IBM BUSINESS PROCESS MANAGER 7.5.1 – LAB EXERCISE

Developing BPEL that invokes a BPD Straight-through processing scenario

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What this exercise is about

IBM Business Process Manager Advanced (BPM) V7.5.1 is a single BPM solution that combines the best of breed human-centric and integration-centric capabilities into a unified platform.

When developing a business process that uses services between Process Designer and Integration Designer, there are three main scenarios.

Top-down: In this scenario the process developer defines the interface for the service to be called and the integration developer will then create the implementation based on the interface provided. This *top down* approach works well when the service does not already exist.

Bottom-up: The integration developer creates the service interface and the service implementation and then makes them available to the process developer. This *bottom up* approach works well when there is already a mature SOA architecture with reusable services.

Straight-through processing (STP): The main point to the Straight-through processing scenario is for a BPEL process with human interaction to call a business process definition (BPD). For version 7.5.1, the STP scenario integrates both legacy WebSphere Process Server functionality (BPEL) and legacy WebSphere Lombardi Edition functionality (BPD) into one runtime. The integration of a WebSphere Process Server BPEL and WebSphere Lombardi Edition processes can be achieved with existing web service technology. However, the new integration capability offered with version 7.5.1 is the support of the Service Component Architecture (SCA) standard by WebSphere Lombardi Edition. The SCA integration between WebSphere Process Server and WebSphere Lombardi Edition is explained, demonstrated, and executed with the sample documented in the exercise.

Lab requirements

These following products are required to run this exercise:

- IBM Business Process Manager V7.5.1 Server with IBM Process Center V7.5.1 stand-alone profile
- IBM Process Designer V7.5.1
- IBM Integration Designer V7.5.1
- DB2 V9.7.3 or higher

Throughout the lab, references to these products drop the IBM prefix and the version, calling them Process Center, Process Designer and Integration Designer.

What you should be able to do

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

- As the integration developer using the Integration Designer
 - Create a human centric BPEL process
 - Integrate a BPD into a BPEL process and work with SCA artifacts associated with the BPD
 - o Refresh and Publish to the Process Center
 - Use the BPC Explorer to drive/start the STP scenario
- As the process developer using the Process Designer
 - o Create a Process Application
 - Create a process application and simple business process that uses a Coach
 - Correctly pass data through the process
 - Test the process application using the Process Inspector.
 - Use the Process Portal to work with the Coach

Introduction

The development of a solution demonstrating the interaction of two different process development environments involves the development of processes by two user roles (personas). First, the Business Author or Process Designer named Bob, who uses the IBM Process Designer (IPD), formerly known as Lombardi Authoring Environment (AE). Second, the IT Developer or Integration Specialist named Igor, who uses the IBM Integration Designer, formerly known as WebSphere Integration Developer. IBM Integration Designer was enhanced in such a way that it provides a new perspective named Process Center perspective. This allows interacting with and retrieving artifacts from the Process Center by several developers for a given project rather having the project stored locally in a developers WebSphere Integration Developer workspace. The Process Center is the central repository to store, access, and manage process artifacts held together as a single project called a process application.

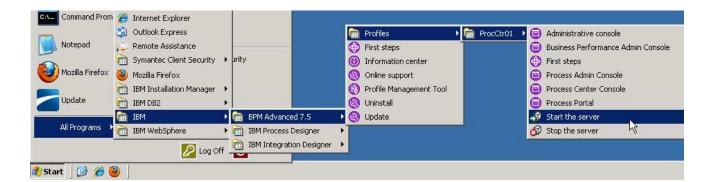
In this exercise you will learn how to use the *straight-through processing* approach for integrating a *Business Process Definition* into your human centric BPEL business process.

Part 1: IBM Process Designer – Build a human centric process

In this part of the lab exercise, you will start the Process Center and open the IBM Process Designer to start the scenario

A basic outline of this part is:

- Start the Process Center server
- Open the Process Designer development environment
- Build a human centric business process definition (with a Coach)
- _____1. Start IBM Process Center V7.5.1
 - ____a. Select Start → All Programs → IBM→ BPM Advanced 7.5 → Profiles → ProcCtr01 → Start the Server



_ b. Wait for the server to start, which can take a few minutes. While it is starting, you should see the following window:



c. When the server startup completes, you will see some additional messages in the window and then it will then close automatically. When the window disappears, you are ready to continue.

- Start Process Designer
 - ____a. Select Start → All Programs → IBM → IBM Process Designer → IBM Process Designer 7.5.

	🛅 IBM Installation Manager				
Update	m IBM DB2	→			
	💼 IBM	• 🖻	BPM Advanced 7.5	►	
All Programs 🕨	iBM WebSphere	• 🛅	IBM Process Designer	►	🔁 IBM Process Designer 7.5
	💋 Log O	_{FF} 💼	IBM Integration Designer	►	🔁 Uninstall 🛛 🤟
	<u></u>	<u> </u>	• •		🔁 Update
🏄 Start 🛛 🚱 🍎 🏺	2				

____b. Enter the credentials (admin/admin are the default credentials, enter appropriate credentials for your Process Center)

User Name:	admin
Password:	admin

and then click Login.

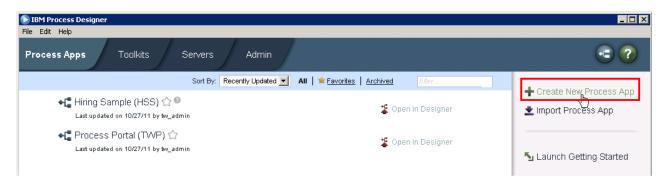
	IBM.
IBM Process Designer	
User Name admin	
Password	
Login Cancel	
7.5.1	

_____ c. If this is the first time you launch the Process Designer, you may see a **SSL SIGNER EXCHANGE PROMPT** dialog pops up. This message occurs when the WebSphere Application Server SSL configuration has changed and the client does not trust the new or changed SSL certificate.

Just click **y** to add singer to the trust store.

<u>3.</u> Create new process application and open in Designer

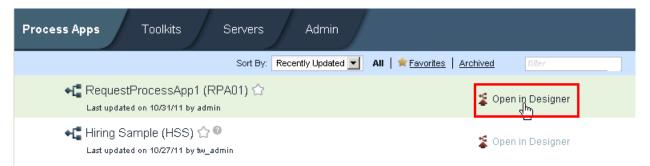
____a. On the right side task menu select Create New Process App



____b. In the Create New Process App wizard, type in the Process App Name text box RequestProcessApp1 and then RPA1 in the Acronym text field. Click Create.

