

AVP - 2932

IBM WebSphere Process Server V7 Problem Determination

Exercise - Troubleshooting an SCA application with runtime errors

At the end of the exercise, you should be able to:

- Load a log file onto the Server Logs viewer in WebSphere Integration Developer in order to analyze error messages
- Deploy SCA applications onto WebSphere Process Server
- Monitor the health of deployed applications through the Health Monitor Wizard in Business Space
- Utilize cross-component trace to follow the call sequences between SCA applications
- Query failed events through the Failed Event Manager and resubmit the events after the problem is resolved

Overview:

In the first part of the exercise, you are going to import the given SOA solution. After examining the end-to-end solution, sample data gets sent through a JSP application. The test will fail, and your task is to troubleshoot this runtime error. In this section the cross-component trace feature in the WebSphere Integration Developer is explored. The exercise demonstrates how to trace back to the point of failure in the assembly diagram.

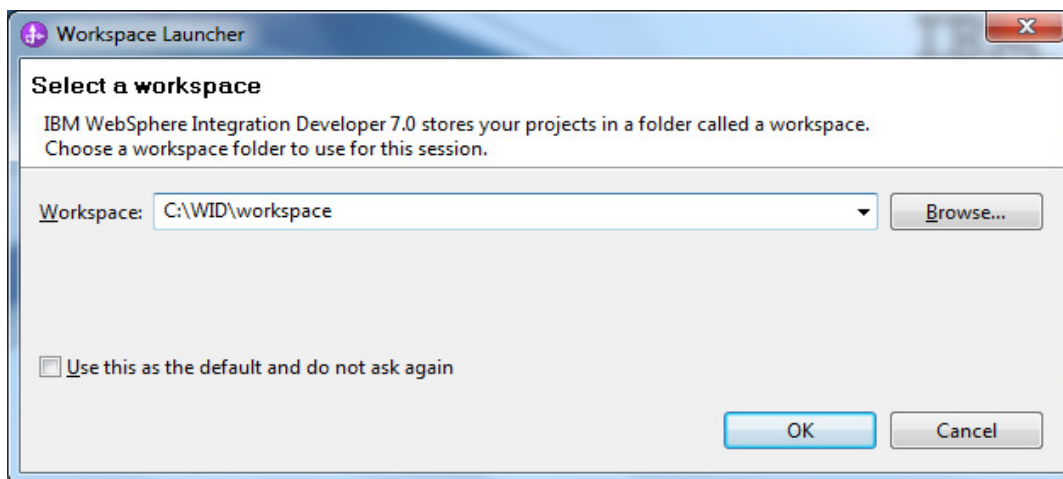
In the second part of the exercise, you are going to explore some of the runtime applications: Failed Event Manager, service integration bus browser, Business Process Choreographer Explorer, as well as Business Space. After the problem is resolved, the failed event must be resubmitted using the Failed Event Manager.

Exercise instructions

Part 1: Set up the environment

- ___ 1. Open a new workspace: C:\WID\workspace
 - ___ a. Start WebSphere Integration Developer if it is not already started.
 - ___ b. Select the workspace to be C:\WID\workspace and click OK.

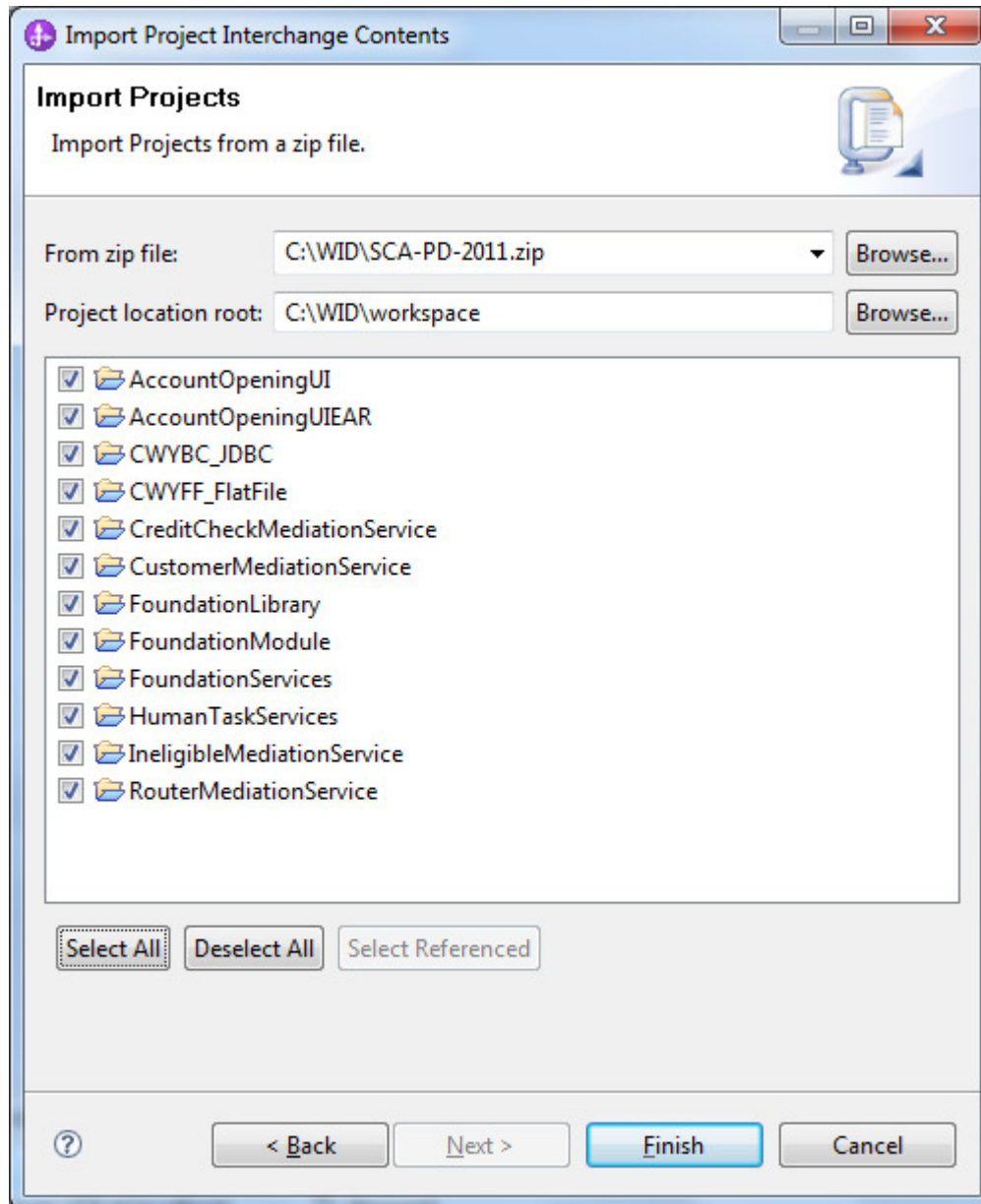
Note: If WebSphere Integration Developer is already opened, select File > Switch Workspace..., enter C:\WID\workspace in the Workspace field, and then click OK.



- ___ c. Close the Getting Started pane.
- ___ 2. Import C:\WID\SCA-PD-2011.zip into your workspace.
 - ___ a. Select File > Import...
 - ___ b. Select Project Interchange under the **Other** folder as the import source type. Click Next.
 - ___ c. Click Browse... button for From zip file field.
 - ___ d. Navigate to C:\WID\SCA-PD-2011.zip.

___ e. Click Open.

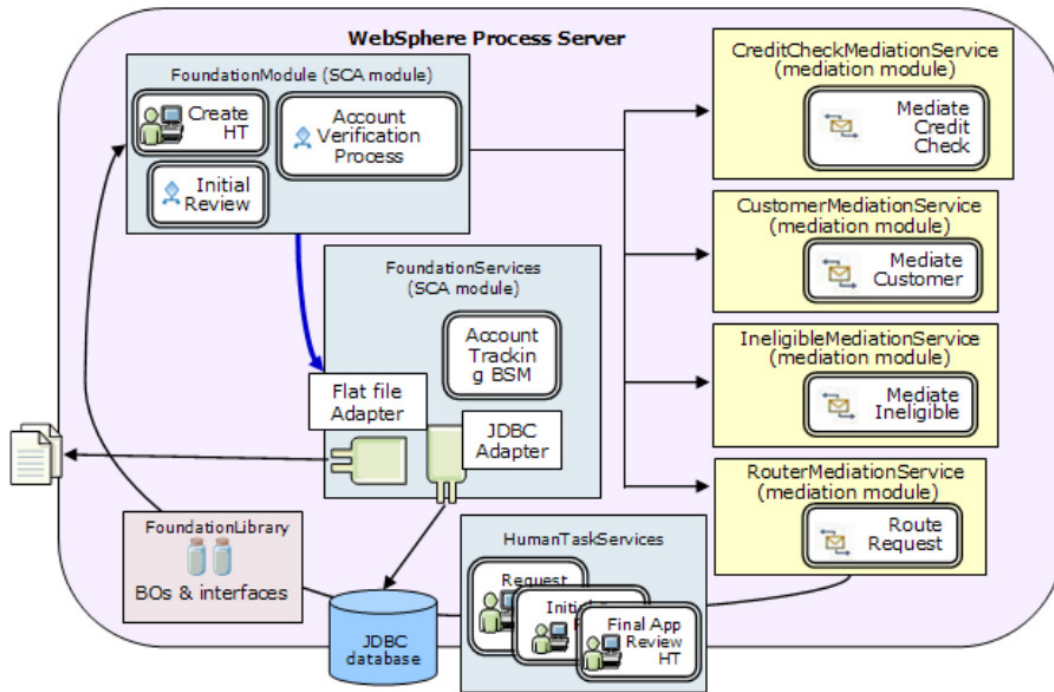
___ f. Click Select All.



___ g. Click Finish.

End-to-end scenario overview

This end-to-end scenario demonstrates a fictional retail company's SOA implementation to centralize a customer account creation process.



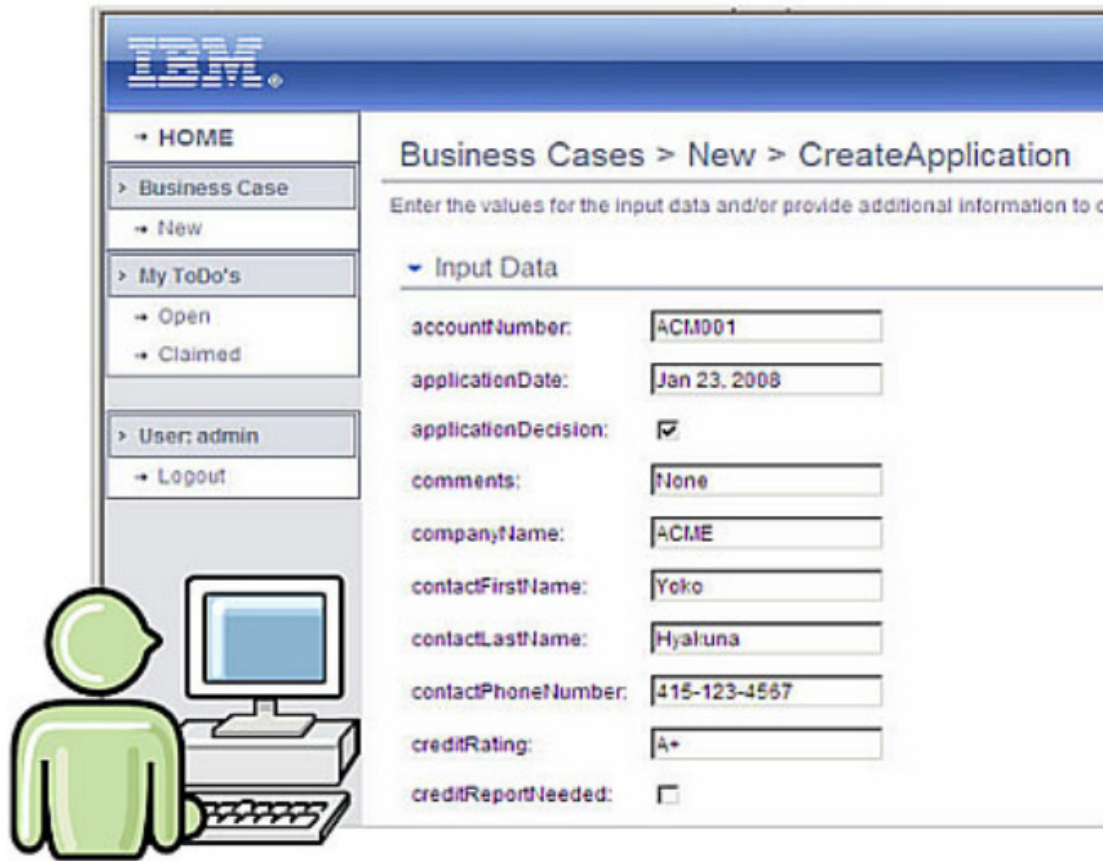
There are three mediation modules that mediate the incoming events and execute some data manipulation logics.

