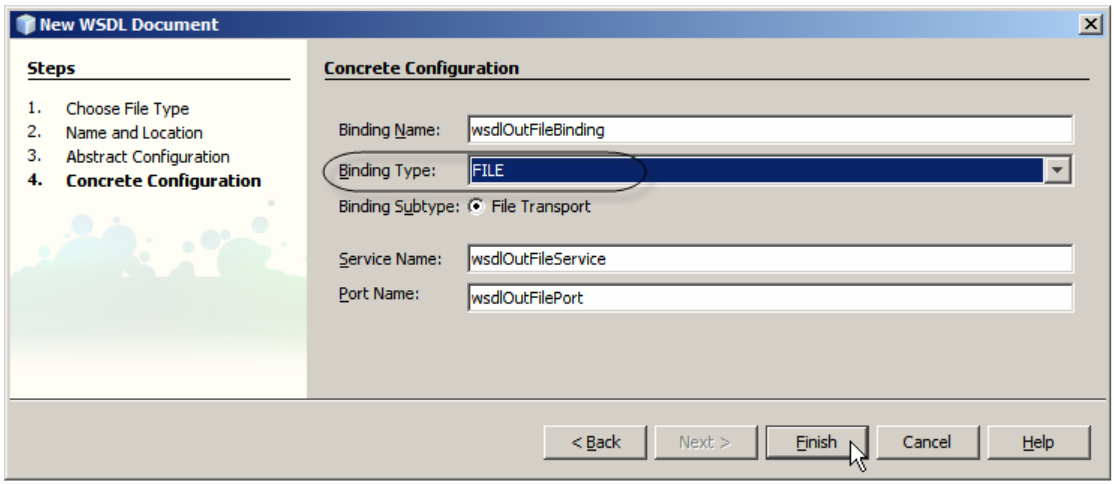


Figure 6-6 Binding Type: FILE

Let's configure the directory to which to write the file and the name of the file to write. Figured 6-7 and 6-8 call out the key parts of the WSDL. Let's name the directory path "C:\Temp\JC6JCA" and the file "output_%d.out", a name pattern.

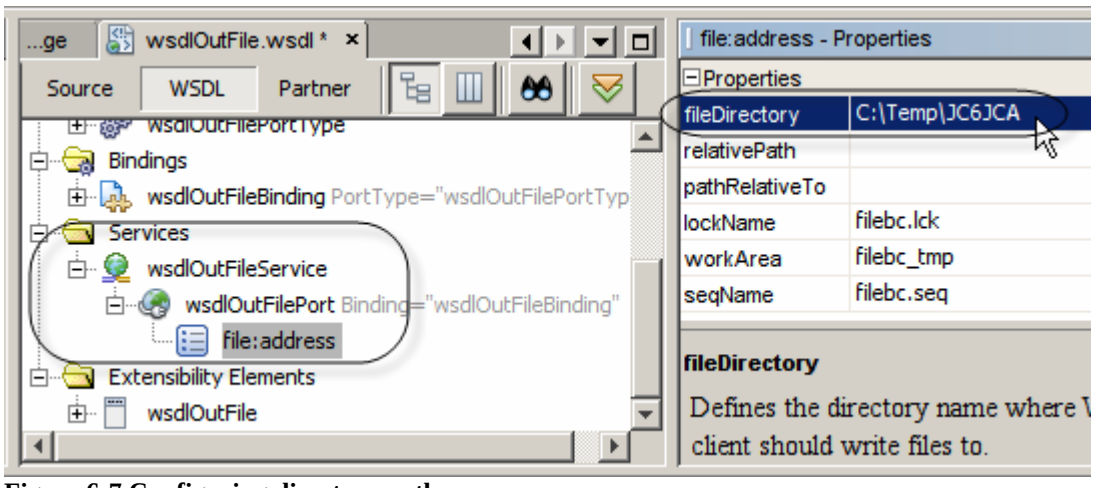


Figure 6-7 Configuring directory path

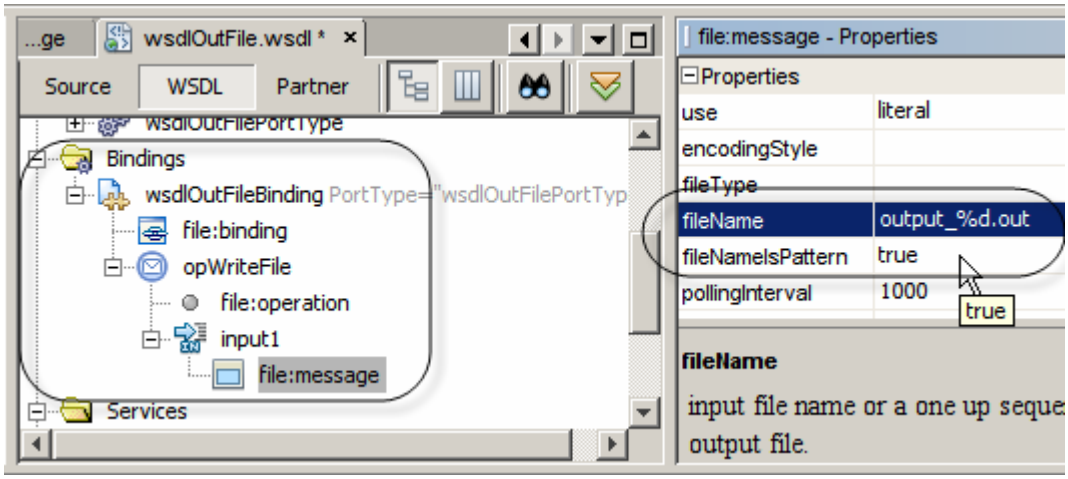


Figure 6-8 Naming the file and indicating the name is a pattern

This provides the configuration of the outbound File BC.

