IBM WebSphere[®] Process Server V7.0 – Lab exercise

WebSphere Process Server V7.0 Process evolution and instance migration

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What this exercise is about

This lab shows you how to migrate a business process template using WebSphere Integration Developer V7.0, deploy the new business process template version to the process server, and then migrate live process instances from the older business process template version to the new business process template version at run time using the Business Process Choreographer Explorer.

In this lab you will build, deploy, and manage migration of in-flight business process instances. The beginning will cover background information in presentation form to level set this new enhancement. You will then build your new process version in WebSphere Integration Developer to see differences and make improvements to the process. Once satisfied with the changes, you will deploy the new version of the business process and use the BPC explorer and Business Space to manage the migration of an in-flight process to your new version. The take-away from this lab will be the hands-on realization of improved business process agility and dynamicity in WebSphere Process Server version 7.

Lab requirements

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

• WebSphere Integration Developer V7.0 with the WebSphere Process Server test server installed

What you should be able to do

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

- Import project interchange files that has the initial process version into the WebSphere Integration Developer V7.0 development environment
- Deploy an initial process to the WebSphere Process Server test environment and then start a couple of process instances using the integration test client
- Verify the process instances using the Business Process Choreographer Explorer
- Create a new process version in WebSphere Integration Developer V7.0
- Make a critical and an uncritical change to the new version of the process
- Verify the new process version using the Differences Editor in WebSphere Integration Developer V7.0 which is a visual display of the migration specification.
- Use the Business Process Choreographer Explorer and migrate the existing process instances from the old process template version to the new process template version
- Explain why the process instances were successful and which ones correctly were not allowed to migrate

Introduction

Process instance version handling provides the ability to migrate in-flight process instances to a new process template version at runtime.

To start you will need to create a new version of a V7 process model in WebSphere Integration Developer v7 with a new validFrom date. The "New Process Version..." Wizard copies the module for version handling including specification of new validFrom. Source and target process versions must be v7 processes.

There are two types of changes that you will make to the business process that affect process instance version migration; a critical and an uncritical change to the new version of the process. The first are considered uncritical changes. These changes do not influence migration and are descriptive or QoS property changes. The second type of change covers everything else. These are called critical changes because the process template has been fundamentally changed. Critical changes are changes to the business logic of a process migration. You will be able to view those changes in the Differences Editor inside WebSphere Integration Developer V7. Once deployed, you will be able to see the different versions in the BPC Explorer application.

You can perform the in-flight process instance migration two ways. You will use the BPC Explorer application, which allows you to migrate single or select business processes. A script is also available and allows for bulk migration. The script can migrate all potential instances of a source process version to a target process version at one time. Each process instance migrated in one transaction. This reduces the risk of running into transaction timeout. For example, selecting 1000 instances to migrate will result in 1000 transactions.

Here is a general diagram of how process instance version handling works. WebSphere Integration Developer actions have darker blue text and WebSphere Process Server actions are in a lighter blue.



Here is a diagram of the actions you are going to take to create a new process version in WebSphere Integration Developer V7. Notice if the business process has an SCA version handling set, a backup module is created.

LoanApplicationLib	rary	
OrderFulfilmentLit	New	See New Process Version
Test1	Open Deployment Editor Open Data Mar Catalon Show Files New Process Version	Specify When the New Versions Become Valid Specify when the new versions of processes, human task, and state specify the new version number for the module itself.
	Show Referent Copy Paste Back Up a Version of a Module The selected module is versioned, and will be scheme. The selected module will then conta	e backed v Process Version in the net Now C C C C C C C C C C C C C C C C C C C
	X Delete Refactor or An Backup module name: LoanApplicationModu	le Oct 2, 2009
	Import Export Vise default location	Module Version
	Refresh Close Project	More about creating versioned modules
	Test @ Generate Documentation	arget this process migration specification, select an item in the following list.
	New Process Version	as changed: Valuertom.
	🖅 LoanApplicationModule_1.0.0 🔗 LoanApprovalProce	SS October 27, 2008 4:50:27 PM 😰 LoanApplicationModule 🙎 LoanApprovalProcess Octob
	(), (), <u>)</u>	● ⊂ 5
	Receive	Receive

You can go back and manually add migration specification if you realize after the fact. In WebSphere Integration Developer V7, navigate to File > New > Process Migration Specification, select source and target. This action will re-create the migration specification. The migration specification is important because it outlines how the migration will happen at runtime and is deployed with the migrated business process application.

Exercise instructions

Some instructions in this lab are Windows operating system specific. If you plan on running WebSphere Integration Developer on a Linux operating system you will need to run the appropriate commands and use appropriate files for Linux. The directory locations are specified in the lab instructions using symbolic references, as follows:

Reference Variable	Windows Location	AIX [®] /UNIX [®] Location
<wid_home></wid_home>	C:\IBM\WID70	/opt/IBM/WID70
<wte_home></wte_home>	C:\IBM\WID7_WTE\runtimes\bi_v7	/opt/IBM/WID7_WTE/runtimes/bi_v7
<wps_profile_home></wps_profile_home>	<wte_home>\profiles\qwps</wte_home>	<wte_home>/profiles/qwps</wte_home>
<lab_files></lab_files>	C:\Labfiles70\WPS\ProcessMigration	/tmp/Labfiles70/WPS/ProcessMigration
<workspace></workspace>	<lab_files>\workspace</lab_files>	<lab_files>/workspace</lab_files>
<solution></solution>	<lab_files>\workspace\solution</lab_files>	<lab_files>\workspace/solution</lab_files>

Windows user note: When directory locations are passed as parameters to a Java[™] program such as EJBdeploy or wsadmin, it is necessary to replace the backslashes with forward slashes to follow the Java convention. For example, C:\LabFiles70\ is replaced by C:/LabFiles70/

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:\IBM\WID7_WTE\runtimes\bi_v7	/etc/sscell/wps	
<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 Test</u> <u>Environment</u>'.