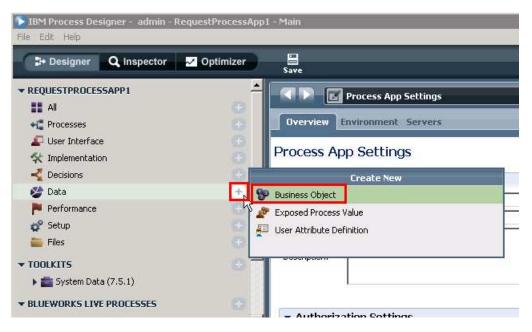
Create New Process App	×
Process App Name: RequestProcessApp1	
Acronym: RPA1 Description:	
	4
	Create

__ c. The first entry should be the RequestProcessApp1. Click the **Open in Designer** link parallel to RequestProcessApp1.



- 4. Create a Business Object with parameters
 - ____ a. Once Process Designer is open, your first task is to define the business objects that will be passed in the process.

Click the + sign icon next to Data in the list of options to bring up the Create New menu. Click Business Object.



____b. Name the new business object RequestBO and click Finish.

🜔 New Bu	siness Object		
Business (ness Object bjects represent that data t running of a process.	hat is used	
Name:	RequestBO		
		Finish	Cancel

____ c. The Business Object editor opens. The main task in this editor is to define the structure and parameters to the business object. You will accept the default definition type of Complex Structure Type and add these parameters:

requestNumber (Integer) requestDescription (String) requestApproval (Boolean)

1) Click **Add** under Parameters and then type in **requestNumber** for the name in the parameter properties

		 Parameter Properties 		
⊜ requestNumber (String)	Add Remove	Name: Is List: Variable Type:	requestNumber	
Advanced Properties	Down	Documentation: Advanced I	Parameter Properties	

2) Underneath the Parameter Properties section, you want to change the type of the parameter from the default string to an integer.

Click Select and then click Integer in the list

*hint: you can start typing the name of the type that you want and the list will auto-filter.

	 Parameter Properties 							
Add	Name:	requestNur	nber					
Remove	Is List:				L			
	J Variable Type:	😵 <u>String</u>	System Data	Select	New			
Up	Business Ubjects			2U 🔺	*			
Down	PANY System Data	1						
	🂱 Boolean 🛛 <mark>System</mark>	Data			T			
	😵 ConditionalActivit	y System Dat	3					
	😵 Date 🛛 System Dat	a						
	💱 Decimal 🛛 System I	Data			=#			
	😵 IndexedMap 🛛 Sy:	stem Data						
	💱 Integer 🛛 System I	Data N						
	💱 Map 🛛 System Data	1 15						

3) Repeat steps 1 and 2 from above (click **Add**, name parameter, select parameter type) in order to add two more parameters.

Click Add, type requestDescription for the name and leave the default type of String.

Click **Add**, type requestApproval for the name. Click **Select** for the parameter type and click Boolean.

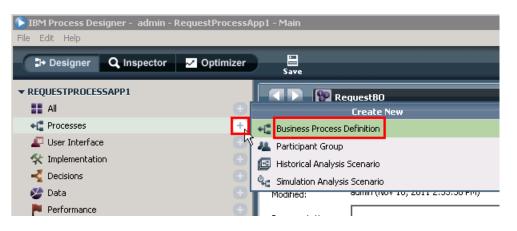
At the end you should see these three parameters

✓ Parameters	 Parameter Properties 		
 requestNumber (Integer) requestDescription (String) requestApproval (Boolean) 	Add Remove	Name: Is List: Variable Type:	requestApproval Boolean System Data Select
	Up Down	Documentation:	

4) Click **Save** to save the business object and its parameters.



- 5. Create a Business Process Definition (BPD) to wrap the initial approval coach.
 - ____a. Click on the + sign next to Processes and click Business Process Definition



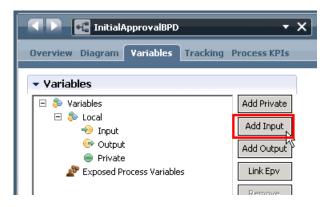
____b. Enter InitialApprovalBPD for the name of the new Business Process Definition. Click Finish.

New Business Process Definition	
New Business Process Definition A business process definition (BPD) is a reusable model of a process, defining what is common to all run-time instances of that process model.	+- ♠
Name: InitialApprovalBPD	
Finish	Cancel

_____ c. The BPD Diagram opens, however the first thing you need to do is set the data that the BPD will be transferring through the process. In order to take action on setting the data, click the **Variables tab** to add input and output variables.

	TnitialApprovalBPD 🔹 🗙						
Ov	verview	Diagram	Variables	Tracking	Process KPIs		
Participant		Start	W.				End

____d. Under the Variables tab, click Add Input.



____e. Type reqBO for the name, click Select..., and click RequestBO

	 Details 				
e	Name:	reqBO			
t Jt	Documentation:				*
	Is List:				
	Variable Type:	😵 <u>String</u>	<u>System Data</u>	Select	New
Bus	siness Ubjects			49 🔺	
89	ANY System Data				
99	Boolean System Dat	a			*
89	ConditionalActivity	System Data			
99	Date System Data				
89	Decimal <mark>System Data</mark>	1			
99	IndexedMap <mark>System</mark>	n Data			
80	Integer System Data	1			-
99	Map System Data				
99	NameValuePair <mark>Sys</mark> t	em Data			
99	Record System Data				
99	RequestBO				
99	SLAViolation	System Data			

____f. Click Add Ouput, and again type in reqBO for the name (since in this process you want to pass the same data through the process), click Select... and click RequestBO again.

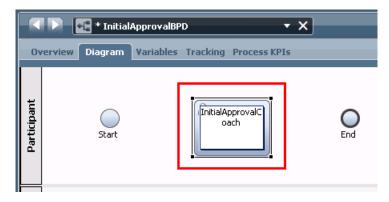
Your BPD input and output should now look like this:	

🔹 🕨 💽 🐮 InitialApprovalBPD	• ×		🖾 😋 🜔
Overview Diagram Variables Tracking Proc	ess KPIs		
▼ Variables		🕶 Details	
🗆 🕭 Variables	Add Private	Name:	reqBO
E 🔣 Input	Add Input	Documentation:	<u></u>
□ → reqBO (RequestBO) ● requestNumber (Integer)	Add Output		
 requestDescription (String) 	Link Epv		
 requestApproval (Boolean) Image: Image: Image:	Remove		
 reqBO (RequestBO) requestNumber (Integer) 	Move Up		
requestDescription (String)	Move Down	Is List:	
 requestApproval (Boolean) Private 		Variable Type:	PRequestBO Select New
Exposed Process Variables		 Business D. 	ata Search

____g. Click back on the **Diagram tab** and click the **Activity** icon from the right palette. Click in the middle of the editor between the Start and End activities in the Participant swim lane.