With both WSDLs available, the WSDL we created to define the interface between the JCA and the BPEL process, and the WSDL we created just now for the File BC, we are ready to create a BPEL process.

Let's create a BPEL Process, bpelProcessPayload, as shown in Figures 6-9 and 6-10.

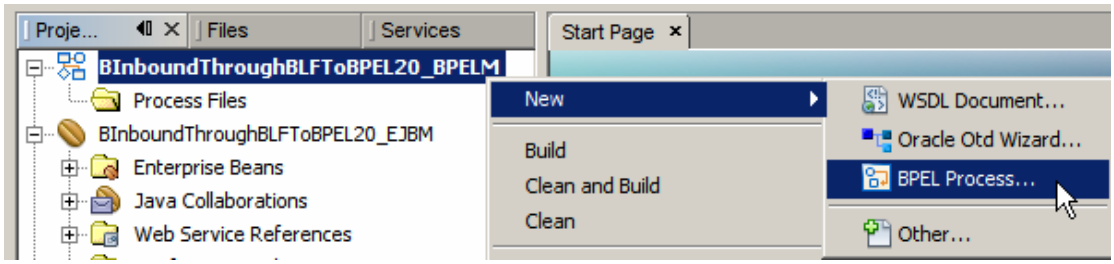


Figure 6-9 Start the new BPEL Process wizard

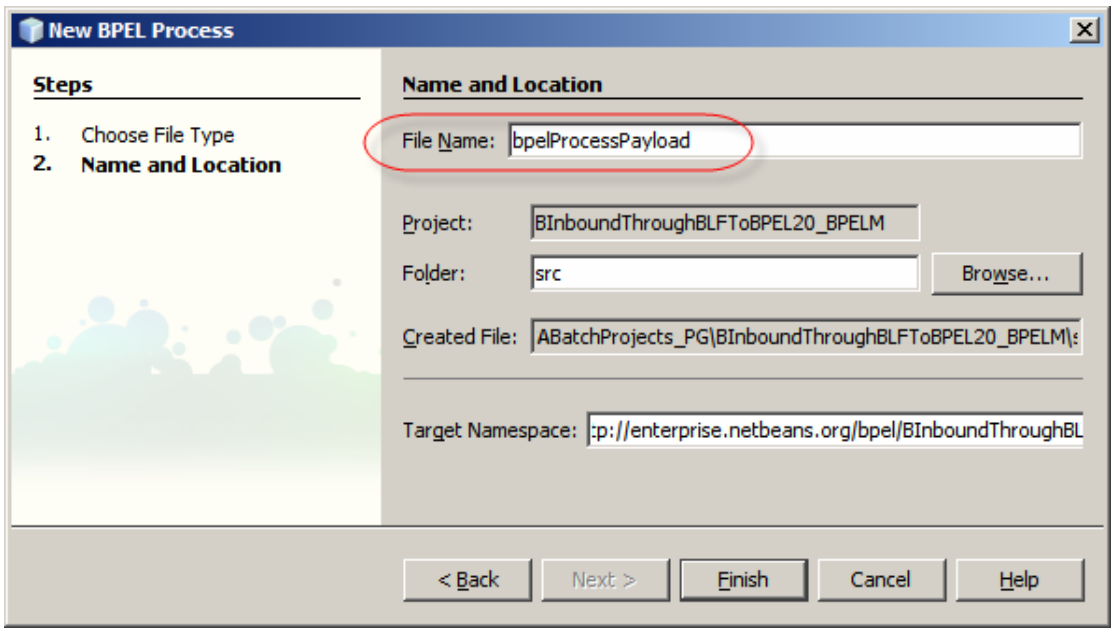


Figure 6-10 Naming the BPEL process

From the Source Packages -> <default package> of the BInboundThroughBLFToBPEL20_EJBM EJB Module project, let's drag the wsdlPayloadToBPEL WSDL and drop it onto the 'target ball' of the BPEL process as shown in Figure 6-11.