There is a service module named FoundationModule, which contains the main business logic, AccountVerification BPEL, to process the account creation logic.

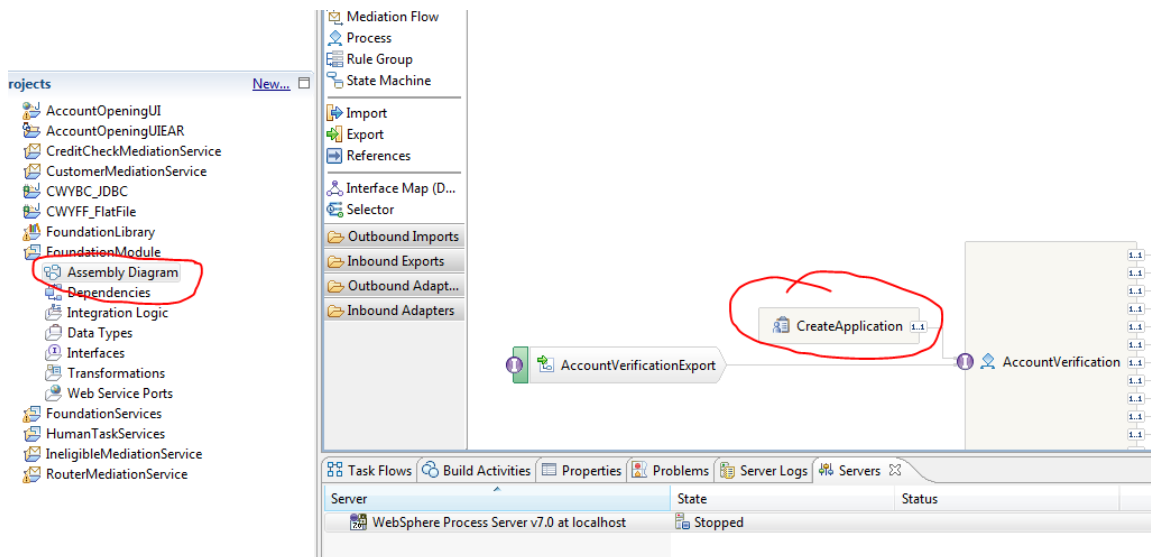
The FoundationServices module contains services to help the FoundationModule to complete customer account verification tasks.

Since human interaction becomes necessary to approve customer requests, the HumanTaskServices module contains the human task components.

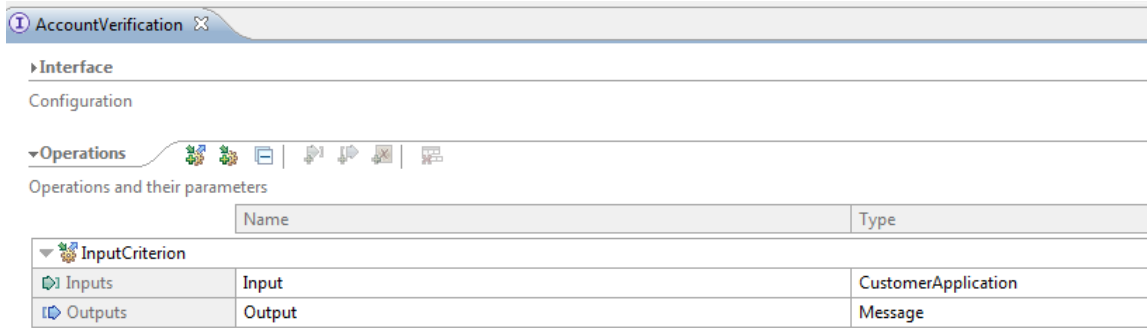
First, a sales person enters customer information through a Web application, which triggers an instance of the AccountVerification business process to be created.



This is defined in the FoundationModule.

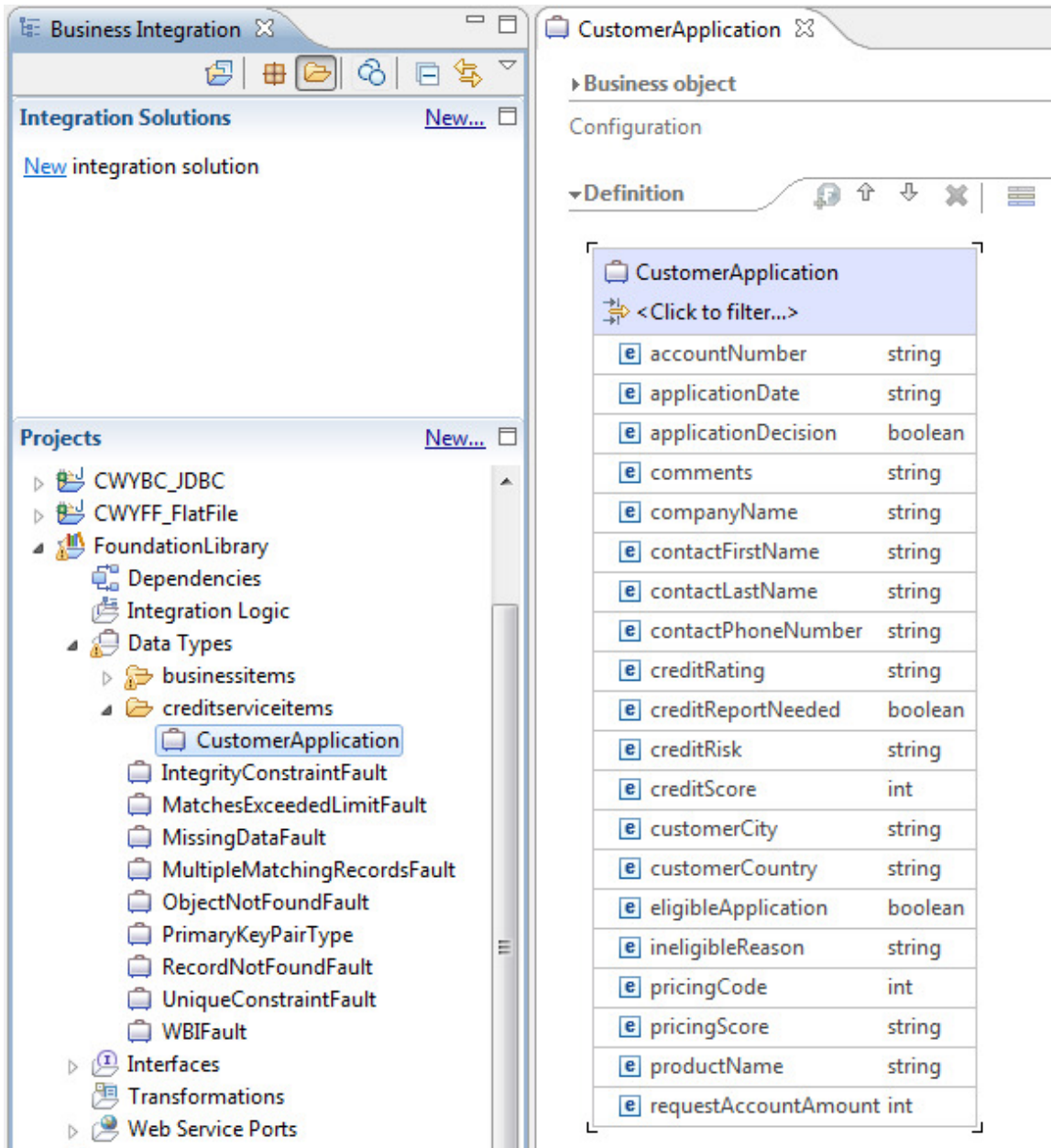


Open the AccountVerification interface by right-clicking and selecting Open. You will see that CustomerApplication is the data type that gets passed to the process.



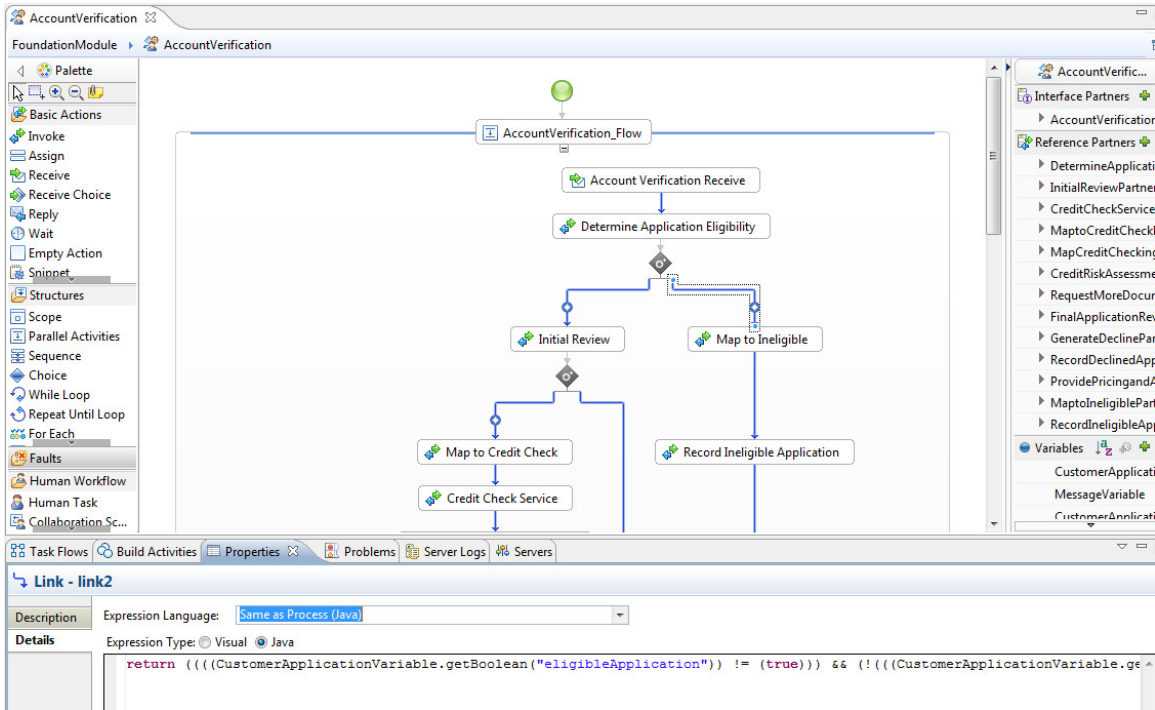
In the Business Integration view, expand FoundationLibrary > Data Type > creditserviceitems to locate the CustomerApplication business object. Double-click CustomerApplication to view its definition.