Part 1: Prepare environment for lab

In this section of the lab, you will import all the projects in the **WPIv70_WPS_LoanApplication2009_PI.zip** project interchange file into a new workspace.

1. Start WebSphere Integration Developer V7.0 with a workspace location of <WORKSPACE>

🖶 Workspace Launcher	X
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.	
Workspace: C:\LabFiles70\WPS\ProcessMigration\workspace	Browse
Use this as the default and do not ask again	
ок	Cancel

- ____ 2. Click **OK**
 - 3. Import Project Interchange file, WPIv70_WPS_LoanApplication2009_PI.zip, into the development environment
 - ____a. Right-click inside **Business Integration View** (top left view in the Business Integration Perspective) and select **Import** from the pop-up menu

🔠 Business Inte	gration 🛛		
	B 🔁 🖶 🔁	1	
Integration So	lutions	New	
New integration	solution		
	New	•	
	🔁 Import		
	🛃 Export 🕅		
Projects	🔊 Refresh	-	
New business int	Add to Asset Repository.		
	Properties		

____b. From the Import, dialog, expand Other and select Project Interchange from the tree

🤀 Import				
Select Import a project and i	ts dependent pr	ojects from a Zip) file.	Ľ
Select an import sour	ce:			
type filter text				
Web Web service Web service Mu Mu Mu Mu Mu Mu Mu Mu Mu Mu	:5 d Model Interchange			▲ ▼
0	< <u>B</u> ack	<u>N</u> ext >	Einish	Cancel

___ c. Click Next

___ d. In the next Import Project Interchange Contents panel, click the Browse button for From zip file and navigate to <LAB_FILES>/import/WPIv70_WPS_LoanApplication2009_PI.zip and click Open

🥵 Import Project Interchange Conte	ents	
Import Projects Import Projects from a zip file.		<u></u>
From zip file: C:\LabFiles70\WP Project location root: C:\LabFiles70\WP	5\ProcessMigration\import\WPIv70_WPS_LoanApplication2009_PI.zip 💌	Browse
LoanAppTestProject Image: CoanApplication2009 Image: CoanApplicationLibrary		
Select All Deselect All Select Refe	renced	
0	<pre>ABack Next > Finish</pre>	Cancel

- ____e. Click the Select All button to select all the check boxes for the projects listed
- ____f. Click **Finish** button (projects are imported and auto-build will run).
- ____g. Verify you have LoanApplication2009, LoanApplicationLibrary and LoanAppTestProject modules listed in the Business Integration view under the **Projects** section.

🕼 Business Integration 🛛	- 8
🔁 🖶	🔁 🖧 🖪 😤 🎽
Integration Solutions	<u>New</u>
New integration solution	
Projects	<u>New</u>
LoanApplication2009 LoanApplicationLibrary LoanAppTestProject	

____h. Verify the 'WebSphere Process Server V7.0' listed in your Servers and start the server

🔀 Task Flows 🗟 Build Activities 💷 Properties 🔝 Problems 🔞 Server Logs	용 Servers 원	
	参 💽 🖉	= 🕑 🔚
Server 🔺	State	Status
记 WebSphere Business Monitor Server v7.0 on WebSphere Process Server	🚡 Stopped	
🗱 WebSphere Process Server v7.0 at localhost	Stopped	

____i. Click the Start Server (¹) icon to start the server

Part 2: Create process instances for LoanApplication2009 application

In this part of the lab, you will be taken through the loan approval example to understand what will happen in the process later when testing. You will then publish the applications to WebSphere Process Server test environment, use the integrated test client to start a few process instances and then use the Business Process Choreographer explorer to verify the process instances.

- 1. Ensure the WebSphere Process Server test server is started
 - _____a. From the **Servers** view of WebSphere Integration Developer, select **WebSphere Process Server v7.0** and click the **Start the server** icon (100) if the server is not yet started

😤 Task Flows ᢙ Build Activities 🔲 Properties 🔝 Problems 🔞 Server Log	is 해 Servers 없	- 8
	参 🕻) 🖉 🔳 🕑 🔚
Server 🔺	State	Status
🔀 WebSphere Business Monitor Server v7.0 on WebSphere Process Server	遣 Stopped	
🔀 WebSphere Process Server v7.0 at localhost	🚡 Started	Synchronized

- 2. Verify the loan application process
 - ____a. Open the LoanApprovalProcess in the process editor
 - 1) Expand LoanApplication2009 → Integration Logic → Process in the Business

Integration view and double click **LoanApprovalProcess** (^{C LoanApprovalProcess}) to open it in an Assembly Diagram editor



____b. The loan approval process is opened in the process editor as shown below:

What does the loan approval process do?

The Loan Approval Process receives the application data, copies it to an assign activity and checks for auto approval availability using an invoke activity. If the applied loan amount is for less than (< \$50,000) 50,000 dollars, the loan is auto approved and the auto-approved case activity is invoked. If the applied loan amount is greater than (> \$50,000) 50,000 dollars, the otherwise activity is invoked which turn invokes an assign activity that assigns the work to human task labeled "process application". A second approval human task activity has been added to this simple sample to add a final human approval and to highlight what happens in two process paths that have a critical change and uncritical change in the new process versions



___ c. Close the BPEL Editor.

- 3. Add the LoanApplication2009App and LoanAppTestProjectApp projects to the test server using the Add and Remove Projects dialog from the server pop-up menu
 - ____a. Right-click **WebSphere Process Server v7.0** under the Servers view and select **Add and remove projects...** from the context menu

____b. In the Add and Remove Projects window, click **Add All >>** to add LoanApplication2009App and LoanAppTestProjectApp projects to the Configured projects panel