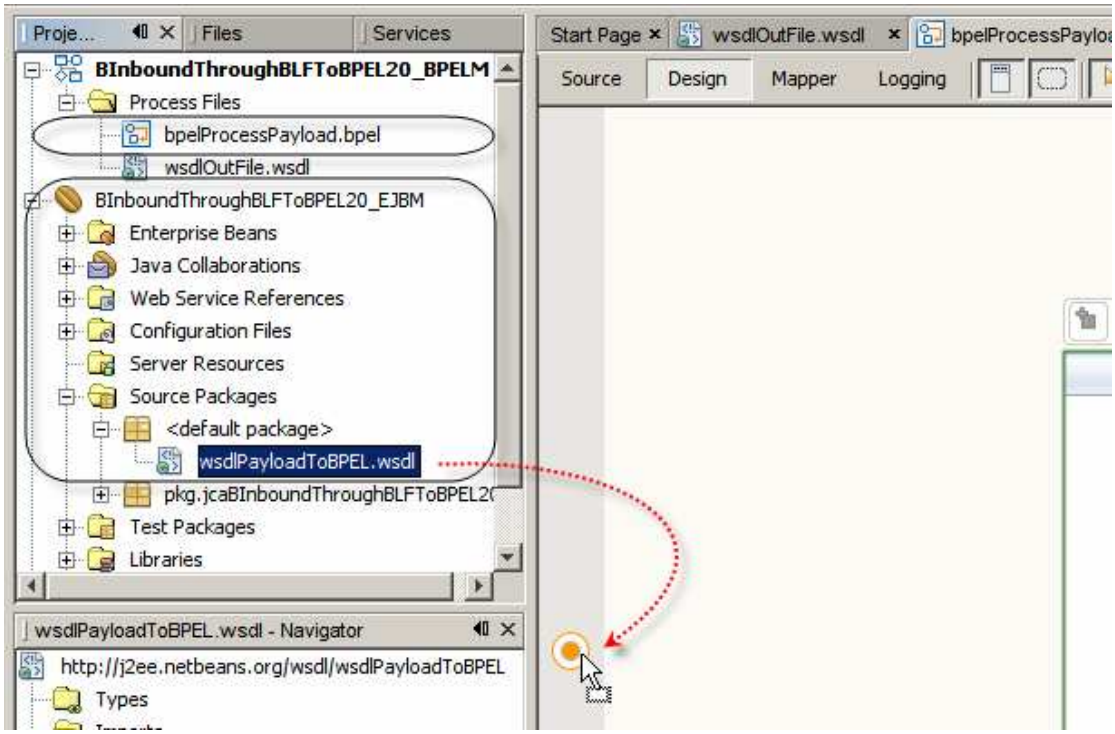


Figure 6-11 Add web service interface to the BPEL process

While is is not necessary, I like to rename the default partner links. Figure 6-12 illustrates this. The partner link name will be plkInJCA.

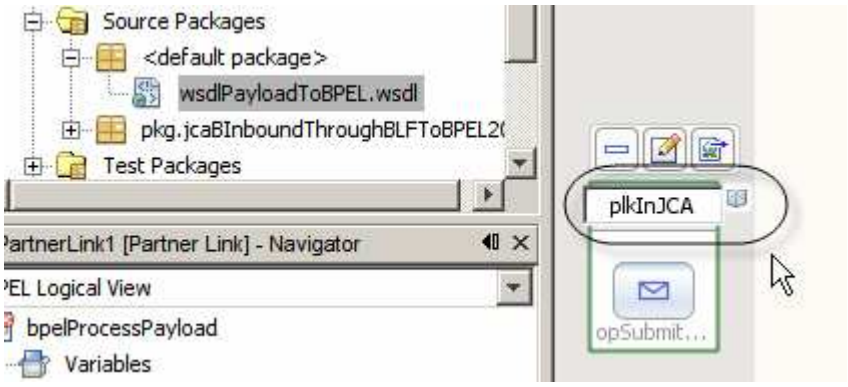


Figure 6-12 Ranamed Partner Link

Let's now add the outbound File BC WSDL to the process canvas as shown in Figure 6-13 and rename the partner link to plkOutFile.

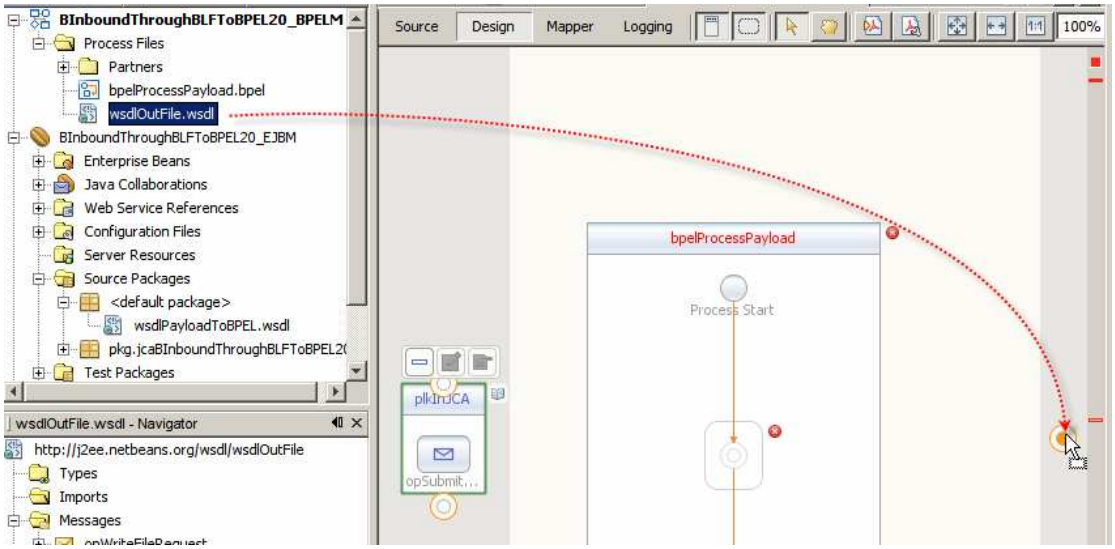


Figure 6-13 Adding File BC WSDL to the process editor canvas

To receive a message and write it to a file we need a Receive activity, an Assign activity which maps the payload from the output of the JCA to the input of the File BC, and an Invoke activity, which will cause the write to take place. Let's drag these activities from the palette to the canvas. Figure 6-14 illustrates the addition of the Invoke activity. The other activities were added the same way.