System 2	K	ThitialApprovalBPD X	a 💁 D
System Participant	0,	verview Diagram Variables Tracking Process KPIs	
	Participant	Start End	<u>►</u>
	System		Activity Activity unit of comple system execut

____h. This action will drag an Activity and drop it on the BPD editor. Once the activity is dropped on the editor, the direct name editor highlights the default "Untitled" name, enter "InitialApprovalCoach" as new name.



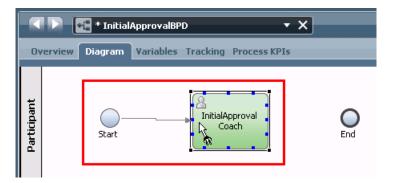
_____i. In the properties tab at the bottom of Process Designer, change the presentation color of the activity to **Green**.

Properties Validation Errors Where Used					
General	- Common				
Simulation	Name: InitialApprovalCoach				
Implementation	Presentation: Color C Icon				
Routing					
Data Mapping	Presentation Color: Default				
Pre & Post	Help Topic: Red				
KPIs	System ID: bp(Orange Vellow				
Condition	Documentation:				
	Purple				
	Gray				

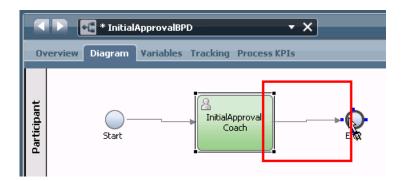
____j. Once you have set the properties, it is time to connect or wire the business process together. Select the **Sequence Flow** icon in the right palette..

Sequence Flow

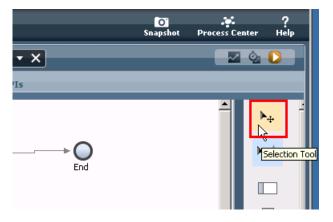
____ k. Click the right side of the Start icon to start the wire, then move the pointer to the left side of the InitialApprovalCoach and click to complete the wire, connecting the two.



I. In the same fashion, click the right side of the InitialApprovalCoach and then the left side of the End icon.



____m. Click the **selection tool** to be able to select items in the editor and to prepare for the next step



____n. Right-click InitialApprovalCoach and select Activity Wizard...

	ド 📲 * InitialApprovalBPD 🔹 🗙	i 💁 D
Ov	erview Diagram Variables Tracking Process KPIs	
nt		▶⊕ 2
Participant	Start	
	Create SLA	
	Guided Optimization 🕨	
u		

____ o. Since you named the Activity appropriately in the previous step, you will see that the Activity Name and New Service Name are already filled in.

For the **Activity Type**, you will leave the default of a **User Task** because you want this initial approval to be approved by a human being and not automated with a business rule.

For the **Library Element Selection**, leave the default of **Create a New Service or Process** selected because you want to create this new initial approval coach. Click **Next**.

Activity Wiz	rd					
Activity Wiz	Activity Wizard - Setup Activity					
	/ type. If you select a User Task, Sy st select a service or process.	/stem Task, Decision	n Task, or 👘			
Activity Name	(nitialApprovalCoach					
Activity Type	User Task					
Activity Type	election					
User Task	ystem Decision Script	Sub Linked	Event Sub None			
	Task Task pr	rocess Process	process			
Library Elemer						
_	w Service or Process					
	tialApprovalCoach					
O Attach an	xisting Service or Process					
<	none>		Select			
L						
	< Back	Next > Fi	inish Cancel			

_____p. The second screen of the Activity Wizard is where you need to define the business objects that a BPD will use before designing the process. The input and output business objects have already been defined in the wizard due to your previous work. Leave the defaults of the inputs and outputs both being true for this business activity since you want the business object to be passed into the activity and out of the activity. Click **Finish**.

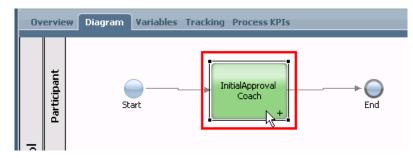
🕞 Activity Wizard					
Activity Wizard - Parame	eters				
If you are creating a new servic pass to it.	e or process, yo	u can set up which	variables	to	
Setup parameters:					
Business Process Variable				Input	Output
📀 requestBO (RequestBO)				true	true
1					
	< Back	Next >	Finish		Cancel

NOTE: You can click the "true" to change to false if needed. It is not needed in this scenario.

____q. In the Properties view, select the Data Mapping tab. The Activity Wizard should automatically generate the mapping for both **input** and **output**.

 Input Mapping 	 Output Mapping 	ل ې
tw.local.requestBO 🔩 🗢 requestBO (RequestBO)	<u>requestBO (RequestBO)</u> 🔿	tw.local.requestBO 🔍

____r. Double click the InitialApprovalCoach activity to look at the Coach



____ s. The Activity added one Coach. Take a look at variables that will end up passing through the Coach by clicking on the Variables tab.

Overview Diagram	Variables Co	aches	
	1		
		2	
	}►	Coach	───
Star	C.		

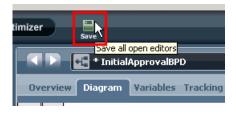
_____t. In the variables tab, you will notice the same input and output variables you defined for the BPD. Take a look at what the coach will look like by clicking on the **Coaches** tab.

< 🕨 🔣 InitialApprovalCoach	• X
Overview Diagram Variables Coache	s
▼ Variables	
🗆 🕭 Variables	Add Private
🗆 📚 Local 🖃 衫 Input	Add Input
🕀 🥪 reqBO (RequestBO) E 🍉 Output	Add Output
🕀 🌝 reqBO (RequestBO)	Link Epv
Private Exposed Process Variables	Link Localization
Localization Resources	Remove

____u. On the Coaches tab, click the **Coach** icon on the left of the editor to see and customize your human task form. (it may take a few seconds for the human task form to appear)

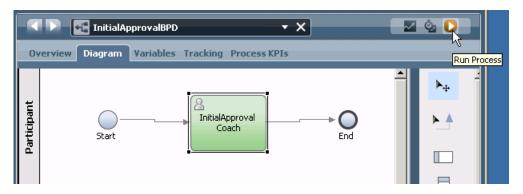
Overview Diagran	Variables Coaches		
Coach	InitialApprovalCo Req B O Request Number: Request Description: Request Approval:	oach	Sections Cone-Column with Title One-Column Two-Column Two-Column Three-Column Button Group Text Text Combo Group List Combo Box List Variables Variables
			→ valiables

v. Click **X** that on the right side of **InitialApprovalCoach** human service, and get back to InitialApprovalBPD. Then click **Save**.