🚯 Add and Remove Projects			
Add and Remove Project Modify the projects that are config	s ured on the server		
Move projects to the right to config	ure them on the server		
<u>Available projects:</u>		Configured projects:	
E - (E LoanApplication2009App)	A <u>d</u> d > < <u>R</u> emove Add All >>		
🔽 If server is started, publish char	nges immediately		
0	< <u>B</u> ack <u>N</u> ext >	Einish	Cancel

____ c. The projects will now be moved to Configured projects text area. Click Finish

____d. Wait while the projects are being published to the server

🚼 Task Flows 🗟 Build Activities 🔲 Properties 🔝 Problems 🔞 Server Log:	s 해 Servers 없	
	参 🜔 🖉	· 🗖 🕑 🔓
Server 🔺	State	Status
😹 WebSphere Business Monitor Server v7.0 on WebSphere Process Server	🛅 Stopped	
😑 🔀 WebSphere Process Server v7.0 at localhost	🚡 Started	Publishing
🗉 💼 LoanApplication2009App		
표 🛅 LoanAppTestProjectApp		Synchronized

_____e. Once the projects are published, from the Servers view, expand **WebSphere Process Server v7.0** to view see if the two applications are started as shown below:

📅 Task Flows 🔗 Build Activities 🥅 Properties 🔝 Problems 🔞 Server Log	s 👫 Servers 🖾	
	参 🜔 🖉	• 🕑 🖴
Server 🔺	State	Status
😹 WebSphere Business Monitor Server v7.0 on WebSphere Process Server	🛅 Stopped	
🖃 🗒 WebSphere Process Server v7.0 at localhost	🛼 Started	Synchronized
🗉 🛅 LoanApplication2009App	Ъ Started	Synchronized
🗄 🛅 LoanAppTestProjectApp	🖡 Started	Synchronized

- 4. Create process instances. For demonstrational purposes, you will create two process instances, one with a loan amount of worth \$44,000 and the second with a loan amount worth \$77,000 using the integrated test client. Remember you will start the process instances but not finish them.
 - ____a. In the Business Integration view, expand LoanApplication2009 and double click Assembly Diagram (Assembly Diagram) to open it in an Assembly Diagram editor



____b. From the LoanApplication2009 assembly diagram, right click over LoanApprovalProcess and select Test Component from the pop-up menu

0 🞗 LoanApprovalProcess	🕕 👔 ManualApprover

- ____c. The LoanApplication2009_Test window is opened where you enter your test data
- _____ d. Accept the default values populated under Default Properties and enter the values into the Initial request parameters table:
 - 1) For Name, click under Value and enter Customer 1

Ę	🗄 🗄		8
	Name	Туре	Value
	🖃 🏪 ApplicationInput	LoanRequestBO	аь
	🚊 🖳 ApplicantInfo	PersonalDataBO	аь
	- 💭 Name	string	Customer 1
	👘 🛄 EmailAddress	string	Press 'Alt+Enter' to

- 2) Similarly, for EmailAddress, enter customer1@us.ibm.com
- 3) Similarly, for TaxPayerId, enter 1234567890
- 4) For LoanAmount, enter 44000

Note: The loan amount of \$44000 will be auto approved by the Loan Approval Process application since it is less than \$50,000.

Ŗ	🗄 🗄						
	Name	Туре	Value				
	🖃 🏪 ApplicationInput	LoanRequestBO	ав				
	🖻 💾 ApplicantInfo	PersonalDataBO	аь				
	抑 Name	string	📧 Customer 1				
	🖳 🛄 EmailAddress	string	customer1@us.ibm.com				
	🛄 TaxPayerId	int	I234567890				
	LoanAmount	int	III 44000				
6	 To edit values, start typing or press F2. 						

____ e. Run the test by clicking the Continue icon ($m{\Omega}$)



_____f. If test client is run for the first time in this workspace, you should see a **Deployment Location** dialog prompting to select a run time sever where the applications are deployed. Select **WebSphere Process Server v7.0** from the list

🖶 Deployment Location	
Select a Deployment Location	
This server instance is currently running.	
Deployment location:	
모= WebSphere Process Servers	New Server
WebSphere Business Monitor Server v7.0 on WebSphere Process Server	
WebSphere Process Server v7.0 at localhost	
WebSphere Enterprise Service Bus Server	
Mode: Run	
Use this location as the default and do not ask again	
? Finish	Cancel

___ g. Click Finish

____ h. If presented with the User Login dialog, enter the User ID and Password, which by default is normally set to admin and admin. Optionally, you can select the 'Use the authentication settings in the preference and never ask again' check box to prevent this dialog from being displayed in the future

🖶 User Login - Default Module Test	×
Security is enabled on the selected runtime environment(s Sign in to continue the test.).
User ID:*	
admin	
Password:*	
J •••••	
$\hfill \square$ Use the authentication settings in the preference and	never ask again
ок	Cancel

- _____i. Click **OK**. Wait until the integration test client starts.
- ____j. You should see the results shown in the picture below indicating the process has been auto approved:



____ k. Now, create a process instance with a loan amount of \$77,000 (>\$50,000). Click the Invoke icon (
() under Events panel

🔘 🔳 🍰	- 📰	- 🖻	\$₽ 日
-------	-----	-----	-------

- ____I. Enter the values below for Name, EmailAddress, TaxPayerId, and LoanAmount:
 - 1) Name : Customer 2
 - 2) EmailAddress : customer2@us.ibm.com
 - 3) TaxPayerId : 0987654321
 - 4) LoanAmount : 77000

Ę	🗄 📄					
	Name	Туре	Value			
	🖃 🖳 ApplicationInput	LoanReques	ав			
	🚊 🖳 ApplicantInfo	PersonalDat	ав			
	🏳 Name	string	🕮 Customer 2			
	🖳 💭 EmailAddre:	string	💷 customer2@us.ibm.com			
	🛄 🛄 TaxPayerId	int	Image: 0987654321			
	🛄 LoanAmount	int	▣ 77000			
			1	_		
6	🛈 To edit values, start typing or press F2.					