At run time, customer's application eligibility gets evaluated.



The flow of AccountVerification business process is that the data gets routed to the Map to Ineligible invoke activity if the eligibleApplication parameter value is set to false. Otherwise, the business event flows to the Initial Review activity.

Double-Click on AccountVerification in the FoundationModule Assembly Diagram to take a closer look.



If the eligibleApplication parameter value is set to false, the request for an account creation gets rejected. The customer information gets archived in a local directory, as well as in a database.

Note: In the workshop we will not be exercising the “Map to Ineligible” path of the business process.

Part 2: Test the imported SOA solution

In this section, you are going to test the given SOA solution.

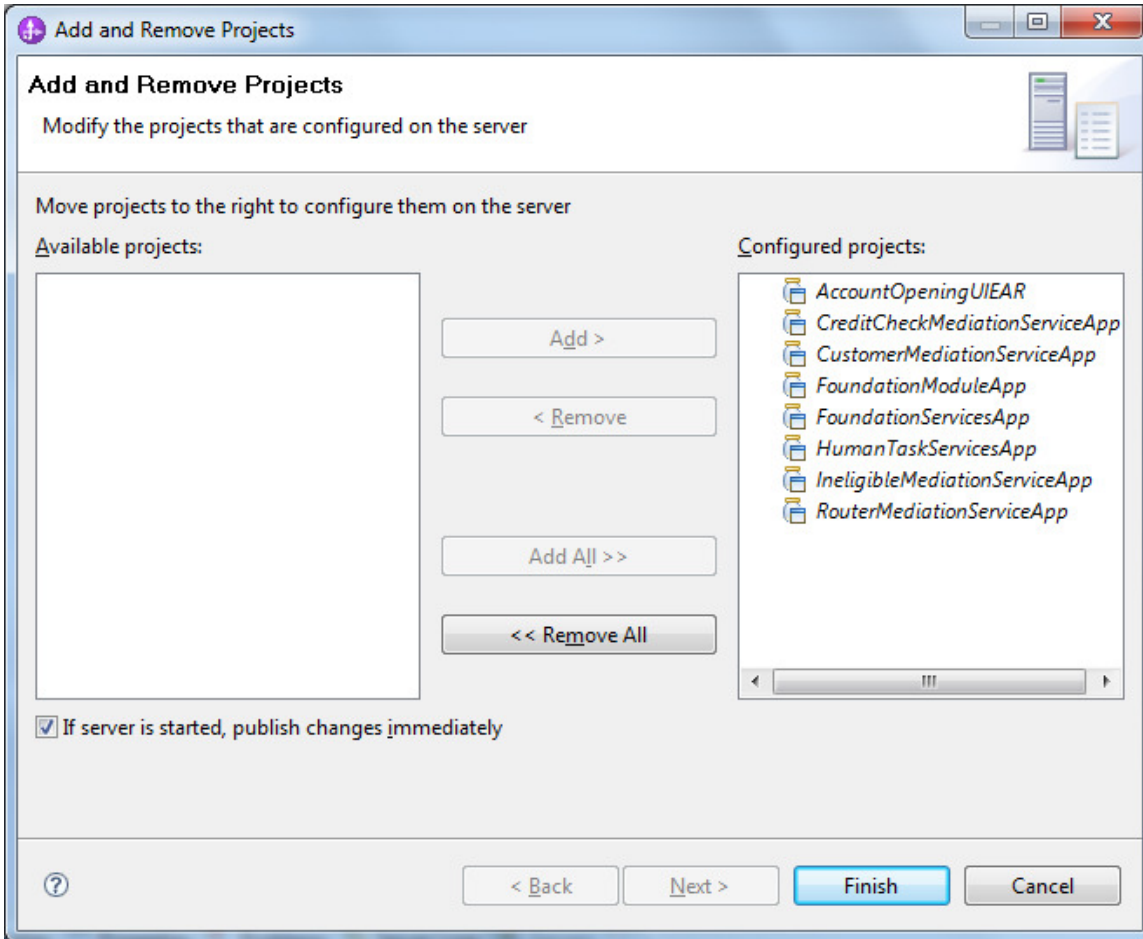
- ___ 1. If the server is not running already, start the server.
 - ___ a. In the Servers tab, right-click WebSphere Process Server v7 at localhost and select Start from the context menu.
 - ___ b. Wait until the server status changes to Started. This may take up to 5 minutes. (Note: You may see an error in the logs related to the TAI, this is expected and we are not using this functionality)

___ 2. Deploy the imported applications.

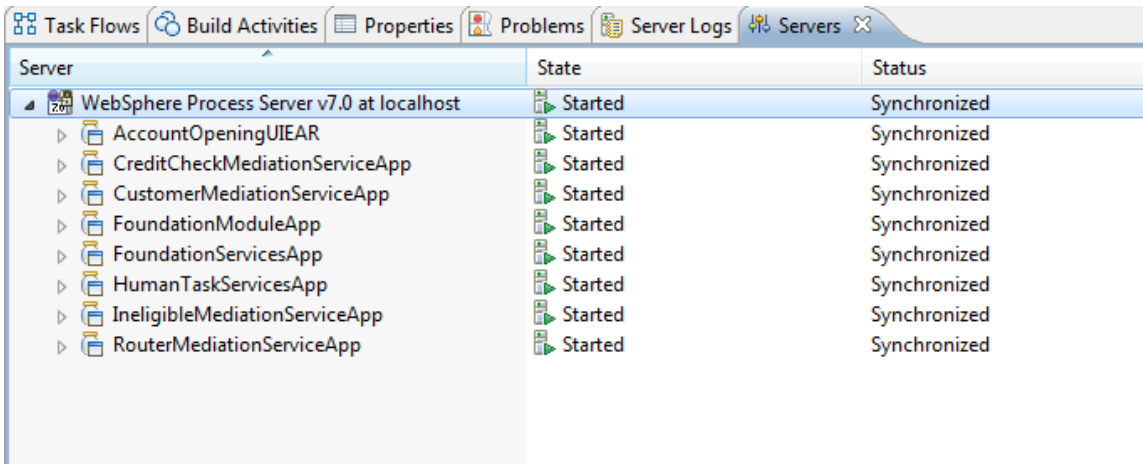
- ___ a. In the Servers tab, right-click WebSphere Process Server v7 at localhost and

select Add and Remove Projects... from the context menu.

__ b. In the Add and Remove Projects, click Add All.



__ c. Click Finish. Wait until it completes.



___ 3. Clear the Server Logs view before executing a test.

- ___ a. In the menu bar in the Server Logs view, click the Clear Server Console icon which can be found towards the right of the task bar.

Note: This is an optional task. You do not have to perform this task; however, this makes it easier for you to find certain output messages during the test.

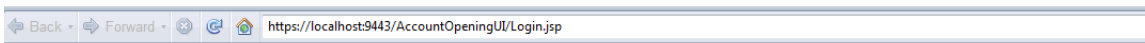
___ 4. Create a new account opening request to test the CreateApplication task user interface JSP.

- ___ a. Open a Web browser, and type the following address in the address field:

<https://localhost:9443/AccountOpeningUI>.

This opens the login page for your account creation user interface. Depending on which browser is used you will need to handle the certificates by either selecting OK or yes when prompted. You may also need to, when the **Certificate Error** window appears, select the **Continue to this website (not recommended)** link to proceed to the authentication page.

- ___ b. At the Login window, enter **admin** in the **Name** as well as **Password** fields.

A screenshot of a web form titled "Login to Business User Client". Below the title is the instruction "Enter user name and password, then click Login." There are two input fields: "Name:" with the text "admin" entered, and "Password:" with masked characters "*****" entered. Below the password field is a "Login" button.

- ___ c. Click Login.

- ___ d. Click New on the main page.

The screenshot shows the IBM Business User Client interface. On the left is a navigation menu with links for HOME, Business Case (with sub-links for New, Open, and Claimed), My ToDo's (with sub-links for Open and Claimed), and User: admin (with a Logout link). The main content area is titled 'Business User Client' and contains two sections: 'Business Case' and 'My ToDo's'. In the 'Business Case' section, the 'New' link is circled in red. Below it is a description: 'Select this to view a list of all the tasks that you can use to create a business case. For search criteria, you can provide additional information.' The 'My ToDo's' section has sub-links for 'Open' and 'Claimed', each with a brief description of their functions.

___ e. CreateApplication is the only available task. Click the link.

The screenshot shows the 'Business Cases > New' screen. The left navigation menu is the same as in the previous screenshot. The main content area is titled 'Business Cases > New' and contains the instruction: 'Select a process or task for which you want to create a business case.' Below this is a section titled 'Task' with a dropdown arrow. Underneath, the 'CreateApplication' link is circled in red.

___ f. On the CreateApplication screen, fill in the data fields. In order to demonstrate the data flow, use the **companyName of IBM**

You may leave rest of the fields blank.

Note: The contents of these fields get populated by the **DetermineApplicantEligibility** service for IBM so that you do not need to enter values for all fields.

___ g. Click Create. The Web browser will return to the **Business Cases > New** page.

The **AccountVerification** business process template defines the application review process, as follows: If the value entered for **eligibleApplication** is true, then the **CustomerApplication** data goes to the **InitialReview** activity. Otherwise, the data would flow through the **MaptoIneligible** activity.

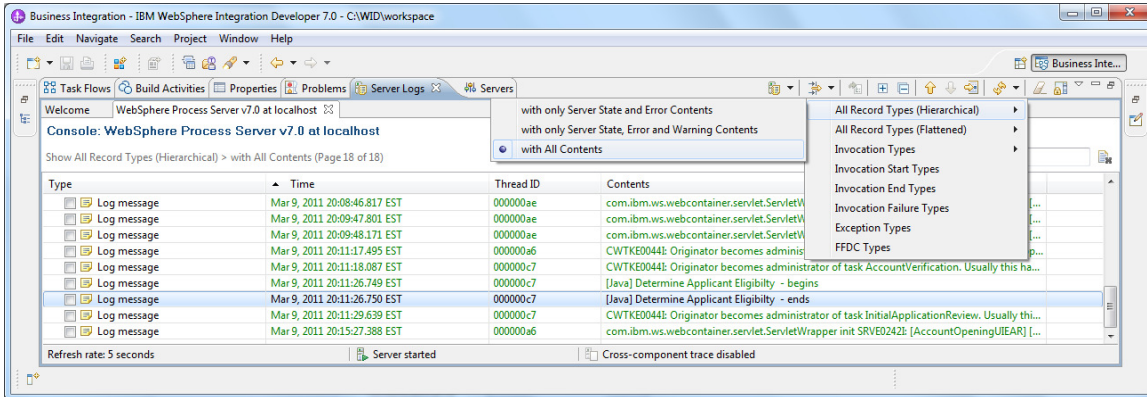
In this test case, **eligibleApplication** is set to **true**. Therefore, the **InitialReview** activity gets invoked. This service is provided by **InitialReviewPartner**, which is the **InitialReview** business process in the **FoundationModule**.

The **InitialReview** business process invokes the **Initial Application Review** to-do (participating) task.