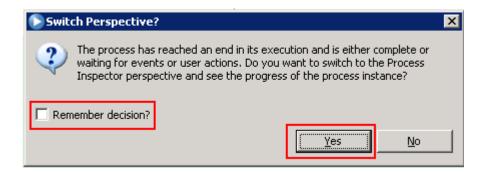


You are now done with building a Business Process Definition that has one human service (coach).

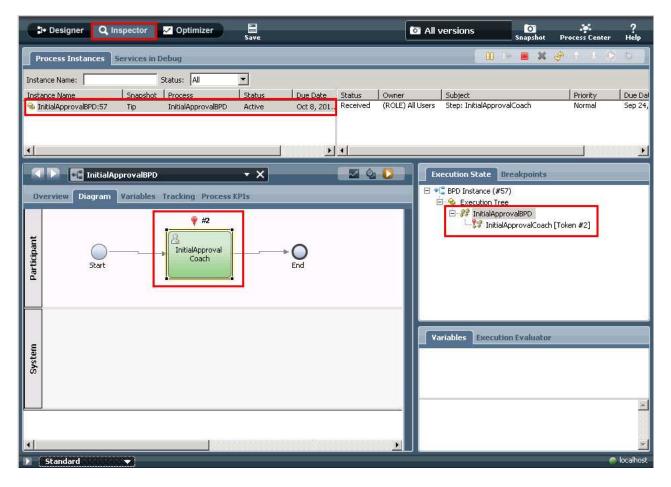
6. Test the BPD before integrating into a BPEL process a. Click **Run Process** to playback your current BPD.



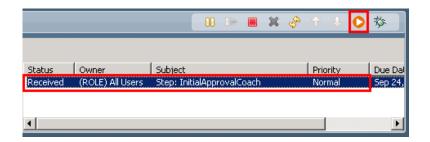
b. On the Switch Perspective? pop-up dialog select Yes. You also check Remember decision? if you want to switch to Inspector view for all BPD tests in the future.



After you click Yes the Inspector view will open



____ c. In the task list select the InitialApprovalCoach task and click Run the selected task icon.



_____d. Select the user that should execute this task. For the purposes of this lab, select **admin** and **select OK.**

Pick User From Role		×
The task you want to run is owned by a Rol that role to run this task as.	e. You need to sele	ect a user in
admin		
	ОК	Cancel

____e. A browser pops up to enter the request details. Enter **1** for the requestNumber, **test** for requestDescription, and leave the requestApproval unchecked. Click **Ok**.

🕹 InitialApprovalCoach - Mozilla Firefox	
Eile Edit View History Bookmarks Iools Help 💽 🔨 🚅 🏫 🖡	1 I I
🗋 InitialApprovalCoach 🛛 🕂	
InitialApprovalCoach	_
Req B O	
Request Number: 1	
Request Description: test	
Request Approval:	
	× ·

_____f. You should see "**The service has finished**" on the browser. Close the browser window by clicking the **X** at the top right of the browser.

🙂 T	he ac	tivity	has finis	hed - Mozil	la Firef	ох					1-	
File	Edit	⊻iew	Hi <u>s</u> tory	<u>B</u> ookmarks	<u>T</u> ools	<u>H</u> elp	<	3 4	C	Â	-	
	The	activi	ty has fir	nished		1						
Th	e sei	rvice	has fin	ished.								

7. You are finished building your BPD and Coach and ready to close Process Designer and open IBM Integration Designer to build and associate the BPEL that will call this BPD.

Close IBM Process Designer by clicking the **X** at the top right.

Part 2: IBM Integration Designer – Implementing the STP process application

In this part of the lab exercise, you play the role of the integration developer, Igor, and work within the IBM Integration Designer development environment. A basic outline of this part is:

- Start IBM Integration Designer, connect to Process Center, and import Process App
- Create a human centric BPEL application to call both a BPD and Human Task.
- Synchronize with Process Center
- 1. Start IBM Integration Designer in a new workspace, connect to the Process Center and import the Process App
 - _____a. Start IBM Integration Designer by selecting Start → All Programs → IBM Integration Designer → IBM Integration Designer 7.5.

📻 IBM Lotus Widg	et Factory 🔹 🕨			IBM Integration Designer 7.5
All <u>P</u> rograms 🕨 🛅 IBM	۱.	BPM Advanced 7.5	۱ 🧕	IBM Support Assistant
	🔎 Log Off 🛛 🚺 Shi	BPM Advanced - Process Server 7.5	۱ 🙆	Uninstall
	🖉 Eog on 🔽 Diri	💼 IBM Integration Designer	ا 🕑) Update
🎒 Start 🧊 放 🍋 🍪	k. 🏹	iBM Process Designer	▶⊤	
	w 📁 🕐			

b. In the Workspace Launcher dialog, enter C:\AppDev\WorkSpaces\Tutorial-STP for the workspace location and select OK.

🚯 Workspace Launcher		×
Select a workspace		
IBM Integration Designer 7.5 stores your projects in a folder called a workspace. Choose a workspace folder to use for this session.		
Workspace: c:\AppDev\WorkSpaces\Tutorial-STP	•	Browse
Lese this as the default and do not ask again		
	ОК	Cancel

When opening with a new workspace, Integration Designer will initially open to the default Business Integration perspective but quickly switches to the Process Designer perspective in order to login to the Process Center. Logging into the Process Center first is important because you need to connect to the Process Center in order to have a target for where your work will be published. The Process Center server must be running to perform this step.

NOTE: The Process Center perspective in the Integration Designer is the integration developers' interface to the Process Center. When a process application is opened in the Integration Designer workspace, it is represented from the implementation point of view. This is different than the process application representation from the modeling point of view when it is opened in the designer view of the Process Designer.