___ m. Click the **Continue** icon (⁽¹⁾) under Events panel

0		å⊳	•	•	≱i ⊳	
	🖗 Þ Іг	nvoke				

___ n. You should see the results shown in the picture below indicating the process is assigned for approval with a human task:



- 5. Launch the Business Process Choreographer (BPC) Explorer site
 - ____a. In the Servers view, right click over WebSphere Process Server v7.0 and then select Launch → Business Process Choreographer from the context menu
 - ____b. Enter the username (admin) and password (admin) and click Login

Alternative: Launch the BPC Explorer site for the Web browser using URL: Ex: <u>http://localhost:9080/bpc</u>

____ c. In the left navigation pane, click the **My To-dos** link under the Task Instances section



_____d. In the **My To-dos** panel to the right, you should see two process task instances listed, one indicating manual approval and the other indicating human task approval as shown below:

My To-dos						
Use this page to work on tasks that are assigned to you. $ar{f l}$						
Work on Re	elease Transfer Start C	hange Bu:	siness Catego	ory Refres	h	
🔲 Priority 🗘	Task Name 🗇	State 🗘	Kind 🗇	Owner 🗘	Originator 🗘	
5	ManualApprover	Ready	To-do Task		admin	
5	SecondApprovalHumanTask	Ready	To-do Task		admin	
Items found: 2	Items selected: 0		<< Pa	ge 1 of 1	>> Items	
e. Logout of th	e BPC explorer					

Note: Do not remove the applications from the WebSphere Process Server test environment at this time.

Part 3: Create and update the new process version

In this part of the lab, you will create a new process template version from the existing process template and add a critical change and uncritical changes. You will be able to see the differences between the original process version and the new process version in the Differences Editor.

- 1. In the Business Integration view, right click the LoanApplication2009 module, and then select **New Process Version** from the pop-up menu. The New Process Version creation wizard is launched
- 2. Specify the name and location of the new process version module
 - ____a. New module name : LoanApplication2010
 - ____b. Select the check box for Use default location to accept the default module location

🚯 New Process Version				
Specify the Module Name and Loca	\diamond			
Specify a name and location for the copy of the module. The copied module will contain the new process version for further modifications.				
Module name: LoanApplication2009				
New module name: LoanApplication2010				
☑ Use default location				
Location: C:\LabFiles70\WP5\ProcessMigration\workspace\LoanApplication2010				
0	< <u>B</u> ack	Next >	Einish	Cancel

_____ 3. Click Next.

- 4. In the next panel, specify when the new process version becomes valid
 - ____a. Select the radio button for **Now**

Note: For demonstrational purposes, you will select process validation time as Now in order to highlight how the migration specification is acted upon. In a production environment, it is recommended to specify a date and time when the new process version becomes valid.

🌐 New Process Version	
Specify When the New Versions Become Valid	\diamond
Specify when the processes, human tasks, and state machines of the copied module become valid.	- (m)
Process Version Now Specify date and time (UTC): Dec 22, 2009 Time: 15 🚔 ; 22 🚔	: 12 😤
Control Control Control Control Control Control	Cancel

- ___ 5. Click Next
- 6. In the next panel, select all or the process components you want to migrate
 - ____a. Select the check box for LoanApprovalProcess

🖶 New Process Version				
Select the Components				\diamond
Select the process components that you want to o Instances of these process components that are r	reate process running can be	migration specifi migrated to the	cations for. new version.	- (m)
Process components:				
🗹 👤 LoanApprovalProcess				
Select All Clear All				
0	< Back	Next >	Finish	Cancel

7. Click Finish

8. You should see the new process version module named LoanApplication2010 created under the Projects section in the Business Integration view. Note that the entire copy of the older version is created



- 9. Now, make changes to the new process version you created. You will make an uncritical change which will not interfere with the process migration and a critical change which will actually interfere with the migration specification of the business process
 - _____a. Uncritical change: Add a description to the LoanApprovalProcess. In the Business Integration view, expand LoanApplication2010 → Integration Logic → Process and double click LoanApprovalProcess to open it in the process editor



- ____b. In the LoanApprovalProcess editor, select the CheckAutoApproval invoke activity and then select the Properties tab in the lower quadrant of the integration work bench
 - 1) Description : Uncritical change to business process, will not interfere with the migration specification

🔠 Task Flows 🗟 Build Act	tivities 🔲 Properties	🛿 🛛 🔝 Problems 👔 Server Logs 👫 Servers 🛛 🛛 🖓 🗖 🗖
🖨 Invoke - CheckAu	toApproval	
Description	ne:*	CheckAutoApproval
Details	play name:	CheckAutoApproval
Compensation	cription:	Uncritical change to business process, will not interfere with the migration specifi
Correlation	:umentation:	
Expiration		
Server		
Administration		

_____ c. Critical change: Any new BPEL activity can be used for a critical change, but you are going to add a **Data Map** activity to the LoanApprovalProcess editor canvas to highlight this new enhancement to version 7. In the LoanApprovalProcess editor, select the **Data Map** activity from the palette tray to the left and drop it above the **SecondApprovalHumanTask** activity of the LoanApprovalProcess.

SecondApprovalHumanTask	🖅 Data Map

- ____ d. The New Data Map wizard is opened
 - 1) Select the radio button for XML map



_ e. Click Next

____f. In the next panel, type the name for the new XML Map activity

1)	Name :	NewActivit	yCriticalChange
----	--------	------------	-----------------

🤮 New Data Map		
Create an XML Map		
XML maps are use	a to transform data between source and target business objects.	
Module or library:	LoanApplication2010 Browse	New
Namespace:	http://LoanApplication2010/NewActivityCriticalChang 🗹 Default	
F <u>o</u> lder:	Browse	
N <u>a</u> me:	NewActivityCriticalChange	
0	< <u>B</u> ack <u>Next</u> Enish	Cancel

___g. Click Next

____h. In the next panel, select the input and output objects. Click the **Add Variables** button for the Input Variables text area and select **ApplicationInput** from the **Select a Variable** dialog

🚯 Select a ¥ariable	_ 🗆 🗡
Variable Name (? = any character, $*$ = any S	tring):
	New
Matches:	
 ApplicationInput AutoApprovalData AutoApprovalResponseData BankResponse ManualApprovalData 	
Variable Type:	
LoanRequestBO	
ОК	Cancel

___ i. Click OK

____j. Similarly, click the Add Variables button for the Output Variables text area and select ApplicationInput from the Select a Variable dialog.