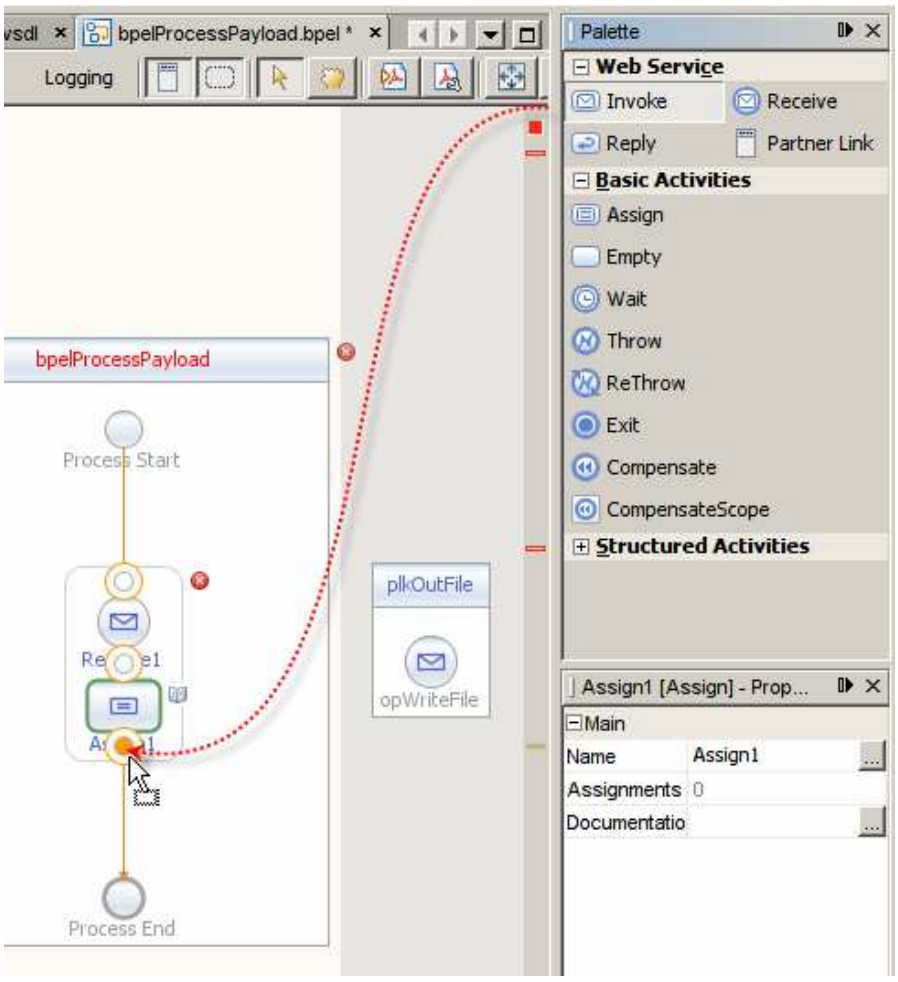


Figure 6-14 Adding the Invoke activity to the BPEL Editor canvas

Select the Receive activity and click the Edit button, as shown in Figure 6-15. This will allow us to choose the partner and create a business process variable to contain the message we will receive.

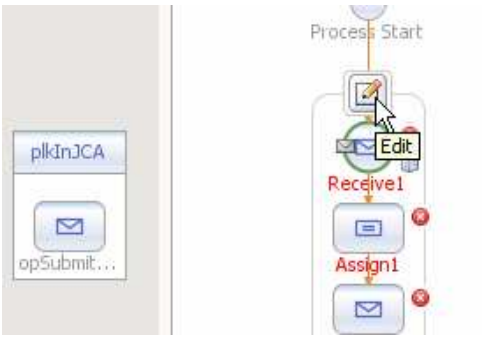


Figure 6-15 Edit properties of the Receive activity

Choose Partner Link (this is where having renamed partner links comes handy) as shown in Figure 6-16 and click “Create …” button alongside the Iput Variable data entry box and name the new variable vInPayload as shown in Figure 6-17.