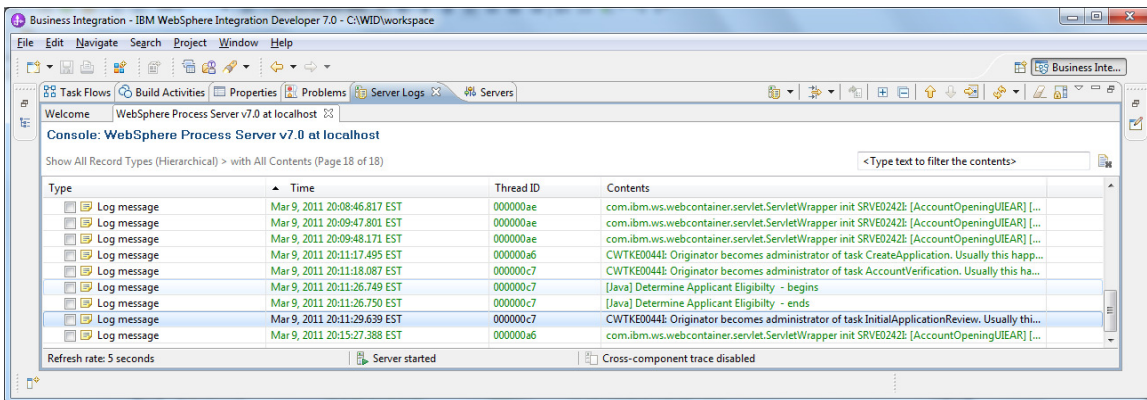
___ 5. Examine the output messages.

___ a. Click the **Server Logs** tab.

___ b. In order to see the entire logged messages, click the Select Records to Display icon, and then select All Record Types (Hierarchical) > with All Contents.



___ c. You should see messages from the human task container, “CWTKE0044: Originator becomes administrator of task InitialApplicationReview.”



Note: Log messages with the CWTKE prefix indicate human task-related messages. The “I” indicates that it is an informational message. Here is the definition of CWTKE0044: CWTKE0044: Originator becomes administrator of task {0}. Usually this happens, because no people assignment criteria is defined for the administrators of the task, or because its usage returns an empty set of users.

Explanation: Because administrator could not be found, the task’s originator will also be the task’s administrator. This can occur when either the task’s people assignment criteria (staff verb) for administrator return an empty set of users, or when this people assignment criteria are not defined.

User Action: If this is not what you want, check the people assignment criteria (staff verb): Maybe the people assignment criteria need to be changed, or you need to define a people assignment for the administrators of the task.

___ 6. Complete the InitialApplicationReview work item.

- ___ a. In the Web application, click Open under My ToDo's. There should be a work item, InitialApplicationReview, ready for completion.

IBM

→ HOME

Business Case

→ New

My ToDo's

Open

→ Claimed

User: admin

→ Logout

My ToDo's > Open

Select a task to see more details and finally claim the task.

Task Name	Description	First Activated	Originator
→ InitialApplicationReview		3/9/2011 8:11:29 PM EST	admin

Items found: 1 Page 1 of 1 Items per page: 20

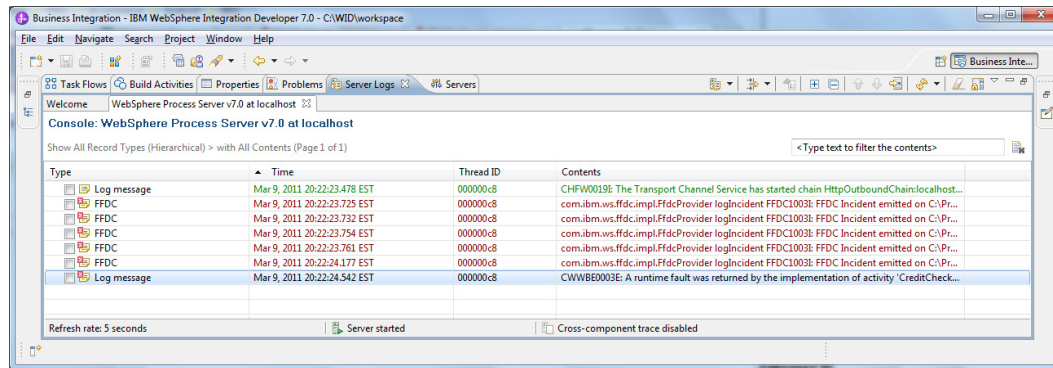
Refresh

- ___ b. Select the link, and click Claim.

- ___ c. There is no need to change the Output Data; therefore, click the Complete button without making any modifications.

contactFirstName	<input type="text" value="Landon"/>
contactLastName	<input type="text" value="Donovan"/>
contactPhoneNumber	<input type="text" value="547-312-3172"/>
creditRating	<input type="text"/>
creditReportNeeded	<input checked="" type="checkbox"/>
creditRisk	<input type="text"/>
creditScore	<input type="text" value="0"/>
customerCity	<input type="text" value="Boston"/>
customerCountry	<input type="text" value="USA"/>
eligibleApplication	<input checked="" type="checkbox"/>
ineligibleReason	<input type="text"/>
pricingCode	<input type="text" value="34"/>
pricingScore	<input type="text"/>
productName	<input type="text" value="Pens"/>
requestAccountAmount	<input type="text" value="30000"/>

___ d. Examine the output in the Server Logs view.



You should see the exceptions being thrown in the Server Logs view. Now, your task is to troubleshoot this runtime error.

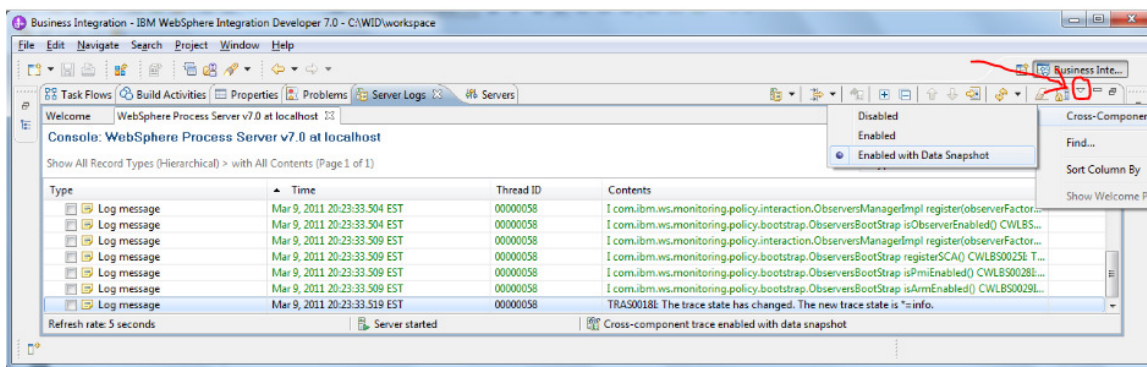
Part 3: Troubleshoot the AccountVerification service failure

For the lab purpose, the problem introduced here is a very simple one to troubleshoot. The main purpose of this section is to demonstrate different tools that are available for you to troubleshoot runtime problems.

___ 1. Rerun the test with cross-component trace enabled.

___ a. Select the Server Logs tab.

___ b. Access cross-component trace settings by clicking the View Menu arrow at the far right upper corner of the Server Logs toolbar.



___ c. Enable cross-component trace by selecting Cross-Component Trace State > Enabled with Data Snapshot from the view menu.

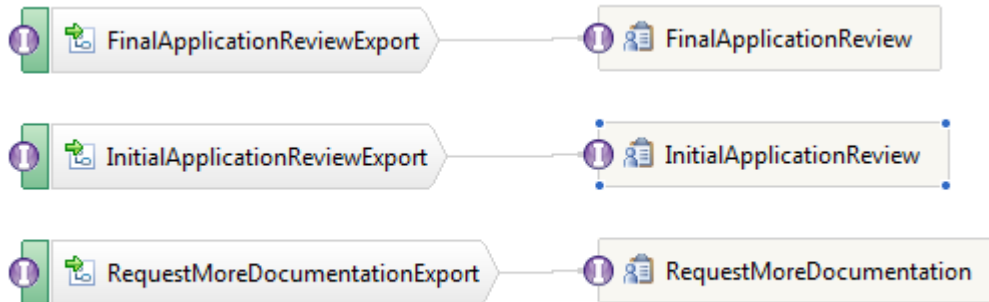
Note: You may want to clear the Server Logs view again before sending another event.

___ d. From the JSP page, send the test data for company, **IBM** again, by creating a new entry. Now that you enabled the cross-component trace, you can see the event flow.

___ e. In the **Server Logs** view, the focus should be on the **End component (InitialApplicationReview:InputCriterion)**. Right-click the entry and select **Show Component in Assembly Diagram** from its context menu.

Type	Time	Thread ID	Contents
Log message	Mar 9, 2011 20:23:33.509 EST	00000058	I com.ibm.ws.monitoring.policy.bootstrap.ObserversBootstrap.register(SCA) CWLBS00253.T
Log message	Mar 9, 2011 20:23:33.509 EST	00000058	I com.ibm.ws.monitoring.policy.bootstrap.ObserversBootstrap.isPmiEnabled() CWLBS00288.
Log message	Mar 9, 2011 20:23:33.519 EST	00000058	I com.ibm.ws.monitoring.policy.bootstrap.ObserversBootstrap.isMmiEnabled() CWLBS00290.
Log message	Mar 9, 2011 20:23:33.519 EST	00000058	TRAS0018B: The trace state has changed. The new trace state is "info.
Log message	Mar 9, 2011 20:23:56.943 EST	00000058	TRAS0018B: The trace state has changed. The new trace state is "info.
Invocation sequence (CreateApplicationnull)	Mar 9, 2011 20:50:59.908 EST	000000ee	
Start invoke (CreateApplicationnull)	Mar 9, 2011 20:50:59.908 EST	000000ee	Start of the invocation of operation CreateApplicationnull in module FoundationModule.
Start component (CreateApplicationnull)	Mar 9, 2011 20:50:59.924 EST	000000ee	Start of the component processing of operation CreateApplicationnull in module Foundation.
Start invoke (AccountVerificationInputCriterion)	Mar 9, 2011 20:50:59.932 EST	0000004e	Start of the asynchronous invocation of operation AccountVerificationInputCriterion in mo.
Start component (AccountVerificationInputCriterion)	Mar 9, 2011 20:50:59.925 EST	00000044	Start of the component processing of operation AccountVerificationInputCriterion in modu.
Log message	Mar 9, 2011 20:50:59.925 EST	00000044	CWTKB0044: Originator becomes administrator of task AccountVerification. Usually this ha.
In business process	Mar 9, 2011 20:50:59.928 EST	00000044	07e82dd4-d6ab-4640-b664-34345f78d94 STATE fcc5115f-467b-4880-9499-354310117551_d8.
Start business process (AccountVerification)	Mar 9, 2011 20:50:59.912 EST	000000c8	Start of processing for business process AccountVerification_P169003012e9c75b69b_a3f4573.
End business process (AccountVerification)	Mar 9, 2011 20:50:59.928 EST	000000c8	End of processing for business process AccountVerification_P169003012e9c75b69b_a3f4573.
Start business process (AccountVerification)	Mar 9, 2011 20:51:00.333 EST	000000c8	Start of processing for business process AccountVerification_P169003012e9c75b69b_a3f4573.
End business process (AccountVerification)	Mar 9, 2011 20:51:00.325 EST	000000c8	End of processing for business process AccountVerification_P169003012e9c75b69b_a3f4573.
Start business process (AccountVerification)	Mar 9, 2011 20:51:00.495 EST	000000c8	Start of processing for business process AccountVerification_P169003012e9c75b69b_a3f4573.
End business process (AccountVerification)	Mar 9, 2011 20:51:00.526 EST	000000c8	End of processing for business process AccountVerification_P169003012e9c75b69b_a3f4573.
Start invoke (InitialApplicationReviewInputCriterion)	Mar 9, 2011 20:51:00.579 EST	000000c8	Start of the asynchronous invocation of operation InitialApplicationReviewInputCriterion in.
Start component (InitialApplicationReviewInputCri	Mar 9, 2011 20:51:00.578 EST	00000044	Start of the component processing of operation InitialApplicationReviewInputCriterion in...
Log message	Mar 9, 2011 20:51:00.838 EST	00000044	CWTKB0044: Originator becomes administrator of task InitialApplicationReview. Usually thi.
End component (InitialApplicationReviewInputCri	Mar 9, 2011 20:51:00.838 EST	00000044	of the component processing of operation InitialApplicationReviewInputCriterion in m.
End import (InitialApplicationReviewInputCriterion)	Mar 9, 2011 20:51:00.838 EST	00000044	of the import processing of operation InitialApplicationReviewInputCriterion in modul.
End invoke (InitialApplicationReviewInputCriterion)	Mar 9, 2011 20:51:00.838 EST	00000044	of the asynchronous invocation of operation InitialApplicationReviewInputCriterion in.
End business process (AccountVerification)	Mar 9, 2011 20:51:00.838 EST	00000044	of the component processing of operation AccountVerificationInputCriterion in modul.
End component (AccountVerificationInputCriterion)	Mar 9, 2011 20:51:00.838 EST	00000044	of the asynchronous invocation of operation AccountVerificationInputCriterion in mod.
End invoke (AccountVerificationInputCriterion)	Mar 9, 2011 20:51:00.838 EST	00000044	of the component processing of operation CreateApplicationnull in module Foundatio.
End component (CreateApplicationnull)	Mar 9, 2011 20:50:59.915 EST	000000ee	End of the component processing of operation CreateApplicationnull in module Foundatio.
End invoke (CreateApplicationnull)	Mar 9, 2011 20:50:59.915 EST	000000ee	End of the invocation of operation CreateApplicationnull in module FoundationModule.