____k. The final Select Input and Output Business Objects panel should look like in the picture below:

🥵 New Data Map						
Select Input and The XML map will trans	Output Busines sform the input busine	ss Objects ess object into the out;	out business (object.	X	
Input Variables:						
ApplicationInput	http://LoadApplicatio	onLibrary - LoanReque:	stBO	A	dd Variabl move Var	e
I Output Variables:						
ApplicationInput	http://LoadApplicatio	onLibrary - LoanReque	stBO	Re	dd Variabl move Var	e
?		< <u>B</u> ack	<u>l</u> ext >	<u>F</u> inish	Can	cel
I. Click Finish	Map activity oper	s in the XML edito	n Click M a	an source to	target	based on
name and type	es icon (🕂).				, tai get	
►NewActivityCrit	icalChange	♪ \$- \$- ×	jþi jø	R. C 4	1	0-
n. This will map th shown below:	ne Application Info	and LoanAmount	input/outp	out elements	using ir	lline maps as
vActivityCriticalChange	P 10 1	🖻 🗶 🕅 🕅	🖳 🕼	🗦 🚺 🔚		
🔄 LoanRequestBO			🗆 🔛 La	oanRequestBO		
<click filter="" to=""></click>			⇒ <⊂li	ck to filter>		
e ApplicantInfo [01]	PersonalDataBO	Local map 🔻 😤	🛨 🖻 A	pplicantInfo	[01]	PersonalDataBC
a Less Annual 50 , 11	:- L	Move 🔻	🗂 🖪 La	oanAmount	[01]	int

____ o. Save the changes. From the menu select File → Save (or Ctrl + S from your keyboard) to save your changes and close the XML editor.

e LoanAmount

[0..1] int

- ____p. Now, rename the XML Data Activity. In the LoanApprovalProcess editor, select the **DataMap** activity and then select the Properties tab. Update the Name and Display name fields
 - 1) Name : NewActicityCriticalChange
 - 2) Display name : NewActicityCriticalChange

Faults Faults Human Workflow Human Task Collaboration Scope		SecondApprovalHumanTask
Task Flows 🕝 Build A	Activities Properties 🕅	Problems 🗑 Server Logs 👯 Servers 🔍 🗖 🗖
Description	Name:*	NewActivityCriticalChange
Details	Display name:	NewActivityCriticalChange
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Description:	Insert Variable

- ____ q. Save the changes. From the menu select **File** → **Save** (or **Ctrl** + **S** from your keyboard) to save your changes and close the LoanApprovalProcess
- 10. Verify the process migration specification. Now, you will verify where the process migration specification is generated in the new process module
  - ____a. In the Business Integration view, expand LoanApplication2010 → Integration Logic → Process Migration Specification and then double click LoanApprovalProcess. The LoanApprovalProcess migration specification viewer is opened. You can view the information related to the migration source and target

#### LoanApprovalProcess - Process Migration Specification

General Settings pecify the general settings of this process migration specification.	Source and Target Select business process compo target of this process migratio	onents to be the source and the on specification.	
Name: * LoanApprovalProcess	Migration Source		
N <u>a</u> mespace: * http://LoanApplication2010 Display name: LoanApprovalProcess	Module: Module version:	LoanApplication2009 (none)	Browse
	Business process component:	👤 LoanApprovalProcess	
	Valid from:	October 27, 2008 4:50:27 PM	
	Migration Target		
	Module:	LoanApplication2010	Province
	Module version:	(none)	Drowse
	Module version: Business process component:	(none)	browse
	Module version: Business process component: Valid from:	(none) <u>LoanApprovalProcess</u> December 22, 2009 3:35:44 PM	browse
	Module version: Business process component: Valid from: Review the changes between version on the <u>Differences</u> tai	(none) (none) (none) (none) December 22, 2009 3:35:44 PM the source and the target process b.	DLowse

- ____b. Now select the **Differences** tab, at the bottom of the LoanApprovalProcess migration specification viewer to review the changes between the source and target process version
  - 1) Select the first change listed, which is the uncritical change, a description update to the CheckAutoApproval activity. Note that the uncritical changes are represented with yellow in color

la Differences	\$ ⁶
<b>Review the Differences between the Source and the T</b> To review the changes between the source and the target of t following list. <u>More</u>	Farget this process migration specification, select an item in the
The CheckAutoApproval activity has been modified. The f The NewActivityCriticalChange activity has been added. The process has been modified. The following attribute w	ollowing attribute was changed: Description. vas changed: ValidFrom.
🗐 LoanApplication2009 👤 LoanApprovalProcess	🗐 LoanApplication2010 👷 LoanApprovalProcess
October 27, 2008 4:50:27 PM	December 22, 2009 3:35:44 PM
Q Q 🛛	Q Q 🖪
Receive	AutoApproval
CheckAutoApproval	AutoApproved Otherwise
Overview Differences	

____ c. Now, select the second change listed, which is the critical change, the addition of a new Data Map to the new process version. Note that the critical changes are represented with green in color

🖕 Differences	÷
Review the Differences between the Source and the To review the changes between the source and the target of following list. <u>More</u>	• Target f this process migration specification, select an item in the
The CheckAutoApproval activity has been modified. The The NewActivityCriticalChange activity has been added. The process has been modified. The following attribute	e following attribute was changed: Description. was changed: ValidFrom.
LoanApplication2009 October 27, 2008 4:50:27 PM	Event LoanApplication2010 LoanApprovalProcess December 22, 2009 3:35:44 PM
Q Q 🛛	Q Q 🛛
	ProcessApplicat
CopyInput	NewActivityCriticalChange
erview Dirrerences	

**Note:** TO update the new process version, you can click the LoanApprovalProcess link, update the process and then click the refresh ( ) icon over top right corner and review the differences.