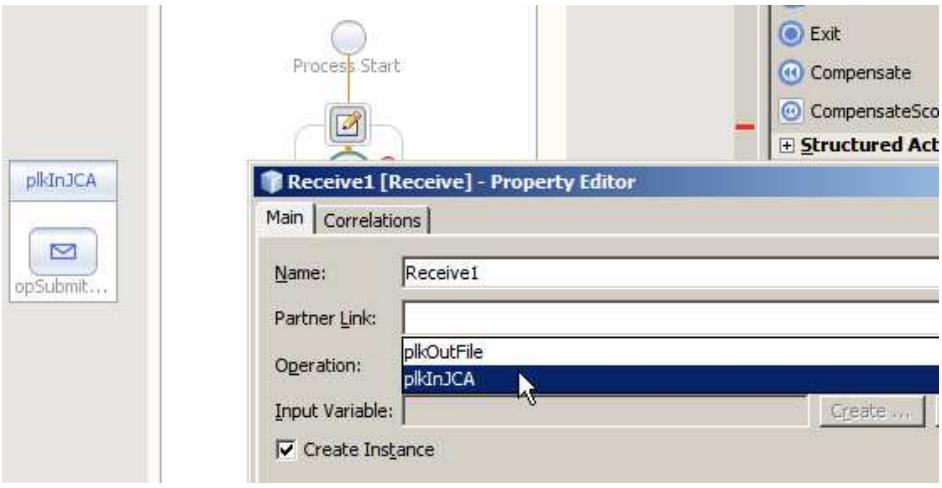


Figure 6-16 Choose plkInJCA Partner Link for the receive side

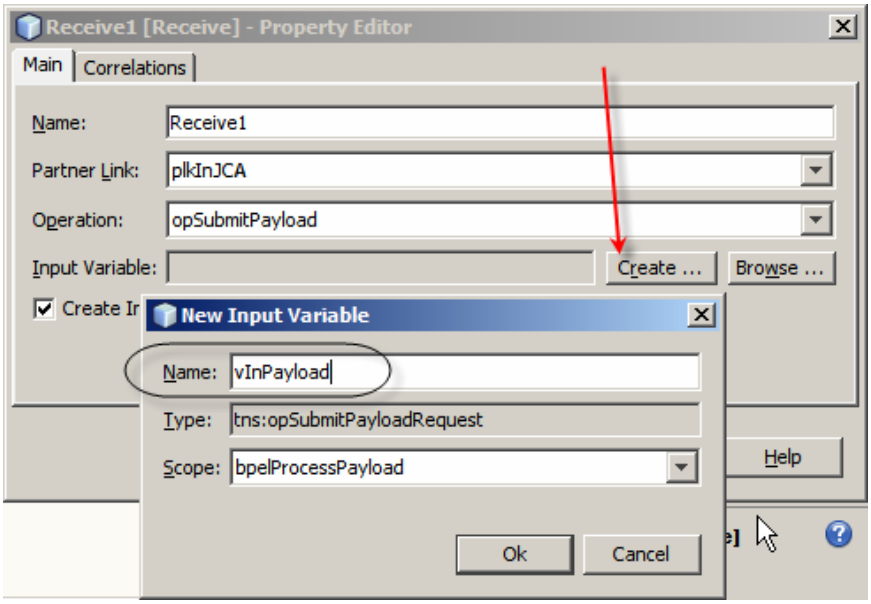


Figure 6-17 Create and name Input Variable

Repeat the process for the Invoke activity, choosing the plkOutFile partner link and naming the variable vOutPayload as shown in Figure 6-18.

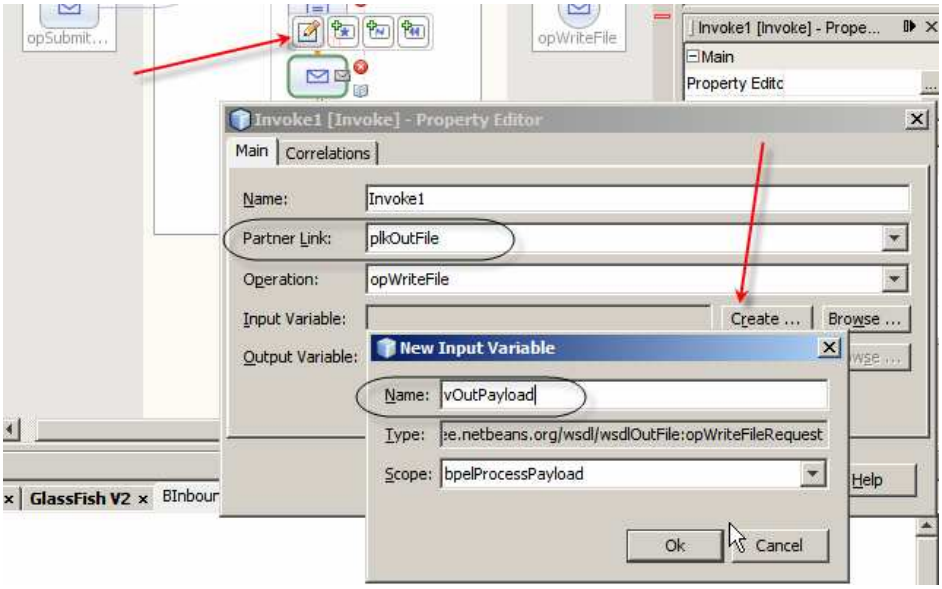


Figure 6-18 Configuring the File BC partner link

Finally, let's map the output of the JCA to the input of the File BC. Select the Assign activity and click the Mapper Tab as shown in Figure 6-19.

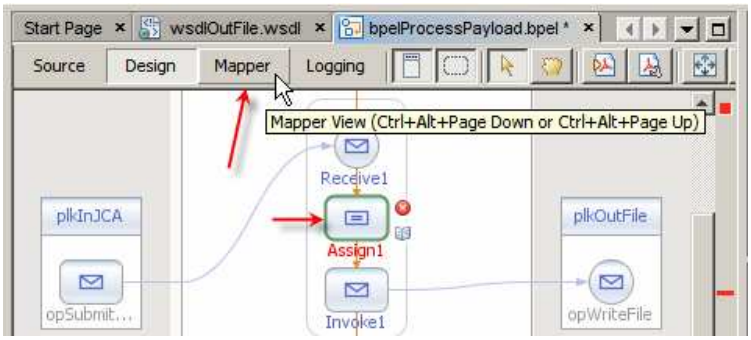


Figure 6-19 Switching to Mapper to complete the Assign activity

Select the vOutPayload variable's sOutPayload node in the Variables tree at the right hand side, select the vInPayload variable's sInPayload node in the Variables tree at the left hand side and drag a line fro it to the sOutPayload at the left hand side as illustrated in Figure 6-20.