___ f. The HumanTaskServices assembly diagram should be opened with the InitialApplicationReview human task component highlighted.



The InitialApplicationReview work item is now ready for you to claim and complete.

___ 2. Claim and complete the InitialApplicationReview work item.

___ a. In the JSP application, click Open under My ToDo's. There should be a work item, InitialApplicationReview, ready for completion.

IBM

→ HOME

Business Case

→ New

My ToDo's

→ Open

→ Claimed

User: admin

→ Logout

My ToDo's > Open

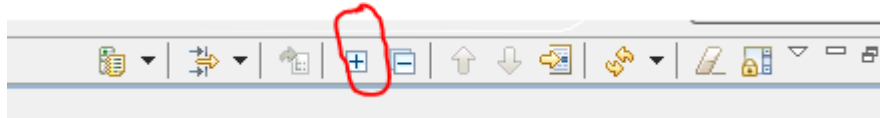
Select a task to see more details and finally claim the task.

Task Name	Description	First Activated
→ InitialApplicationReview		3/9/2011 8:51:01 PM EST

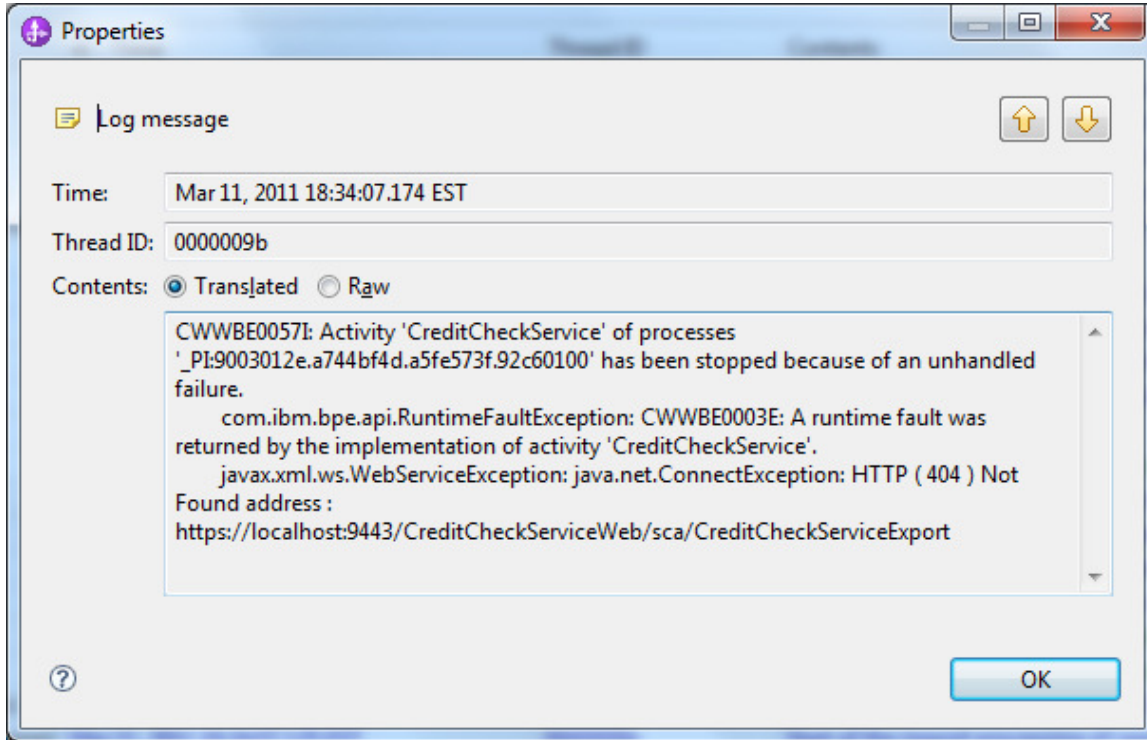
Items found: 1 Page 1 of 1 Items per page: 20

Refresh

- ___ b. Select the link, and click Claim.
- ___ c. Click the Complete button without making any modification.
- ___ d. Examine the output in the Server Logs view.
- ___ e. In the menu bar in the Server Logs view, click the Expand icon.

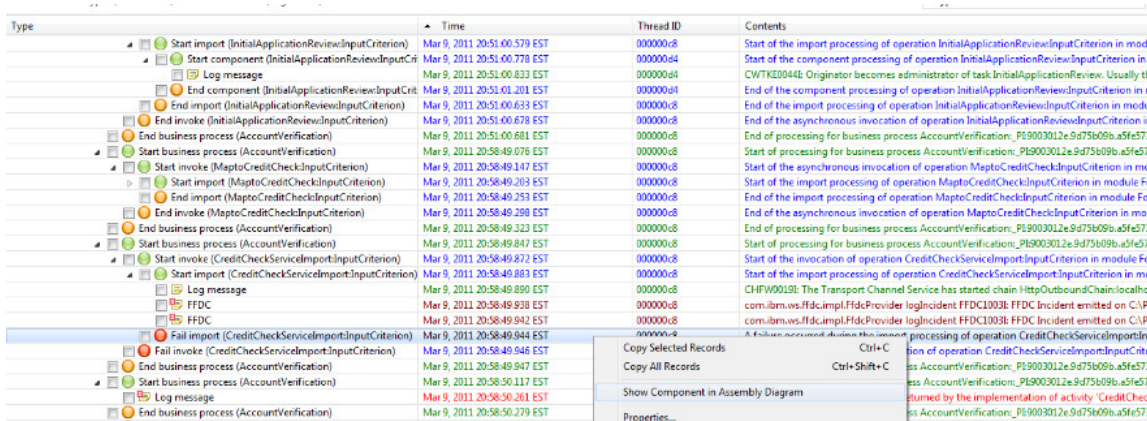


- ___ f. Locate the very first Exception message, and double-click the entry to view its contents. The exception will be found in a Log message with the error code CWWBE0057I

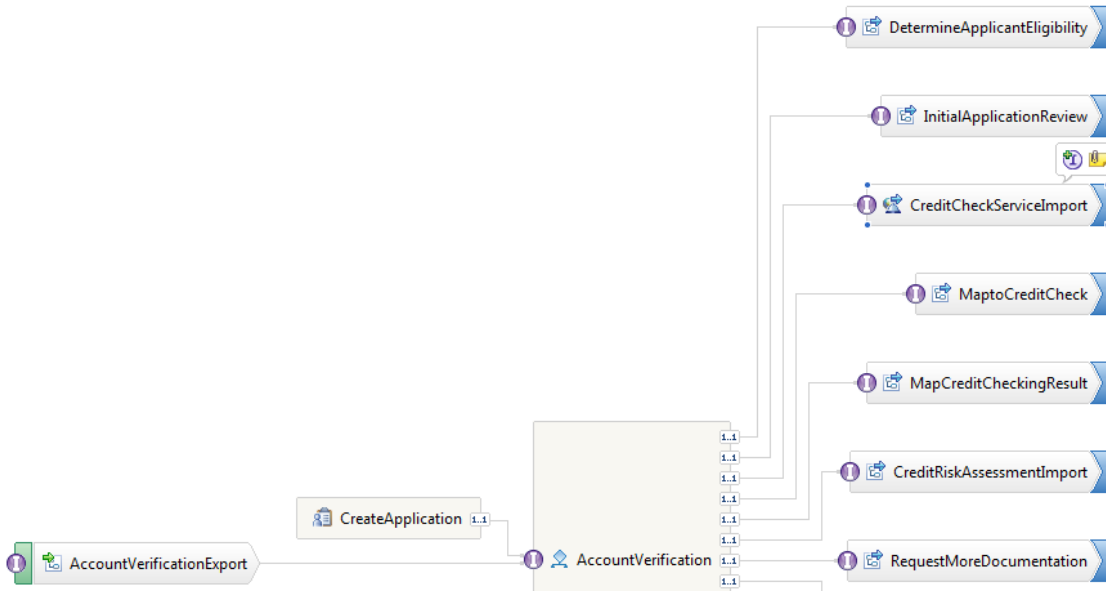


This message indicates that the target service was not found.

- g. Right-click the **Start import(CreditCheckService:InputCriterion)** right above the first **Fail Invoke**, and select **Show Component in Assembly Diagram**.

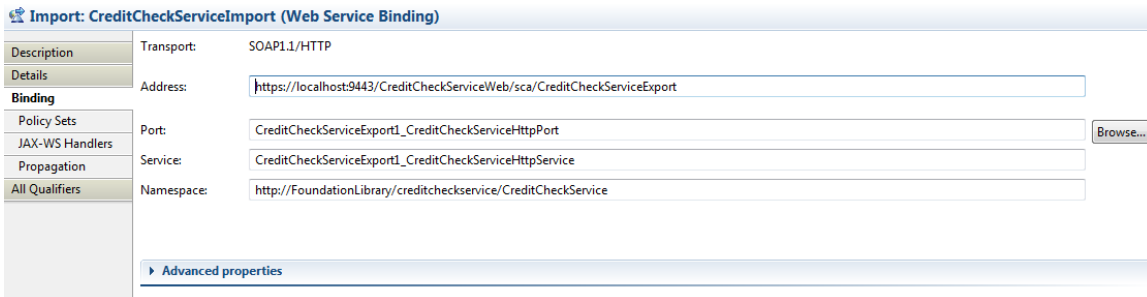


- h. The FoundationModule assembly diagram should open, and the CreditCheckService import component with Web service binding should be highlighted.



___ i. Right-click the CreditCheckService import component and select Show in Properties. This displays the properties of the import component.

___ j. Select the Binding tab.



___ k. The exception indicated that the <https://localhost:9443/CreditCheckServiceWeb/sca/CreditCheckServiceExport> is not running.

___ 3. Launch the administration console to see if the CreditReportService exists.

___ a. Launch Internet Explorer and enter the following address to open the administrative console:

<https://localhost:9043/ibm/console>

___ b. Select OK or Yes on any prompts to proceed to the login page.

___ c. Enter **admin** in the **User ID** and **Password** fields and click Log in.

___ d. Expand **Applications** and select Enterprise Applications from the left pane.

Notice that **CreditCheckService** application cannot be found on the server.

Enterprise Applications
Use this page to manage installed applications. A single application can be deployed onto multiple servers.