- ____d. Close the LoanApprovalProcess migration specification viewer
- ____e. Ensure the all the changes have been saved at this point. (File → Save All)
- _____11. The LoanApprovalProcess migration is complete.

# Part 4: Deploy the new process application and migrate the process instances

In this part of the lab, you will deploy the new process version application to the WebSphere Process Server test environment and then migrate the live process instances from the old process version to the new version using the Business Process Choreographer Explorer (BPC Explorer). You will see how uncritical changes to an in-flight process, where the live process current state has already passed where the uncritical change was made, can be successful. Inversely, you will see how the migration specification correctly does not allow migration of live, in-flight process instances where the current state has passed any critical changes.

- Add the new process project to the WebSphere Process Server test environment. Add the LoanApplication2010App project to the test server using the Add and Remove Projects wizard from the server pop-up menu
  - ____a. Right-click on WebSphere Process Server v7.0 under the Servers view and select Add and remove projects... from the context menu
  - ____ b. In the Add and Remove Projects window, click Add> to add the LoanApplication2010App project to the Configured projects text area

🚯 Add and Remove Projects		
Add and Remove Project	cts	
Modify the projects that are con	figured on the server	
Move projects to the right to con	figure them on the server	
Available projects:		Configured projects:
🗉 🛅 LoanApplication2010App		🕀 🔚 LoanApplication2009App
	Add >	
	< Remove	
	Add All >>	
	<< Remove All	
✓ If server is started, publish ch	nanges immediately	
0	<back next=""></back>	Finish Cancel

___ c. Ensure the project is moved to Configured projects text area. Click Finish

____d. Wait while the project is being published to the server

🔀 Task Flows ᢙ Build Activities 🔲 Properties 🔝 Problems 🔞 Server Log	s 해 Servers 🛛	- 8
	参 🜔 🖉	<b>•</b> 🕑   🛅
Server 🔺	State	Status
😹 WebSphere Business Monitor Server v7.0 on WebSphere Process Server	🔚 Stopped	
😑 🔀 WebSphere Process Server v7.0 at localhost	🚡 Started	Publishing
포 🛅 LoanApplication2009App	🖡 Started	Republish
🗉 🛅 LoanApplication2010App		
🖅 🛅 LoanAppTestProjectApp	🖐 Started	Synchronized

e. Once the project is published, from the Servers view, expand WebSphere Process Server v7.0 to view see if the application is started as shown below:

😤 Task Flows ᢙ Build Activities 🔲 Properties 🔝 Problems 🔞 Server Log	s 해 Servers 🛛	
	参 🜔 🖉	🗖 🤨 🖥
Server 🔺	State	Status
😹 WebSphere Business Monitor Server v7.0 on WebSphere Process Server	遣 Stopped	
😑 🔀 WebSphere Process Server v7.0 at localhost	🚡 Started	Synchronized
🗉 🛅 LoanApplication2009App	🖡 Started	Synchronized
🗉 🛅 LoanApplication2010App	🖡 Started	Synchronized
표 🔚 LoanAppTestProjectApp	🐌 Started	Synchronized

Launch the Business Process Choreographer (BPC) Explorer site 2.

____a. In the Servers view, right click over WebSphere Process Server v7.0 and then select Launch → Business Process Choreographer from the context menu

b. Enter the username (admin) and password (admin) and click Login

Alternative: Launch the BPC Explorer site for the Web browser using URL: Ex: http://localhost:9080/bpc

3. In the left navigation pane, click the All Versions link under the Process Templates section



In the All Versions Of Templates panel to the right, you should see two process instances listed, 4. one indicating the old version of LoanApprovalProcess dated 10/27/2008 and the other indicating the new version of LoanApprovalProcess with the current date, similar to the below picture:

All Versions Of Templates Use this page to view all versions of all process templates. 🗓 Instances View Structure Refresh 🔲 Process Template Name 🔿 Valid From 🔿 State 🔿 Namespace 🔿 Application Name 🔿 LoanApprovalProcess 12/22/2009 9:35:44 AM CST Started http://LoanApplicationModule LoanApplication2010App LoanApprovalProcess 10/27/2008 11:50:27 AM CDT Started http://LoanApplicationModule LoanApplication2009App Items per page: 20 💌 Items found: 2 Items selected: 0 << Page 1 of 1 >> IBM WebSphere Process Server V 7.0 - Lab exercise

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**Note:** Remember that you can not start new process instances from the older process version once the newer process version becomes currently valid. The main goal of this enhancement is to allow in-flight migration of the existing process instances created from and old process version to the new process version.

5. Now, in the left navigation pane, click the **Current Valid** link under the **Process Templates** section



6. In the **Currently Valid Process Templates** panel to the right, you should see all currently valid process instances listed. You should see one process instance listed in the view indicating that the new process version you deployed is currently active as shown below:

Currently Valid Process Templates	
Use this page to view process templates on which you can we	ork. 🗉
Start Instance Instances View Structure Refresh	
🔲 🛛 Process Template Name 🗘 Valid From 🗘	Long Running $\Diamond$ State $\Diamond$ Description $\Diamond$
LoanApprovalProcess 12/22/2009 9:35:44 AM CS	T yes Started
Items found: 1 Items selected: 0	< Page 1 of 1 > Items per page: 20 💌

**Note:** A new process version becomes valid from the date of validation you provided when creating the new process version.