____ c. Type this URL and these credentials into the Process Center Connection Details prompt and click Login. (enter the appropriate URL and credentials for your Process Center) Process Center URL: <u>http://localhost:9080/ProcessCenter</u>

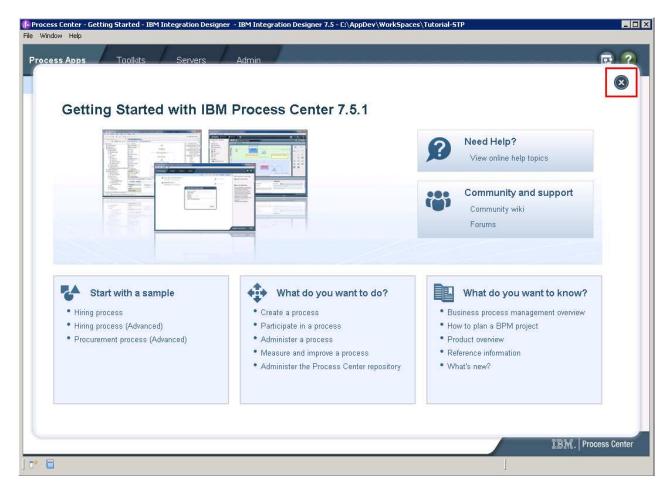
Username: admin Password: admin

Process Center Login	×
Log in to start working with Process Center or c Integration perspective.	ancel to switch to the Business
Process Center URI: Example: http://server:port/ProcessCenter	
http://localhost:9080/ProcessCenter	
User Name:	
admin	
Password:	
•••••	
	Login Cancel

Note: If you see Security Storage dialog after clicking Connect, select No.

		_
🚯 Secu	re Storage	×
?	A new master password has been created. Password recovery can be enabled by providing additional information. Would you like to do so now?	
	<u>Y</u> es <u>N</u> o	

_____d. Click the X on the welcome dialog in the Process Center perspective to close the welcome dialog.



____e. This next step is important. There will be a good amount of work going on in the background after your selection

🚯 Process Center - Getting Started - IBM Integration Designer - IBM Integration Designer 7.5 - C:\AppDev\WorkSpaces\Tutorial-STP _ 🗆 🗡 Window Helr ? **Process Apps** Toolkits Servers Admin Sort By: Recently Updated 💽 All | 🚖 Favorites | Archived + Create New Process App 📲 RequestProcessApp1 (RPA01) 🏠 Spen in workspace 👱 Import Process App Last updated on 10/31/11 by admin 📲 Hiring Sample (HSS) 🏠 🎱 🌋 Open in workspace Last updated on 10/27/11 by tw_admin Number Launch Getting Started 📲 Process Portal (TWP) 🔿

Click on the **Open in workspace** link parallel to RequestProcessApp1 (RPA1).

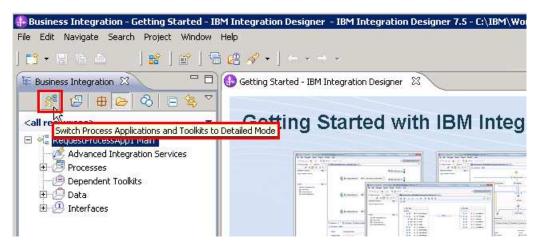
What this action does is connect to the Process Center and imports content from the process application you created in the previous step. You will see the following dialog while the import takes place

Progress Information	
Connecting to process center.	
	Cancel

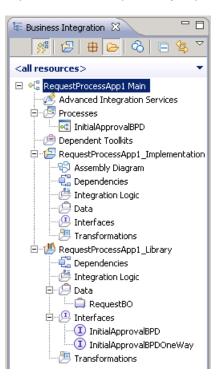
____ f. You will be prompted to choose which Process Applications or Toolkits associated with the RequestProcessApp1 you want to open in the workspace. Keep defaults and click OK.

🚯 Open Process Applications or Toolkits in Workspace 🛛 🔀
Select process applications or toolkits to open in the workspace:
 RequestProcessApp1 RequestProcessApp1_Implementation (to be initialized) RequestProcessApp1_Library (to be initialized)
Select All Select Required Only OK Cancel

____ g. Switch to **Detailed Mode**. This step is important to be able to work with BPEL content.



___h. Inspect what was imported by expanding all.

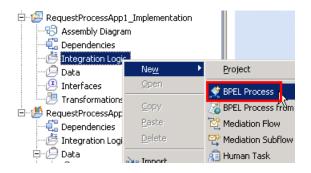


Process App is the top-level project.

No Advanced Integration Services (AIS) or dependent toolkits in this scenario. BPD was imported successfully as part of the Process App. The Process App has two automatically generated projects. RequestProcessApp1_Implementation will hold the BPEL. RequestProcessApp1_Library holds the interface and business objects used by the implementation project.

2. Create a human centric BPEL application to call both a BPD and Human Task.

____a. Right click Integration Logic beneath RequestProcessApp1_Implementation and select New > BPEL Process



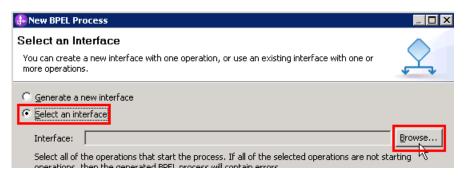
____b. Enter RequestBPEL as the Name and click Next.

🚯 New BPEL P	Process	_ 🗆 🗙
Create a Bl	PEL Process	
Create a new	BPEL Process.	Y.
		_
<u>M</u> odule:	RequestProcessApp1_Implementation Browse New	
Name <u>s</u> pace:	http://RequestProcessApp1_Implementation	
F <u>o</u> lder:	Browse	
N <u>a</u> me:	RequestBPEL	
0		. 1
0	<u> </u>	ancel

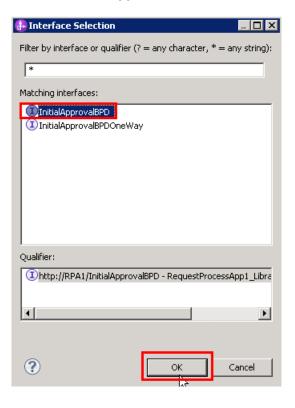
____ c. Click **Next** to keep the default of a long-running process for this example.

🚯 New BPEL Process					
BPEL Process Type Sele Select whether the process sh	rction nould be of type long-running or microflow.				
 Long-running process Long-running processes involve services that do not respond immediately, run over a period of time, and can involve people Use IBM Process Server extensions, for example human workflow or Java support. 					
C Microflow	Microflow processes run automatically from start to finish. It cannot involve people.				
?	< Back Next > Finish Cancel				

_____d. For this BPEL process, you want to use the interface that was imported from Process Center. Select the **Select an interface** option and click **Browse** to find the interface.



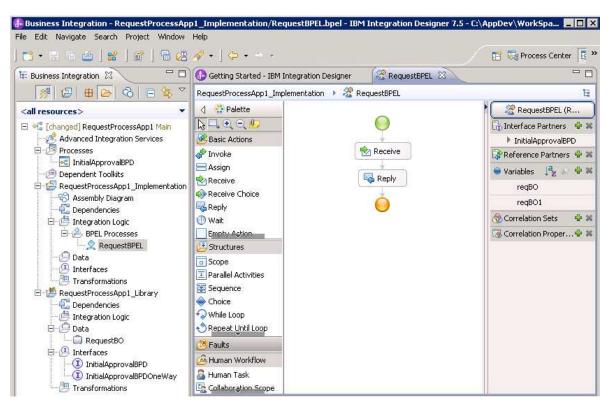
____e. Select the InitialApprovalBPD interface and click OK.