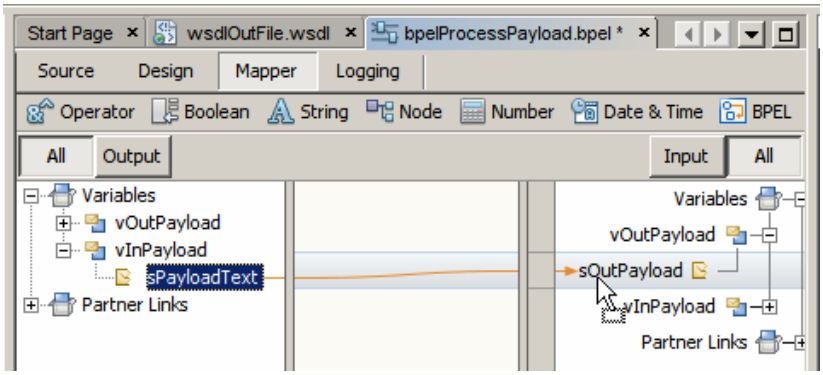


Figure 6-20 Map output to input

The process is now complete. Switch back to Design mode and see the completed process. It ought to look like that shown in Figure 6-21.

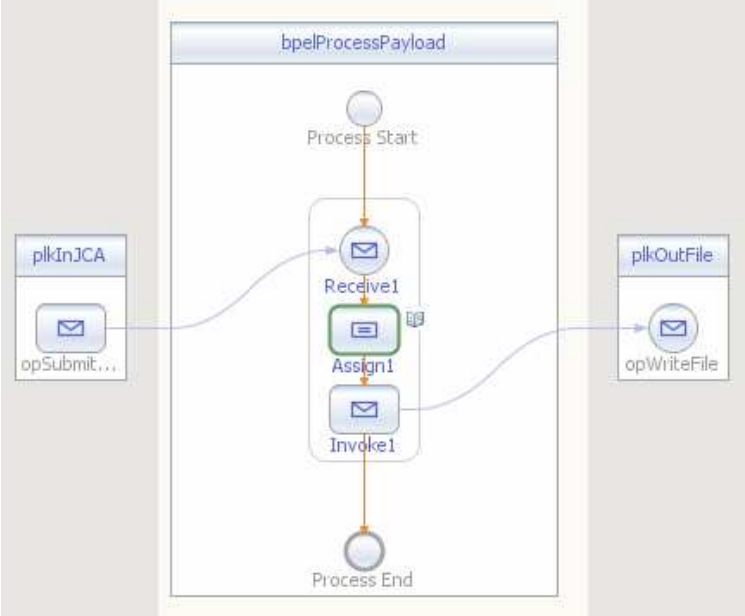


Figure 6-21 Complete JCA to File Business Process.

This process does not do anything useful. We developed this process to illustrate how a JCA-based service can trigger a JBI-based BPEL process.

To make sure the process builds, let's build it.

7 Create a Composite Application

This two modules, the EJB Module that contains the JCA project and the BPEL Module that contains the BPEL process, will be joined as a JBI Composite Application. Le't create a SOA Composite Application Module, BInboundThroughBLFToBPEL20_CA, as shown in Figures 7-1 and 7-2.