- 7. In the left navigation pane, click the **All Versions** link under the **Process Templates** section
  - 8. In the All Versions Of Templates panel to the right, select the check box for old version of LoanApprovalProcess dated 10/27/2008

All Versions Of Templates		
Use this page to view all versions of all proc	ess templates. İ	
Instances View Structure Refresh		
🔲 Process Template Name 🗘 Valid From 🖒	State 🗇 Namespace 🗇	Application Name 🗇 🛛 De
LoanApprovalProcess 12/22/2009 9	35:44 AM CST_Started_http://LoanApplicationModu	ile LoanApplication2010App
LoanApprovalProcess 10/27/2008 1	1:50:27 AM CDT Started http://LoanApplicationModu	ile LoanApplication2009App
Items found: 2 Items selected: 0	< Page 1 of 1 >> Items pe	er page: 20 💌

9. Click the **Instances** button over the top.

10. In the next Process Instances for Process Templates panel, select the check boxes for all the process instances and then click the Migrate button over the top

Process Instances for Process Te	mplates		
Use this page to work with process instances th	at belong to specific proce	ss templates. İ	
Migrate Terminate Delete View Proces	s State Refresh		
₽rocess Instance Name ♦	Process Template Name	🗘 Valid From 🗘	State 🗇
PI:90030125.b374a40a.deb4fcf6.6d9d00df	LoanApprovalProcess	10/27/2008 11:50:27 AM (	CDT Running
✓_PI:90030125.b368b412.deb4fcf6.6d9d0093	LoanApprovalProcess	10/27/2008 11:50:27 AM (	CDT Running
Items found: 2 Items selected: 2	Page 1	of 1 🔜 Items per pag	je: 20 💌
11. You should see one process instance encountered a problem as shown be	e has successfully migratelow:	ed but the other did not and	
Number of problems encountered: 1			
Migrate Terminate Delete View Proces	s State Refresh		
🥅 Process Instance Name 🗘	Process Template Nam	e 🗘 Valid From 🗘	State 🗘
🔇 🗖 _PI:90030125.b368b412.deb4fcf6.6d9d00	93 LoanApprovalProcess	10/27/2008 11:50:27 AM	CDT Running
Items found: 1 Items selected: 0	Page 1	of 1 ->> Items per page	20 💌

The reason why this process instance failed to migrate is because it has already passed the critical change that occurred in the new process instance version. Meaning, the process instance has already passed the new Data Map activity in the LoanApprovalProcess. Remember this instance is started with loan application amount of \$44,000 (< \$50,000) and the application was auto approved, which it already reached the SecondApprovalHumanTask activity but not complete. Hence this instance can not be migrated to the new version.

12. Select the Sever logs view in the lower quadrant of WebSphere Integration Developer to troubleshoot the problem. Scroll down to locate the Log message indication an error as shown below:

🗖 😇 Log message 🔄 Dec 22, 2009 13:41:01.... 000000f4 🔄 CWWBE0198E: The process '_PI:90030125.b368b4....

____a. Double click the log message to open in a dialog to have clear view of the message:

🚯 Propertie	es 📃 🗆 🗙
🤨 , log me	essage 🗘 🖓
Time:	Dec 22, 2009 13:41:01.718 CST
Thread ID:	000000f4
Contents:	• Translated C Raw
	CWWBE0198E: The process '_PI:90030125.b368b412.deb4fcf6.6d9d0093' cannot be migrated to process model 'LoanApprovalProcess' with valid from date 'Tue 2009-12-22 15:35:44.000' because it already passed critical changes.
-	
(?)	OK

b. Click **OK** 

- _ 13. Now, verify the migrated process instance
  - ____a. In the left navigation pane, click the All Versions link under the Process Templates section
  - ____b. In the All Versions Of Templates panel to the right, select the check box for new version of LoanApprovalProcess dated 12/22/2009

All Versions Of Templates		
Use this page to view all versions of all process te	emplates. 🗓	
Instances View Structure Refresh		
🗖 Process Template Name 🗘 Valid From 🗘	State 🗘 Namespace 🗘	Application Name 🗇 🛛 D
LoanApprovalProcess 12/22/2009 9:35:44	4 AM CST Started http://LoanApplication/	Module LoanApplication2010App
LoanApprovalProcess 10/27/2008 11:50:	27 AM CDT Started http://LoanApplicationI	Module LoanApplication2009App
Items found: 2 Items selected: 0	Page 1 of 1 >> Iter	ns per page: 20 💌
c. Click the <b>Instances</b> button over the <b>Instances</b> button over the next <b>Process Instances for</b> process instance as shown below	he top or Process Templates panel, click ove v:	r the name of the
Process Instances for Process Te	mplates	
Use this page to work with process instances the	at belong to specific process templates. I	i
Migrate Terminate Delete View Proces	s State Refresh	
🗖 Process Instance Name 🗇	Process Template Name $\diamondsuit$ Valid From $\diamondsuit$	🗘 💦 State 🗘
PI:90030125.b374a40a.deb4fcf6.6d9d00df	LoanApprovalProcess 12/22/2009	9:35:44 AM CST Running

____e. In the next panel, review the process description. You should see the process instance is marked as migrated and the Valid From date is current

<<

Page 1 of 1

>>

Items found: 1 Items selected: 1

Items per page: 20 💌

Process Instance Use this page to view inform the process instance. []	ation about a process instance and, optionally, to work on
Terminate Suspend V	Vork Items Create Work Items View Process State T
Process Description	
Process Instance Name Description State Migrated	_PI:90030125.b374a40a.deb4fcf6.6d9d00df Running <b>yes</b>
Details Process Inp Process Instance ID Process Template Name Process Template ID Valid From	ut Message Activities Waiting Operations Related P PI:90030125.b374a40a.deb4fcf6.6d9d00df LoanApprovalProcess PT:90010125.b7c5509c.deb4fcf6.6d9d012f 12/22/2009 9:35:44 AM CST
Starter Administrators Readers Created Started Resumes Parent Name	admin admin 12/21/2009 4:56:23 PM CST 12/21/2009 4:56:23 PM CST
Top-Level Name	_PI:90030125.b374a40a.deb4fcf6.6d9d00df