____f. Click **Finish** to finish selecting InitialApprovalBPD interface.

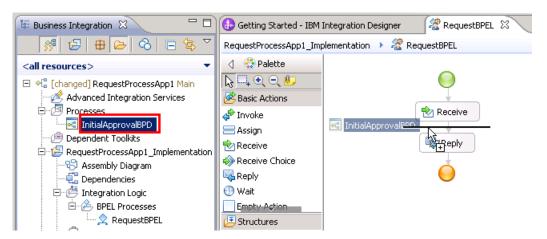
🚯 New BPEL Pr	rocess	
Select an In You can create more operation	a new interface with one operation, or use an existing interface with one or	2
○ <u>G</u> enerate a		
Interface:	InitialApprovalBPD	Browse
	the operations that start the process. If all of the selected operations are not start then the generated BPEL process will contain errors.	ing
	Select <u>A</u> ll	
?	< <u>B</u> ack Mext > Einish	Cancel

____g. Inspect what was generated



3. Drag and drop the BPD into BPEL

____a. Click and drag the **InitialApprovalBPD** in the Business Integration view to the BPEL diagram and unclick between the Receive and Reply activities.



__ b. Click Yes

🚯 Creat	e Assembly Artifacts	×
$\mathbf{\mathbf{\mathcal{O}}}$	Invoking a Business Process Definition from a BPEL process requires the creation of an SCA Import. Both the Business Process Editor and the Assembly Diagram need to be saved. Do you want to continue?	
	<u>Yes</u> <u>N</u> o	

_ c. Error markers appear after the project builds because the input and output variables have yet to be identified, similar to Process Designer where you defined the input and output parameters for the BPD.

Select the InitialApprovalBPDInvoke \rightarrow Properties \rightarrow Details. Inside Inputs row Read from Variable field, click none. Change to reqBO because you want to pass through the same business object throughout this example process.

🚯 Getting Started - IBM Ir	tegration Designer	RequestBPI	EL 🕅		- 8)
RequestProcessApp1_Imple	ementation 🔸 🔏 Re	equestBPEL			Ę
👌 👯 Palette					RequestBPEL (R
$\overline{\mathbb{Q}} = \overline{\mathbb{Q}} = \overline{\mathbb{Q}}$					🕼 Interface Partners 🛛 💠 🕱
Basic Actions					InitialApprovalBPD
🗬 Invoke		🔁 Rece	ive		🕼 Reference Partners 🐇 🕷
Assign			•		InitialApprovalBPDPartr
🕒 Structures		📌 InitialApprova	alBPDInvoke		😌 Variables 🛛 🎝 🎝 🏶 🕷
Scope	18				reqBO
Parallel Activities		Rep	лу		reqBO1
Faults					🚷 Correlation Sets 🛛 👙 🕱
🙆 Human Workflow		U			Correlation Proper 🖗 🗱
🚨 Human Task					
	motions /		N/6- X	lar N	
器 Task Flows 🙆 Build A	ctivities 📃 Propertie	🛛 🔀 🚺 Prob	lems 📋 Server Logs	Servers	e - D
🗳 Invoke - InitialAp	provalBPDInvok	B			
Description	Partner:*	InitialApprova	IBPDPartner Browse		
Details	Interface:*	InitialApproval	BPD		
Server	Operation:*	invoke			
Administration	Use data type	variables mapping			
Exit Condition					
Compensation		Name	Туре	Read fro	om Variable
Correlation	DI Inputs	reqBO	RequestBO	Inone	
Expiration		Name	Туре	Ste i	Browse
Environment	Cutputs	reqBO	RequestBO	L)	New
Event Monitor		• • • • • • • • • • • • • • • • • • • •	- Character Character		ereqBO : RequestBO
Global Event Settings				2000	😑 reqBO1 : Requé§tBO
	•				

Set the output to reqBO as well. Now you should have this...

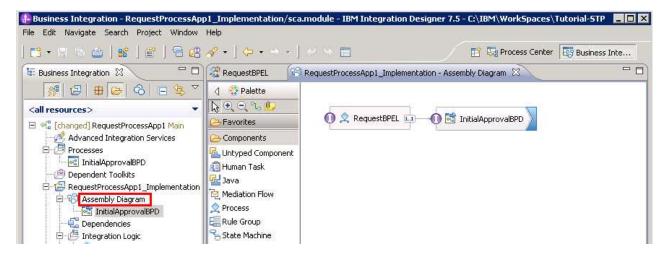
🔠 Task Flows 🙆 Build Ac	tivities 🔲 Properties	🛛 🚼 Proble	ms) 🤠 Server Log	s 😽 Servers		🖻 ^{_}
📌 Invoke - InitialAp	provalBPDInvoke	1				
 Details	Partner:*	InitialApprovalE	PDPartner <u>B</u> row	wse		
Server	Interface:*	InitialApprovalB	PD_			
Administration	Operation:*	invoke	•			\mathbb{R}
Exit Condition	🛛 🔽 Use data type v	ariables mapping				· \\
Compensation						
Correlation		Name	Туре	Read from	ı Variable	
Expiration	🗊 Inputs	reqBO	RequestBO	reqBO		4
Environment		Name	Туре	Store into	Variable	
Event Monitor	Coutputs	reqBO	RequestBO	🔷 re	qBO	

___ d. Save the BPEL in order to clear the error markers.

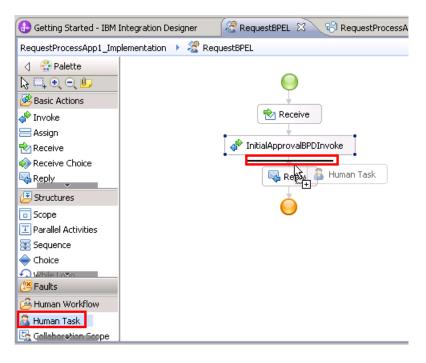
🚯 Busine	ss Integra	ition - R	equest	ProcessAp
<u>F</u> ile <u>E</u> dit	<u>N</u> avigate	Se <u>a</u> rch	Project	t <u>W</u> indow
	i 🔍 -		-] 🖀] 🖣
E Busine	ess In <mark>Save</mark>	All (Ctrl+	Shift+S)	
	 ■ 	3 u		8 🖬

4. See what was generated for you in the Assembly diagram. Double click **Assembly Diagram** in the Business Integration view.