Preferences

Start Stop Install Uninstall Update Rollout Update Remove File Export Export DDL Export File

Select	Name	Application Status
<input type="checkbox"/>	AccountOpeningUIEAR	➔
<input type="checkbox"/>	AppScheduler	➔
<input type="checkbox"/>	BPCECollector_qnode_server1	➔
<input type="checkbox"/>	BPCEExplorer_qnode_server1	➔
<input type="checkbox"/>	BPCEContainer_qnode_server1	➔
<input type="checkbox"/>	BPMAAdministrationWidgets_qnode_server1	➔
<input type="checkbox"/>	BSPACEAR_qnode_server1	➔
<input type="checkbox"/>	BSPACEWebformsEnabler_qnode_server1	➔
<input type="checkbox"/>	BusinessRulesManager	➔
<input type="checkbox"/>	BusinessRules_qnode_server1	➔
<input type="checkbox"/>	BusinessSpaceHelpEAR_qnode_server1	➔

4. Check the entries in the Failed Event Manager.

a. In the Server Logs view, there was an entry indicating a failure incident occurred. Let's now look at the "failed event manager"

b. In the administration console, expand Integration Applications and select Failed Event Manager in the left pane.

c. Select Get all failed events under the Failed events on this server section.

Failed Event Manager
The failed event manager is used to query and manage failed events.

Failed events on this server

The following are some common methods for searching for failed events:

- [Get all failed events](#)
- [Search failed events](#)

About your failed event manager

- The Recovery sub-system is enabled.
- Total failed events: 3

IBM WebSphere Application Server - ND, 7.0.0.13
Build Number: cf131039.07
Build Date: 10/2/10

Licensed Material - Property of IBM
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5655-N02, 5733-W70 (C) Copyright IBM Corp.

Documentation

For complete failed event manager documentation, as

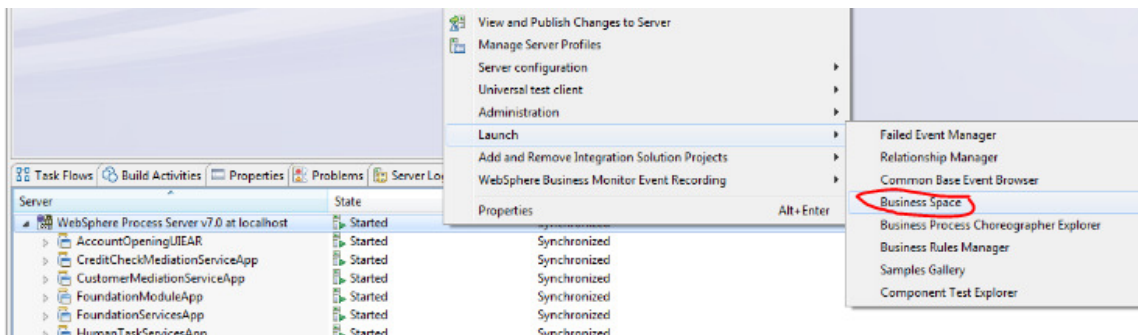
d. You should see at least two failed events, since you sent events twice.

Refresh	Get all	New search...	Resubmit	Resubmit with trace	Delete	Delete expired events	Clear all
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Select	Event ID	Event type	Module	Component	Operation	Failure time	Event status
<input type="checkbox"/>	PI:9003012e.9d5..	BPC	FoundationModule	AccountVerificat..		2011-03-09 20:22..	failed
<input type="checkbox"/>	PI:9003012e.9d7..	BPC	FoundationModule	AccountVerificat..		2011-03-09 20:58..	failed

5. Use the Business Space to check the system health.

Business Space is a common interface for application users to create, manage, and integrate Web interfaces across the WebSphere Business Process Management portfolio. This tool is mostly for business users.

a. In the Servers view, right-click WebSphere Process Server v7 and select Launch > Business Space.



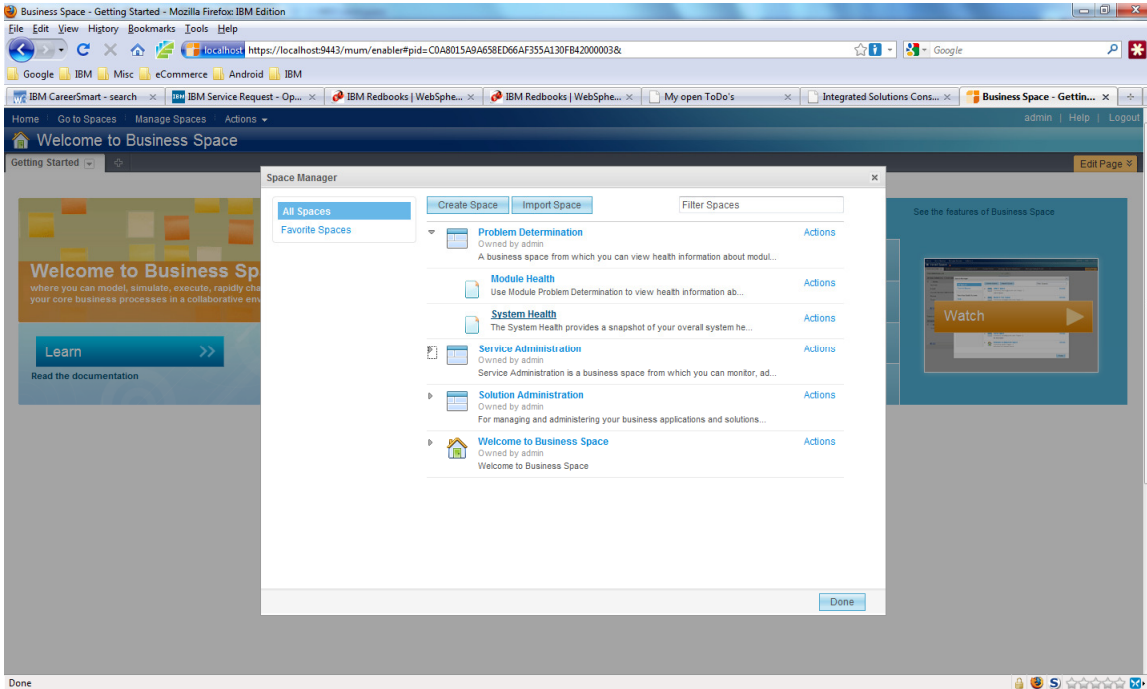
b. When the Security Alert dialog box appears, click Yes to continue.

c. At the login window, enter admin for both user ID and password.

d. At the Welcome panel, click the **Manage Spaces** link in the menu.

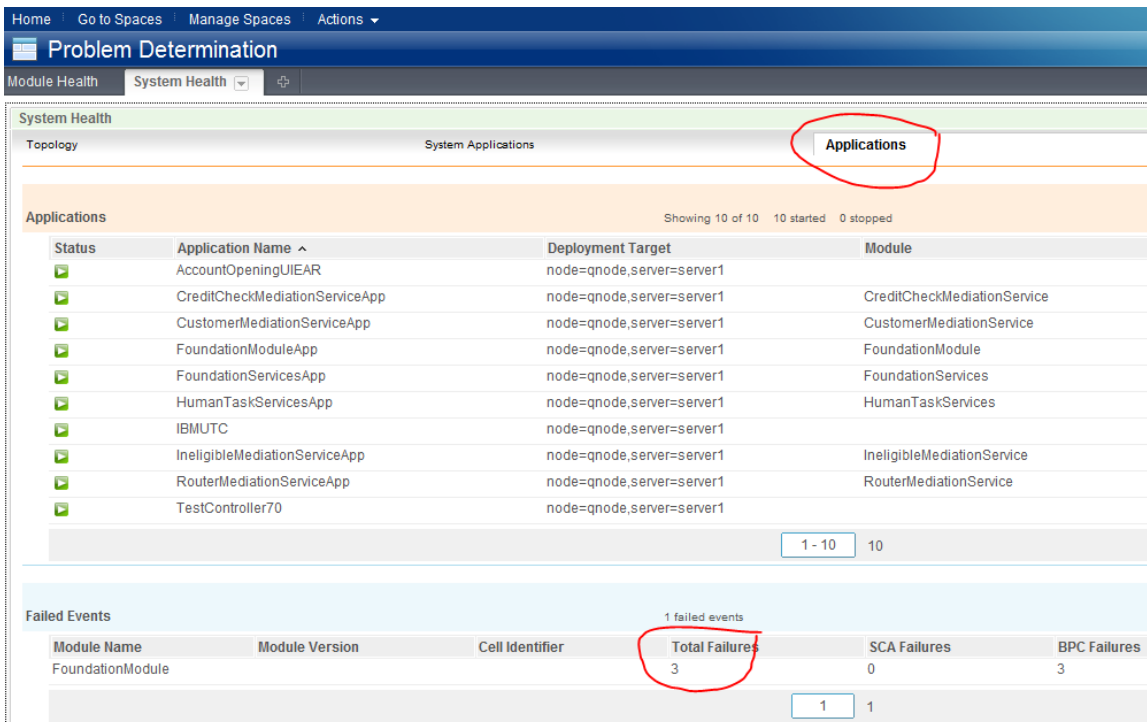
Impact2011 IBM Software Accelerated Value Program

Changing the Way Business and IT Leaders Work



___ e. Now select **System Health** from under the **Problem Determination** section.

___ f. Click the Applications tab to see which services have been started on the server.



Note: Notice that the number of Total Failures in the Failed Events pane is the same as what the Failed Event Manager displayed.

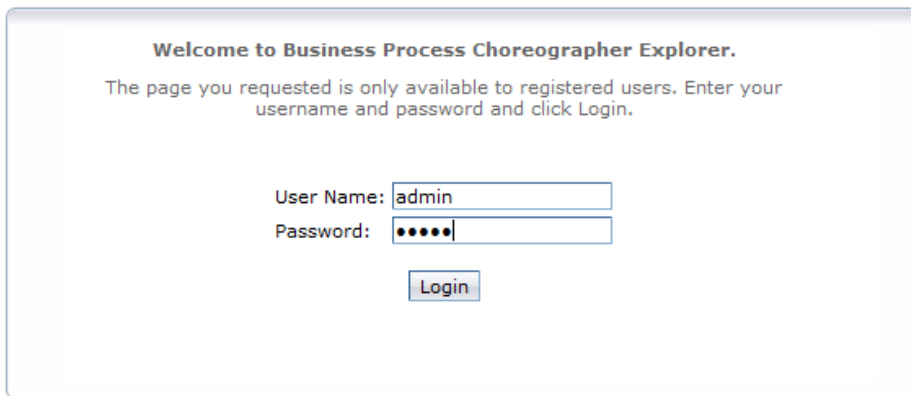
When you are done exploring the Business Space, close it.

___ 6. The AccountVerification service was implemented as a long-running business process. Launch the Business Process Choreographer Explorer to see current running process instances.

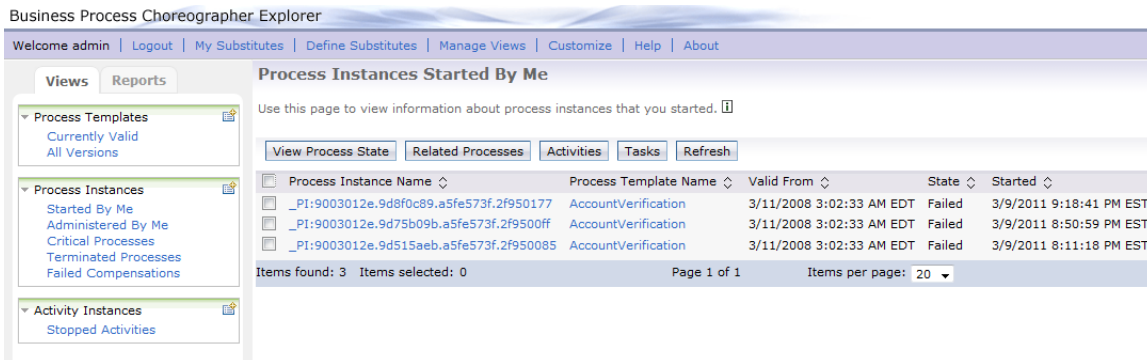
___ a. Launch Internet Explorer and enter the following address to open the administrative console:

<http://localhost:9080/bpc/>

___ b. At the login page, enter admin in the User ID and Password fields and click Login.



___ c. Click Started By Me under Process Instances.



You should see two running instances which have not been completed due to the failed events.