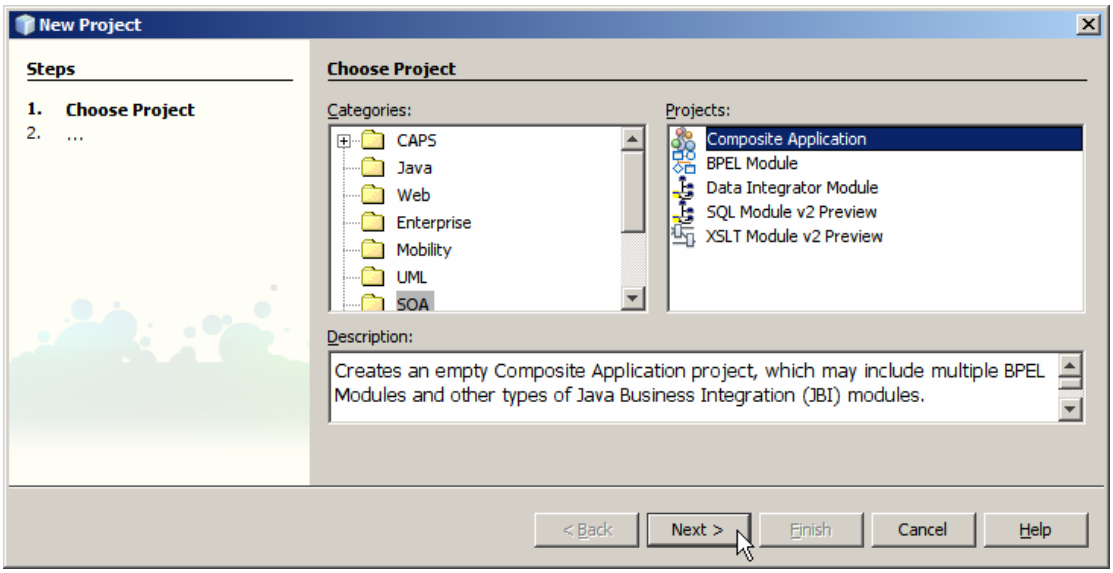


Figure 7-1 Choose SOA -> Composite Application project

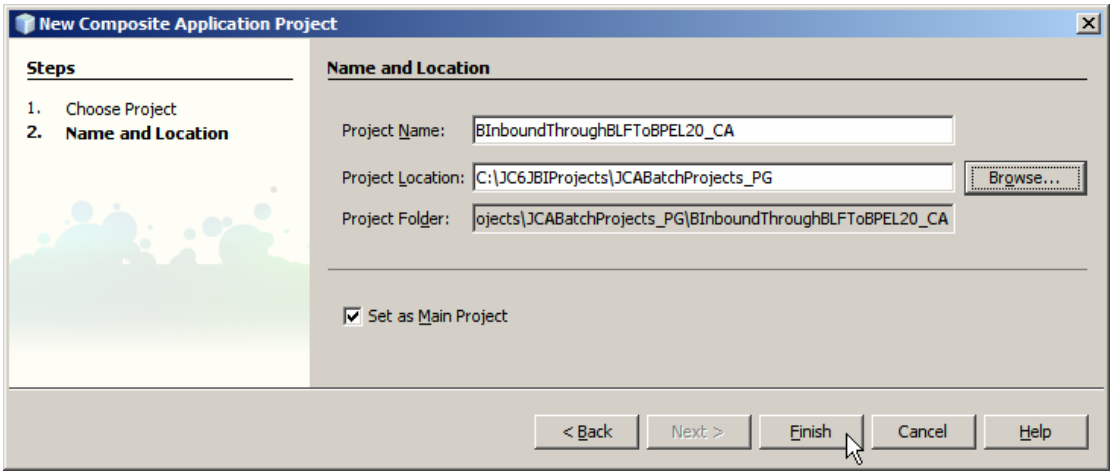


Figure 7-2 Choose project name and location

Drag the BInboundThroughBLFToBPEL20_EJBM Module onto the JBI Modules swim line of the Service Assembly Editor canvas as shown in Figure 7-2.

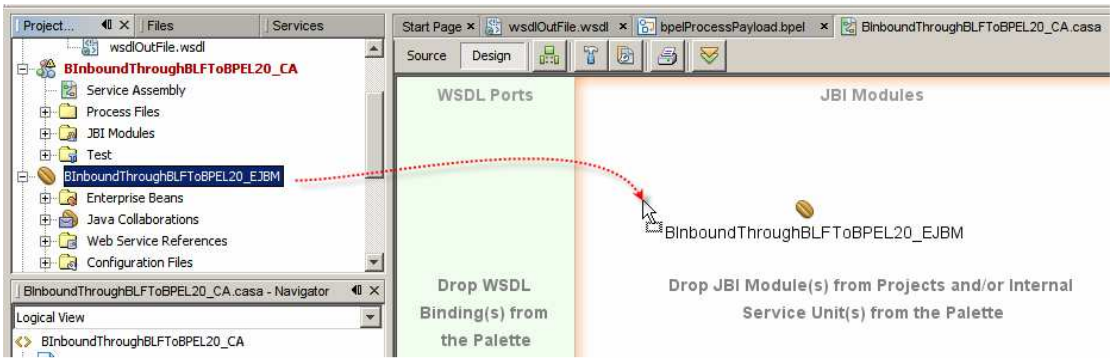


Figure 7-3 Add BInboundThroughBLFToBPEL20_EJBM module to the Service Assembly

Drag the BInboundThroughBLFToBPEL20_BPELM BPEL Module onto the JBI Modules swim line of the Service Assembly Editor canvas as shown in Figure 7-3.

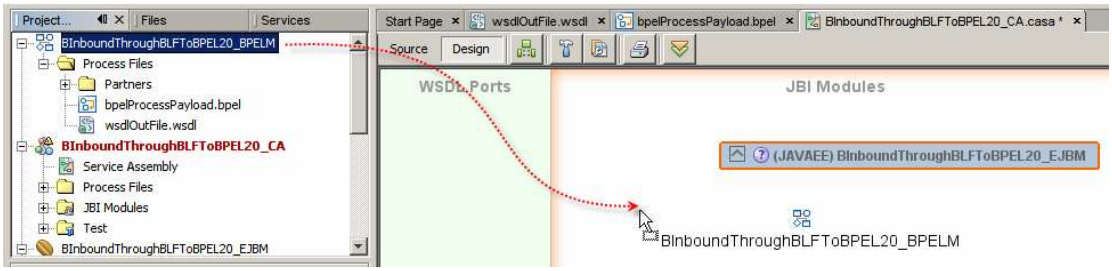


Figure 7-4 Add BInboundThroughBLFToBPEL20_BPELM Module to the Service Assembly

Right-click the name of the Composite Application module, BInboundThroughBLFToBPEL20_CA, and choose Build. Once the build process completes yoy should see a Service Assembly drawn as shown in Figure 7-5.