An SCA component for the BPEL and a matching SCA Import for the BPD you are calling within the BPEL, both with the InitialApprovalBPD interface.



- __ 5. Add an inline human task to the BPEL process
 - ____a. Click the **RequestBPEL** tab to return to the BPEL editor.
 - ____ b. Click the Human Task in the BPEL Editor palette, drag to the BPEL flow, and release between InitialApprovalBPDInvoke and the Reply activity



____ c. The Add a Human Task wizard prompts you for an appropriate name and for the interface.

Accept the generated name RequestBPELTask1, clicking OK at the prompt

Name: RequestBPELTask1 Filter by interface or qualifier (? = any character, * = any string): * Select the interface for the new human task. The interface must have exactly one operation. ① InitialApprovalBPD Qualifier: ① Nutp://RPA1/InitialApprovalBPD - RequestProcessApp1_Library/InitialApprovalBPD.wsdl	🚯 Add a Human Task 📃 🔲 🗙
Filter by interface or qualifier (? = any character, * = any string):	Na <u>m</u> e:
* Select the interface for the new human task. The interface must have exactly one operation. InitialApprovalBPD Qualifier:	RequestBPELTask1
Select the interface for the new human task. The interface must have exactly one operation.	Filter by interface or qualifier (? = any character, $* =$ any string):
Qualifier:	*
Qualifier:	Select the interface for the new human task. The interface must have exactly one operation.
(1) http://RPA1/InitialApprovalBPD - RequestProcessApp1_Library/InitialApprovalBPD.wsdl	Qualifier:
	InitialApprovalBPD - RequestProcessApp1_Library/InitialApprovalBPD.wsdl
	1
(?) OK Cancel	(?) OK Cancel

____d. The human task editor opens. Inspect what was generated for you. Click the **RequestBPEL** tab to finish the BPEL.

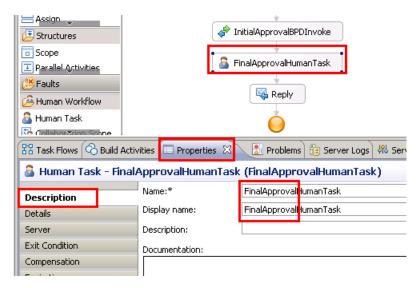
🚯 Getting Started - IBM Integr 🛛 🧟 *RequestBPEL 🔞	RequestProcessApp1_Imp	emen 🚮 RequestBPELTask1 🔀					
▼To-do Task 🔲 📲							
Name RequestBPELTask1	Display Name	<not applicable=""></not>					
▶Service Interface	▶Service Interface						
▼People Assignment (Receiver) 🛛 🕂 💥							
Potential Owners Everybody		Ownership: <u>Single</u>					
•User Interface 🛛 🕂 💥							
😼 User Interface							
▼Escalation 🖉 🐖		<u> </u>					
言! 哥 読 Ready Claimed Subtask started							

____e. Select the HumanTask → Properties → Details, In the Inputs row Read from Variable field, click none and change to reqBO.

Also do this for the Outputs. You are doing this because you want to pass through the same business object throughout this example process.

Assign		· · ·			InitialApprovalBPDParti	
Structures		InitialApprova	alBPDInvoke		😑 Variables 🛛 📮 🖉 🗣 🕷	
o Scope		🔒 Humar	Tack		reqBO	
Parallel Activities	sale frinkler			reqBO1		
Faults						
🙆 Human Workflow		- not	Jiy		Correlation Proper 🖗 🕷	
💁 Human Task		- Č			Correlation Propertitier of	
Collaboration Schoe					dia.	
躍 Task Flows 🕝 Build /	Activities 🔲 Propertie	🛛 🔀 🖹 Prob	lems 👸 Server Logs	해 Servers		
Bescription	Section of Section	s implemented by a	human task.			
Description Details Server	The staff action in Human Task: <u>Re</u>	s implemented by a questBPELTask1	human task.		Open Remove	
Description Details	The staff action i	s implemented by a questBPELTask1	human task.		Open Remove	
Description Details Server	The staff action in Human Task: <u>Re</u>	s implemented by a questBPELTask1		Read fr		
Description Details Server Exit Condition	The staff action in Human Task: <u>Re</u>	s implemented by a questBPELTask1 variables mapping Name	human task. Type RequestBO	Read fr	rom Variable	
Description Details Server Exit Condition Compensation	The staff action in Human Task: <u>Re</u>	s implemented by a <u>questBPELTask1</u> variables mapping	Type RequestBO	Inon	rom Variable	
Description Details Server Exit Condition Compensation Expiration Environment	The staff action i Human Task: <u>Re</u> Use data type	s implemented by a guestBPELTask1 variables mapping Name reqBO	Туре	St.	rom Variable	
Description Details Server Exit Condition Compensation Expiration	The staff action in Human Task: <u>Re</u>	s implemented by a questBPELTask1 variables mapping Name Name	Type RequestBO Type	Inon	rom Variable	

_____f. Change the name for the inline human task. You are already in the properties for the human task, so click the Description sub-tab and change both the name and Display name from Human Task to **FinalApprovalHumanTask**.

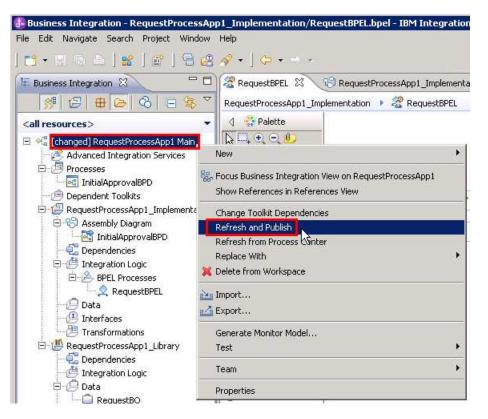


___ g. Save the BPEL

🚯 B	lusine	ss Integra	ation - R	eques	tProc	essi	٩p
Eile	<u>E</u> dit	<u>N</u> avigate	Se <u>a</u> rch	Projec	:t <u>W</u> i	ndo	N
]	-
E:	Busine	ss In <mark>Save</mark>	All (Ctrl+:	Shift+S)		
		+⊑ f	3 #	B I	രി	P	<

- 6. Synchronize with the Process Center.
 - ____a. You now have a BPEL process that calls a BPD and a human task. In order to run the BPEL application in a test, you must Refresh and Publish to the Process Center.