- ___ d. Select one of the running instances to view detailed information.
- ___ e. Click the Activities tab, and notice that the CreditCheckService activity is in stopped state. In other words, this process instance has failed, and the process cannot continue due to failure to invoke the external Web service.

Activity Name	State	Skip requested	Kind	Owner	Activated	Process Instance Name	Process Template Name
RecordIneligibleApplication	Skipped	no	Invoke			_PI:9003012e.a744bf4d.a5fe573f.92c60100	AccountVerification
ProvidePricingandApproval	Inactive	no	Invoke			_PI:9003012e.a744bf4d.a5fe573f.92c60100	AccountVerification
MaptoIneligible	Skipped	no	Invoke			_PI:9003012e.a744bf4d.a5fe573f.92c60100	AccountVerification
FinalApplicationReview	Inactive	no	Invoke			_PI:9003012e.a744bf4d.a5fe573f.92c60100	AccountVerification
Exitmsg	Inactive	no	Script			_PI:9003012e.a744bf4d.a5fe573f.92c60100	AccountVerification
CreditCheckService	Stopped	no	Invoke		3/11/2011 6:34:07 PM EST	_PI:9003012e.a744bf4d.a5fe573f.92c60100	AccountVerification
MaptoCreditCheck	Finished	no	Invoke		3/11/2011 6:34:06 PM EST	_PI:9003012e.a744bf4d.a5fe573f.92c60100	AccountVerification
InitialReview	Finished	no	Invoke		3/11/2011 6:33:44 PM EST	_PI:9003012e.a744bf4d.a5fe573f.92c60100	AccountVerification
DetermineApplicationEligibility	Finished	no	Invoke		3/11/2011 6:33:44 PM EST	_PI:9003012e.a744bf4d.a5fe573f.92c60100	AccountVerification
AccountVerificationReceive	Finished	no	Receive		3/11/2011 6:33:43 PM EST	_PI:9003012e.a744bf4d.a5fe573f.92c60100	AccountVerification

Items found: 10 Items selected: 0 Page 1 of 1 Items per page: 20

- ___ 7. The missing service is provided in the C:\WID\CreditCheck.zip file. Import the Web service and deploy it onto the server.
 - ___ a. Select File > Import....
 - ___ b. Select Project Interchange under the Other folder as the import source type. Click Next.
 - ___ c. Click the Browse... button for the From zip file field.
 - ___ d. Navigate to C:\WID\CreditCheck.zip.
 - ___ e. Click Open.
 - ___ f. Click Select All (there is only one project).
 - ___ g. Click Finish.
 - ___ h. In the Servers tab, right-click WebSphere Process Server v7 at localhost and select Add and Remove Projects... from the context menu.
 - ___ i. In Add and Remove Projects, select CreditCheckServiceApp, and click Add >.
 - ___ j. Click Finish.

Server	State	Status
WebSphere Process Server v7.0 at localhost	Started	Synchronized
AccountOpeningUIEAR	Started	Synchronized
CreditCheckMediationServiceApp	Started	Synchronized
CreditCheckServiceApp	Started	Synchronized
CustomerMediationServiceApp	Started	Synchronized
FoundationModuleApp	Started	Synchronized
FoundationServicesApp	Started	Synchronized
HumanTaskServicesApp	Started	Synchronized
IneligibleMediationServiceApp	Started	Synchronized
RouterMediationServiceApp	Started	Synchronized

Wait until CreditReportServiceApp is started.

- ___ 8. Resubmit the failed events through Failed Event Manager to complete the process.
 - ___ a. In the administration console, expand Integration Applications and select Failed Event Manager in the left pane.
 - ___ b. Select Get all failed events under the Failed events on this server section.

Failed Event Manager > Search results

The failed events result set shows the failed events found from the most recent query.

Use the buttons below to manage the failed events in the current result set and to query or delete all failed events.

Preferences

<input type="button" value="Refresh"/> <input type="button" value="Get all"/> <input type="button" value="New search..."/> <input type="button" value="Resubmit"/> <input type="button" value="Resubmit with trace"/> <input type="button" value="Delete"/> <input type="button" value="Delete expired events"/> <input type="button" value="Clear all"/>							
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>							
Select	Event ID	Event type	Module	Component	Operation	Failure time	Event status
<input type="checkbox"/>	PI:9003012e.9d5..	BPC	FoundationModule	AccountVerificat..		2011-03-09 20:22..	failed
<input type="checkbox"/>	PI:9003012e.9d7..	BPC	FoundationModule	AccountVerificat..		2011-03-09 20:58..	failed

- ___ c. Click one of the Event IDs to see its details.

[Failed Event Manager](#) > [Search results](#) > [_PI:9003012e.9d515aeb.a5fe573f.2f950085](#)

Use this page to view details about the failed event.

Failed event details

[Open calling process in Business Process Choreographer Explorer](#)

Failed event common properties

Event ID

Event type

Event status

- ___ d. Clicking **View business data** enables you to make a modification to the event message.
- ___ e. Clicking the request link will display the content of this CreditCheckDetail business object instance.

Failed Event Manager

[Failed Event Manager](#) > [Search results](#) > [_PI:9003012e.9d515aeb.a5fe573f.2f950085](#) > [Business data editor](#)

Use this page to view and edit business data parameters.

Parameter name	Parameter value	Parameter type
Input	...	CustomerApplication
Total 1		

- ___ f. In this case, there is no need to edit the message. Therefore, click Resubmit without making any changes.
- ___ g. A message should indicate that the event resubmission was successful.

Failed Event Manager

Messages

Failed event [_PI:9003012e.9d515aeb.a5fe573f.2f950085] was resubmitted successfully.

[Failed Event Manager](#) > [Search results](#) > [_PI:9003012e.9d515aeb.a5fe573f.2f950085](#) > [Business data editor](#)

Use this page to view and edit business data parameters.

None

Total 20

___ h. Return to the list of failed events.

___ i. Select the check box next to the failed event.

Failed Event Manager > **Search results**

The failed events result set shows the failed events found from the most recent query.

Use the buttons below to manage the failed events in the current result set and to query or delete all failed events.

Preferences

Select	Event ID	Event type	Module	Component	Operation	Failure time	Event stat
<input checked="" type="checkbox"/>	_PI:9003012e.9d7..	BPC	FoundationModule	AccountVerificat..		2011-03-09 20:58..	failed

Total 1

___ j. Click Resubmit to submit the rest of the failed events.

___ k. A message should indicate that the event resubmission was successful.

___ l. In the Server Logs view, the cross-component trace continues with the hanged process to complete them. You should be able to find the logs indicating that the failed events were resubmitted successfully.

___ 9. Examine the cross-component trace logs.

___ a. View the Server Logs view.

Since the cross-component trace was enabled with data snapshot, you can view the data.

Note: Once you enable the cross-component trace, the server logs can grow quickly. If you need to go back to the previous page of the log, click the Go to Page icon.

Enter the page number you wish to go to.

Console: WebSphere Process Server v7.0 at localhost

Show All Record Types (Hierarchical) > with All Contents (Page 5 of 5)

Type	Time	Thread ID
Invocation sequence (AccountVerification:null)	Mar 9, 2011 21:50:18.196 EST	000000c8
Start invoke (AccountVerification:null)	Mar 9, 2011 21:50:18.196 EST	000000c8
Start component (AccountVerification:null)	Mar 9, 2011 21:50:18.211 EST	000000c8
Start business process (null)	Mar 9, 2011 21:50:18.213 EST	000000c8
Start invoke (InitialApplicationReview:InputCriterion)	Mar 9, 2011 21:50:18.250 EST	000000c8
Start import (InitialApplicationReview:InputCriterion)	Mar 9, 2011 21:50:18.338 EST	000000c8
Start component (InitialApplicationReview:InputCriterion)	Mar 9, 2011 21:50:18.540 EST	000000d4
End component (InitialApplicationReview:InputCriterion)	Mar 9, 2011 21:50:18.747 EST	000000d4
End import (InitialApplicationReview:InputCriterion)	Mar 9, 2011 21:50:18.388 EST	000000c8
End invoke (InitialApplicationReview:InputCriterion)	Mar 9, 2011 21:50:18.432 EST	000000c8
End business process (null)	Mar 9, 2011 21:50:18.435 EST	000000c8
End component (AccountVerification:null)	Mar 9, 2011 21:50:18.449 EST	000000c8
End invoke (AccountVerification:null)	Mar 9, 2011 21:50:18.463 EST	000000c8

The screenshot shows the console interface with a log entry selected. A 'Go to Page' dialog box is open, allowing the user to navigate to a specific page of the log. The dialog box has a text input field containing '1' and 'OK' and 'Cancel' buttons.

Click OK to view the log entry in a different page.

Note: The Credit Check Service returns a random number between 1 and 11 which defines the Credit Score. If the Credit Score is less than 4 is a high Credit Risk. In this case "More documentation is requested". However, if the risk is Medium only a "Final Review" is needed. People with "low risk" are automatically approved for the loan.

b. Go back to Application web and review "My ToDo's" for next step in the process. Remember you might end up with a different result depending upon your credit risk. Study the logs to understand what happened in your case.

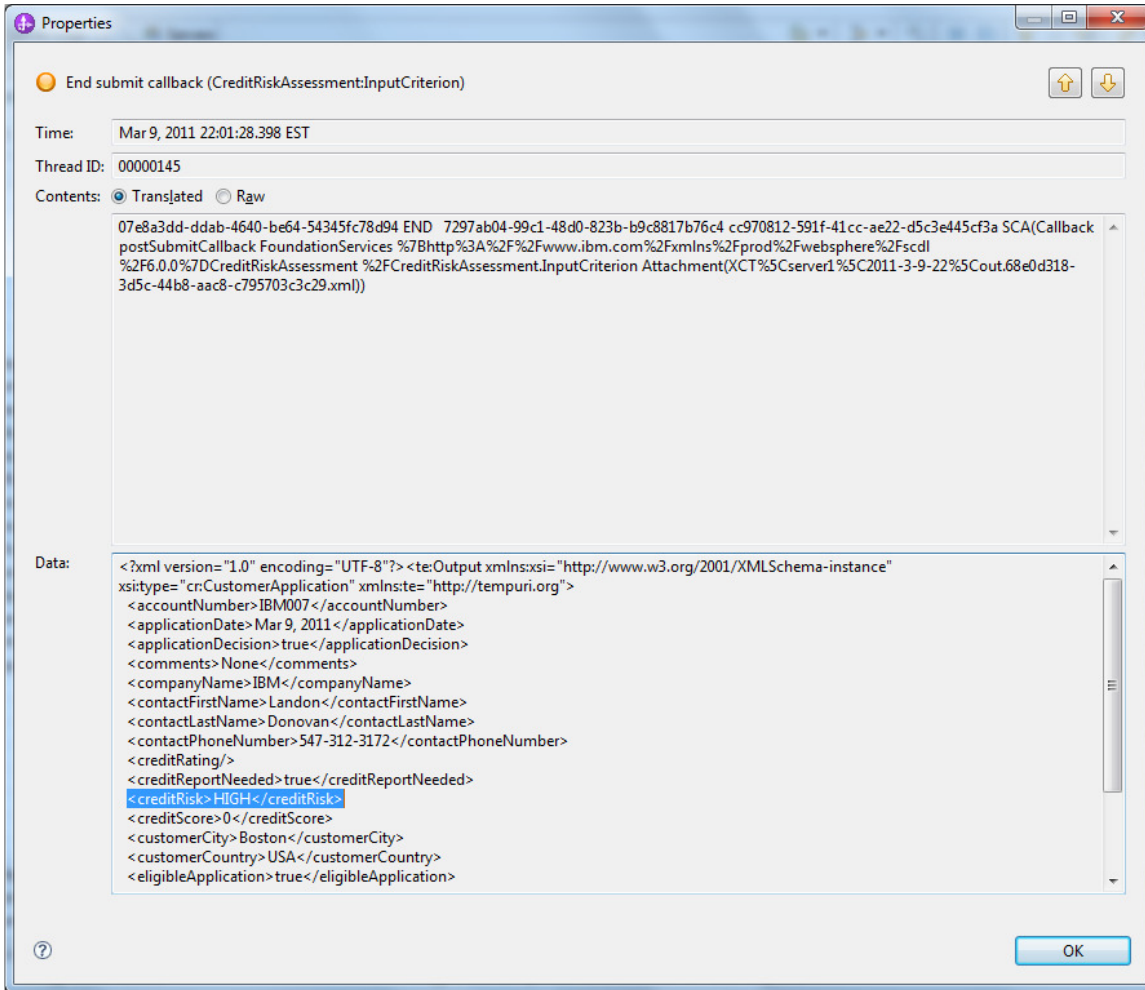
The screenshot shows the IBM Business Case application interface. The 'My ToDo's' section is active, displaying a list of tasks. The tasks are:

Task Name	Description	First Activated	Originator
RequestMoreDocumentation		3/11/2011 6:54:44 PM EST	admin
RequestMoreDocumentation		3/11/2011 6:54:44 PM EST	admin

Below the table, it shows 'Items found: 2', 'Page 1 of 1', and 'Items per page: 20'. There is also a 'Refresh' button.

Note: If you cannot locate the some entry in the Server Logs view, you simply need to click the Expand icon to collapse the process tree.

- ___ c. Double-click Start submit callback (CreditRiskAssessment:InputCriterion) to view its content.
- ___ d. If the creditRisk value is HIGH, follow the next steps. If the creditRisk is MEDIUM then go to step (i). If the creditRisk is LOW then go to step 10.



- ___ e. In the Web application, click Open under My ToDo's. There should be a work item, RequestMoreDocumentation, ready for completion.

The screenshot shows the IBM Software Accelerated Value Program interface. On the left, a navigation menu includes 'HOME', 'Business Case', 'New', 'My ToDo's', 'Open', and 'Claimed'. The 'My ToDo's' section is active, showing 'Open' and 'Claimed' options. The main content area is titled 'My ToDo's > Open' and contains a table with one task: 'RequestMoreDocumentation'. The task name is highlighted with a blue arrow. Below the table, there is a 'Refresh' button.

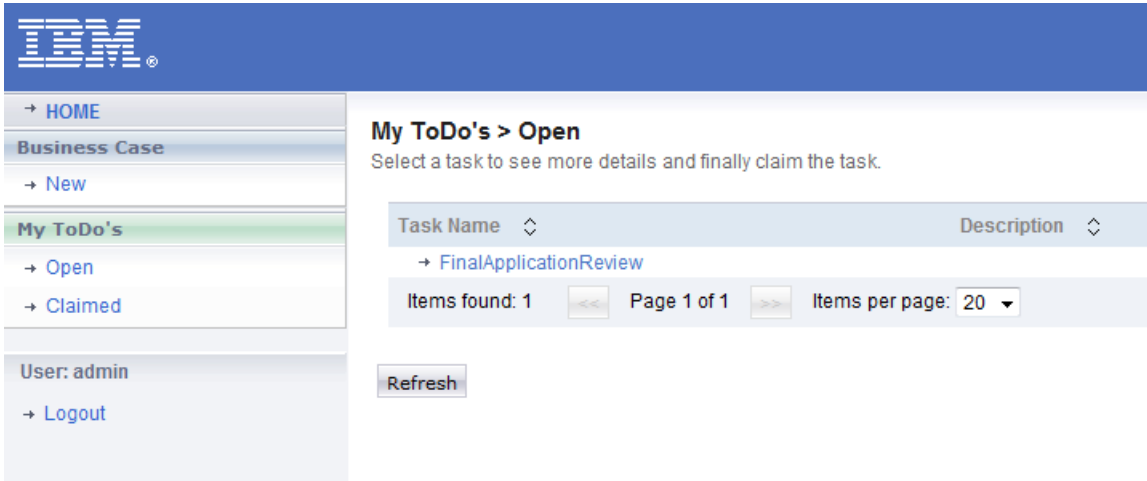
___ f. Select the link, and click Claim.

___ g. Change the text in the comments field from None to Approved.

applicationDate	<input type="text" value="Mar 9, 2011"/>
applicationDecision	<input checked="" type="checkbox"/>
comments	<input type="text" value="Approved"/>
companyName	<input type="text" value="IBM"/>
contactFirstName	<input type="text" value="Landon"/>
contactLastName	<input type="text" value="Donovan"/>
contactPhoneNumber	<input type="text" value="547-312-3172"/>
creditRating	<input type="text"/>
creditReportNeeded	<input checked="" type="checkbox"/>
creditRisk	<input type="text" value="HIGH"/>
creditScore	<input type="text" value="0"/>
customerCity	<input type="text" value="Boston"/>
customerCountry	<input type="text" value="USA"/>

___ h. Click Complete.

___ i. In the Web application, click Open under My ToDo's. There should be a work item, FinalApplicationReview, ready for completion.

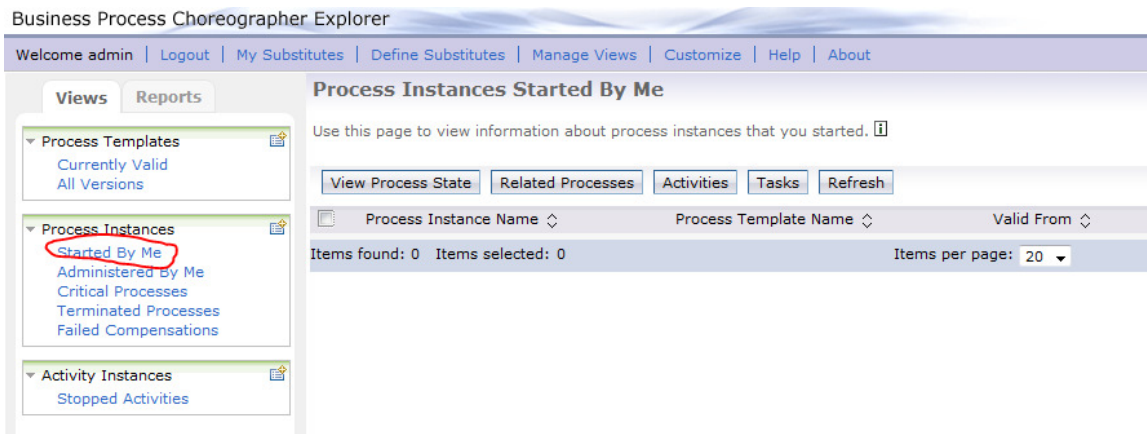


___ j. Select the link, and click Claim.

___ k. Click Complete.

___ 10. Return to the Business Process Choreographer Explorer to verify that there are no more running process instances.

___ a. Click Started By Me under Process Instances.



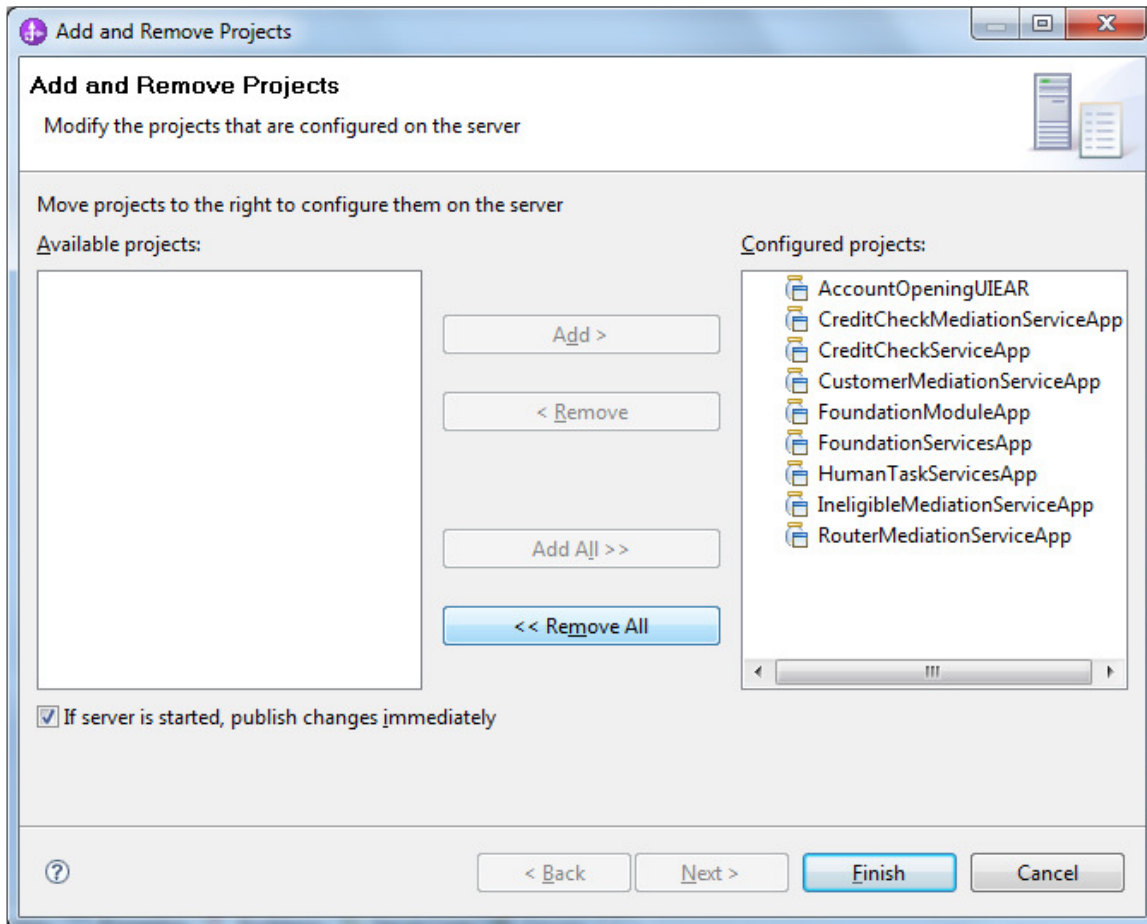
Note: You might want to test with multiple "Create Application" scenarios in order to get a different Credit Risk generated and thus a different result.

Part 4: Clean up the environment

___ 1. Remove all of the deployed projects from the server.

___ a. In Servers view, right-click WebSphere Process Server v7, and select Add and Remove Projects from its context menu.

___ b. Click the << Remove All button.



___ c. Click Finish.

End of exercise

Exercise review and wrap-up

In this exercise, you learned how to utilize the cross-component trace to find the service component where the failure first occurred. In case of a long-running business process, the service invocation is always asynchronous. Therefore, the failure gets captured by the Failed Event Manager. Once the problem was fixed, the failed events could be resubmitted for completion. You also saw that the business process instances can be monitored using the Business Process Choreographer Explorer. The problem presented in this exercise was very simple to detect. However, the techniques in which you learned to use cross-component trace can be applied to every SCA application.