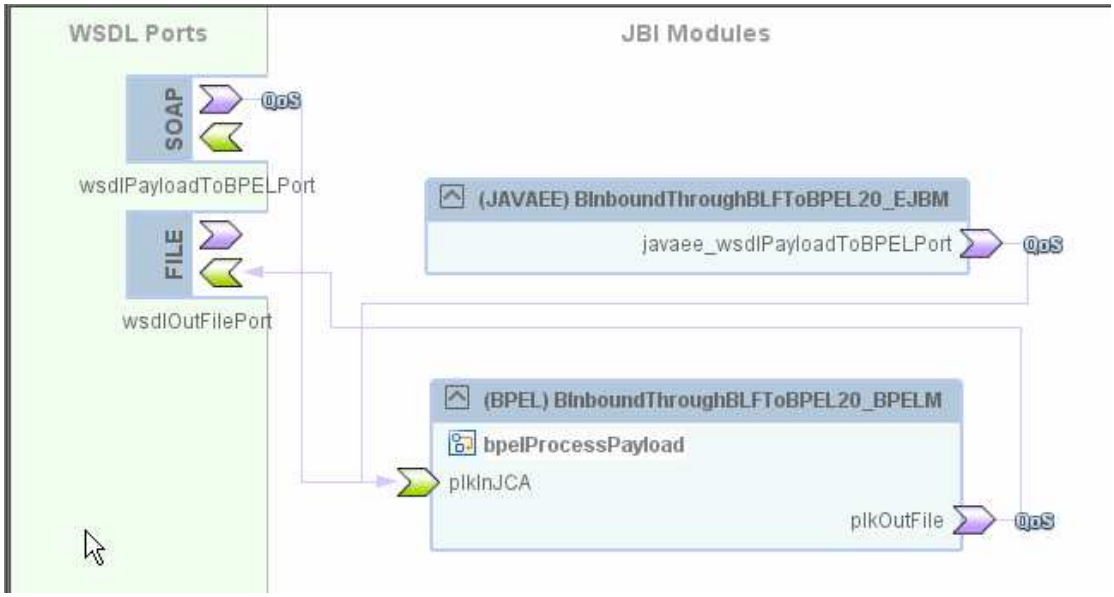


Figure 7-5 Built Service Assembly.

The build process worked out connectivity between modules and added appropriate Binding Components. Since a complete WSDL was used on the inbound side of the BPEL process, the build process added a SOAP BC and connected it to the BPEL module. Since the JAC Module uses the same WSDL it too was connected to the BPEL Module. If we leave the Service Assembly as it is the BPEL Process will be able to be triggered both by the JCA Module, as we intended, and by a Web Service invocation. Since we don't wish the BPEL module to be exposed as a Web Service we simply select and delete the SOAP BC, the build the Composite Applciation module again. The Service Assembly after removal of the SOAP BC is shown in Figure 7-6.

Figure 7-6 Finial Service Assembly

Notice that there is no indication of how the EJB Module is triggered. Only the inspection of the module can tell as that.

Notice, too, that the communication between the EJB Module and the BPEL Module will go over the Normalized Message Router. It will not be SOAP over HTTP even though the WSDL we created at the beginning of this Note might suggest otherwise.

By adding both modules to the same JBI-based Composite Application we are eliminating this inefficiency.

Let's now deploy the Composite Application.

8 Exercising the solution

When the project is deployed the server.log, when appropriate logging level is enabled for the appropriate logging category, will show text similar to what is shown in Figure 8-1. Not the regular expression pattern, we specified for the Batch Inbound.

```
[#|2008-07-18T13:57:58.250+1000|FINE|sun-appserver9.1|STC.eWay.batch.com.stc.connector.batchadapter.system.BatchIn
boundWork|_ThreadID=38;_ThreadName=p: thread-pool-1; w: 258;ClassName=com.stc.connector.logging.JDKLogger;MethodNa
me=debug;_RequestID=33670be5-7e80-4e30-b91c-98c16fe800e6;|Checking for files...|#]

[#|2008-07-18T13:57:58.265+1000|FINE|sun-appserver9.1|STC.eWay.batch.com.stc.connector.batchadapter.util.BatchInbo
undFileUtil$FileNameFilter|_ThreadID=38;_ThreadName=p: thread-pool-1; w: 258;ClassName=com.stc.connector.logging.J
DKLogger;MethodName=debug;_RequestID=33670be5-7e80-4e30-b91c-98c16fe800e6;|<init>: Created a RegEx with the string
 ^trigger_[0-9][0-9]*.txt$|#]

[#|2008-07-18T13:57:58.265+1000|FINE|sun-appserver9.1|STC.eWay.batch.com.stc.connector.batchadapter.util.BatchInbo
undFileUtil$FileNameFilter|_ThreadID=38;_ThreadName=p: thread-pool-1; w: 258;ClassName=com.stc.connector.logging.J
DKLogger;MethodName=debug;_RequestID=33670be5-7e80-4e30-b91c-98c16fe800e6;|.accept: It is not a match batch_inboun
d_00.txt.~in|#]

[#|2008-07-18T13:57:58.265+1000|FINE|sun-appserver9.1|STC.eWay.batch.com.stc.connector.batchadapter.util.BatchInbo
undFileUtil$FileNameFilter|_ThreadID=38;_ThreadName=p: thread-pool-1; w: 258;ClassName=com.stc.connector.logging.J
DKLogger;MethodName=debug;_RequestID=33670be5-7e80-4e30-b91c-98c16fe800e6;|.accept: It is not a match output2_14.d
at|#]
```

Figure 8-1 server.log trace from batch Inbound poll

Let's create a file, with the name of trigger_0.txt.~in, with some content. Once the file is ready, let's change its name to trigger_0.txt. Within at most 15 seconds, which is the polling interval we configured for the Batch Inbound, the file will be picked up, renamed by prefixing the GUID to it, read, renamed to trigger_0.txt.~in and a file with the name like output_0.out will be produced.

9 Summary

This document walked the reader, step-by-step, through the process of creating and exercising a Java CAPS 6 mixed JCA- and JBI-based solution. All of this work was done using JCA Adapters, EJBs in the JavaEE Service Engine, BPEL 2.0 Service Unit in the BPEL Service Engine and a File Binding Component, all hosted in the JBI and JEE Containers within the GlassFish Application Server.