Right click the top-level process application **RequestProcessApp1** and select **Refresh and Publish**



You will notice processor activity (for example, in Task Manager on Windows) and Integration Designer will show at the bottom-right corner it is working on updating Process Center.

Updating Process Center: (100%)	

Once the content from the workspace has finished publishing to the Process Center, you will no longer see the "changed" prefix for the top-level Process App

Part 3: Run the STP process application

In this part of the lab exercise, you will run the STP scenario. A basic outline of this part is:

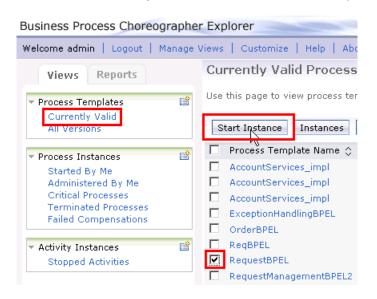
- Open the BPC Explorer to start the scenario
- Use the Process Portal to see and run the Coach
- Use the BPC Explorer again to see and run the Human Task
- ____1. Start the STP scenario
 - ____a. Open a browser and type the following URL, http://localhost:9080/bpc, and press enter. This accesses the BPC Explorer application that you use to drive this application. Type the following credentials and hit Login

User Name: admin Password: admin

Business Process Choreographer Explorer	
Help	

Welcomet	to Business Process Choreographer Explorer.				
	The page you requested is only available to registered users. Enter your username and password and click Login.				
	User Name: admin Password: ••••• Login				

____b. Once in, click Currently Valid, click the checkbox for RequestBPEL, and click start instance.



__ c. Add a process, providing a name and values for the reqBO elements requestNumber and requestDescription. For example:

Process Name – testprocess1 requestNumber – 1 requestDescription - description

Click **Submit** to start the process instance.

Process Input Message				
Use this page to provide the	e input that is needed to start an instance of a process. $lacksquare$			
Submit Process [®] Template Name Process Description	RequestBPEL			
Operation	invoke			
Process Name	testprocess1			
Process Input Message				
	Form View			
	reqBO requestNumber 1 requestDescription description requestApproval - Edit Source			

Keep BPC Explorer open. You will use it again in a minute.

- 2. Open Process Portal to see and work on initial approval coach
 - ___ a. Open URL to http://localhost:9080/portal
 - ____b. Notice the coach is waiting for the initial approval in your Inbox. Select the check box for the coach and click **Run** (green triangle).

IBN Process Portal	Welcome, Administrator Help Admin Preferences Log Off							
My Tasks	Inbox	¢						
Inbox	◆ New + []]						uick Search	
History	Search Organize by Task Show Search						u Saarah	
Help Requests								
Alerts								
IBM.PI_PROCESSLIST_ALL								
IBM.PI_TASKLIST_ALL	Instances							
My ScoreBoards		Instance Name	Process Definition	Instance Due Date	Task Subject	Task Priority 🔺	Task Due Date 🔺	Run
My Performance		InitialApprovalBPD:6	InitialApprovalBPD	Nov 24, 2011 4:45:03 PM	Step: InitialApprovalCoach	Normal	Nov 10, 2011 5:45:03 PM	, IR
My Team Performance	1 resul	ts (0.24 seconds)						
Process Performance	1 resul	ts (0.24 seconds)						

____ c. Click **OK** at the prompt to assign it to you.

e Pr	Running the task will assign it to you. Are you sur	re? bject
D:6 Init		alApprovalCoach
	OK Cancel	

____ d. Another browser window will open with the Coach form.

Change the request number (for example change it to 12)
Change the description to passedCoach
Click OK

itialApprovalCoach	
Req B O	
Request Number: 👖	2
Request Description: p	assedCoach
Request Approval: 📘	

____e. The Coach will now disappear from your Inbox. Therefore, the business process has left the BPD and should now be waiting on for the BPC human task to be completed.

- _____ 3. Return to the BPC Explorer to see and work on the final approval human task
 - ____a. To see the task, click **My To-dos** under **Task Instances** section, select the checkbox for FinalApprovalHumanTask, and click **Work on**.

'elcome admin Logout M	anage !	Views Custor	nize Help About						
Views Reports		My To-dos	5						
 Process Templates 	Ê	Use this page	to work on tasks that are as	signed to y	ou. İ				
Currently Valid All Versions		Work on	Release Transfer Sta	rt Chang	je Business C	ategory	Refresh		
 Process Instances 	r an	🗖 Priority 🤇	🗧 Task Name 🗘	State 🗘	Kind 🗘	Owner 🗘	Originator 🗘	Escalated \diamondsuit	Suspended 🗘
Started By Me		5	FinalApprovalHumanTasl	-	To-do Task		admin	no	no
Administered By Me		5	InlineHumanTask	Ready	To-do Task		admin	no	no
Critical Processes Terminated Processes		5	HumanTask	Ready	To-do Task		admin	no	no
Failed Compensations		5	HumanTask	Ready	To-do Task		admin	no	no
		Items found: 4	Items selected: 1			Page 1 of 1	Item	s per page: 2) 💌
 Activity Instances Stopped Activities 	Ê								
 Task Templates 	¢								
My Task Templates									
Task Instances My To-dos All Tasks Initiated By Me Administered By Me My Escalations	Ľ								

____b. Once the task is open, see the updated content that came from the BPD.

Change the requestNumber (like 123)

Change the reque Click Add to verify Click Complete	y the ap		umanTask
		Views Customize Help	About
Views Reports		Task Message	
 Process Templates Currently Valid All Versions 	Ê		ease Cancel
 Process Instances Started By Me Administered By Me Critical Processes Terminated Processes Failed Compensations Activity Instances Stopped Activities 	Ê	Task Name Task Input Message	FinalApprovalHumanTask Form View reqBO requestNumber 12 requestDescription passedCoach requestApproval View Source
▼ Task Templates My Task Templates	Ê	Task Output Message	Form ¥iew*
 Task Instances My To-dos All Tasks Initiated By Me Administered By Me My Escalations 	Ê		requestNumber 123 requestDescription passedHumanTask requestApproval - Add

____ c. You have now finished the straight through processing scenario.

What you did in this lab exercise

In this exercise you...

.

- As the integration developer using the Integration Designer
 - o Created a human centric BPEL process
 - o Integrated a BPD into a BPEL process and worked with SCA artifacts associated with the BPD
 - o Refreshed and Published to the Process Center
 - o Used the BPC Explorer to drive/start the STP scenario
 - As the process developer using the Process Designer
 - Created a Process App
 - Create a process application and simple business process that uses a Coach
 - Correctly passed data through the process
 - o Tested the process application using the Process Inspector
 - Used the Process Portal to work with the Coach