_____f. Now, click the **View Process State** button over the top. You should see two process templates mentioned. Template 1 indicates the old version in a light bluish gray color and Template 2 indicates the new version from where the critical change has occurred in white color



- 14. Complete all the process instances
  - ____a. In the left navigation pane, click the My To-dos link under the Task Instances section



_____b. In the **My To-dos** panel to the right, you should see two process task instances listed, one indicating manual approval and the other indicating human task approval as shown below:

admin

Items

>>

Mv To-dos					
Use this page to	) work on tasks that are assign	ied to you	. 1		
Work on Re	elease Transfer Start C	hange Bus	iness Catego	ry Refres	h
🔲 Priority 🗇	Task Name 🗘	State 🔿	Kind 🗇	Owner 🗇	Originator 🗘
5	ManualApprover	Ready	To-do Task		admin
5	SecondApprovalHumanTask	Ready	To-do Task		admin
Items found: 2	Items selected: 0		Pag	ge 1 of 1	>>> Items
c. Select the c	heck box for ManualApprove	er task			
My To-dos					
Use this page to	work on tasks that are assign	ed to you.	i		
Work on Re	lease Transfer Start C	hange Bus	iness Categor	ry Refres	h
🔲 Priority 🗇	Task Name 🗘	State 🗘	Kind 🗇	Owner 🗘	Originator 🗘
✓ 5	ManualApprover	Claimed	To-do Task	admin	admin
5	SecondApprovalHumanTask	Claimed	To-do Task	admin	admin

SecondApprovalHumanTask Claimed To-do Task admin

<<

Page 1 of 1

```
Items found: 2 Items selected: 1
```

- ____d. Click the Work on button
- ____e. In the next Task Message panel, click the Complete button
- ____f. Similarly complete the SecondApprovalHumanTask task to complete all tasks and keep the BPC DB clear for the next lab.
- _____15. Logout of the BPC explorer

#### Part 5: Save work and clean up server

Export project as Project Interchange file. Switch to the 'Business Integration' perspective (Window  $\rightarrow$  Open Perspective  $\rightarrow$  Other and then select 'Business Integration')

- 1. In WebSphere Integration Developer, Navigate to File → Export
- _____2. Expand Other and select Project Interchange from the tree. Click Next
- 3. Out of all the projects listed, you only need to add a check next to four projects LoanAppTestProject LoanApplication2009 LoanApplication2010 LoanApplicationLibrary

All other projects are generated upon import of the project interchange

- 4. Save in C:/LabFiles70/WPS/ProcessMigration/solution
- 5. Name the project interchange WPIv70_WPS_Finished_ProcessMigration_PI.zip

## What you did in this exercise

This lab provided you with an understanding of how to migrate a business process template using WebSphere Integration Developer V7.0, deployed the new business process template version to the process server and then migrated live, in-flight process instances from the older business process template version to the new business process template version at run time using the Business Process Choreographer Explorer.

## **Solution instructions**

- _____1. Import Solution Project Interchange file
  - ____a. With a blank workspace in WebSphere Integration Developer, Go to File → Import → Project Interchange
  - ____b. Click top Browse button and navigate to <LAB_FILES>/solution/WPIv70_WPS_ProcessMigration_PI_Solution.zip
  - ____ c. Select all the 6 project listed
  - ___ d. Click Finish button
- _____2. Continue from here

## 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.

Create a new remote server.

- _____1. Define a new remote server to WebSphere Integration Developer.
- _____2. Right click the background of the **Servers** view to access the pop-up menu.
- ____ 3. Select New → Server.

Build Activities Properties Problems 👭 Servers 🔀		🌣 🕐 🖉 🐁 🔳 🖽 🗖
Server	Status	State
WebSphere Process Server v6.1	🛅 Stopped	Republish
	New	🕆 Server
	音 Add and Remove Projects	
		_

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



#### ____6. Click Next

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

🚯 New Server		×	
WebSphere Server S	ettings		
Input settings for the new	WebSphere server.		
WebSphere profile name:		~	
Server connection type a	nd admin port		
ORMI (Designed to impr	rove communication with the server)		
ORB bootstrap port:	2809		
• SOAP (Designed to be	more firewall compatible)		
SOAP <u>c</u> onnector port	: 8880		
Run server with resource	es within the workspace		
Security is enabled on t	his server		
Current active authen	tication settings:		
User <u>I</u> D:	ssadmin		
Pa <u>s</u> sword:	•••••		
Server na <u>m</u> e:	sssr011		
Server type			
• BASE, Express or unm	anaged Network Deployment server		
Network Deployment :	server		
Network Deployment	server name:		
The server name is i <cell name="">(<cel< th=""><td>n the form of: ide name&gt;(<server name=""></server></td><td></td></cel<></cell>	n the form of: ide name>( <server name=""></server>		
For example, localho	ist/localhost/server1. In a cluster environment,		
the server name is in the form of: <cell name="">/<cluster name=""></cluster></cell>			
Detect Click this button to detect the server type			
?	< Back Next > Einish	Cancel	

#### 8. Click Finish.

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

auild Activities Properties Problems 🖧 Servers 🛛		🌣 🖸 🖉 🖗 🔳 💾 🗖
Server	Status	State
🛅 WebSphere Process Server v6.1	🛅 Stopped	Republish
🎇 WebSphere Process v6.1 Server @ mvsxxx.rtp.raleigh.ibm.com	遣 Stopped	Republish
	Te propped	Republish

- 10. 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>'

userid : **<USERID>** 

password : <PASSWORD>

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

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

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

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

ADMU3200I: Server launched. Waiting for initialization status.

ADMU3000I: Server cllsr01 open for e-business; process id is 000001200000002