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OpenESB Standalone Edition V3.0 Hello World

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Abstract:

This document provides a short guide to create a simple "Hello world" application with OpenESB Standalone EditionV3.0. You will learn how to install shared libraries, components and deploy composite applications, connect OE Studio and OE Instance, create BPEL and a composite application project. Then you will understand how to deploy and test your project.

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This Document is in a beta state

ABOUT PYMMA CONSULTING

Pymma Services is a technical architect bureau founded in 1999 and headquartered in London, United Kingdom . It provides expertise in service oriented integration systems design and implementation. Leader of OpenESB project, Pymma is recognised as one of the main actors in the integration landscape. It deeply invests in open source projects such as Drools rules engine. Pymma is a European company based in London with regional offices in France, Belgium and Canada. (contact@pymma.com or visit our website on www.pymma.com)

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1 Introduction

When we start learning about a product, it is customary to start with a 'hello word exercise'. Through this simple exercise easily understood by anyone, we develop a first application, and get our first thrill and enjoyment by getting Hello + Name.

We go a bit further in this tutorial by explaining how to install OpenESB shared libraries and components and how to connect OpenESB Studio with an OpenESB instance. At the end of this tutorial you will be able to deploy and test your application without leaving OE-Studio.

OpenESB Standalone Edition (OE SE) offers the lightest and most efficient service oriented integration tools on the market. Powerful, prompt, scalable with a very low memory footprint, OE SE is perfect for virtualisation and cloud deployment.

1.1 Before starting

We suppose you have already installed OpenESB on your machine. If not have a look at our document: **770-001-OE SE Installation Guide**.

1.2 What you will learn in this document

This tutorial agenda is:

- Install OE shared libraries and components
- Connect OE-Studio with an OE-Instance
- Create a BPEL project
- Create a composite application project
- Deploy a project
- Test a project

As much as possible we try to be clear and concise in our tutorial. Feel free to contact us to give us your feedback (contact@pymma.com).

2 Start OpenESB instance

First Open a console and go to the directory ...\OpenESB-SE-3.0\OE-Instance\bin and run "oeadmin.bat" on Windows and "oeadmin.sh" on Linux or UNIX.



After a few seconds, OpenESB Instance is ready to run.

C C C C C C C C C C C C C C C C C C C
2014-12-18T21:08:41.008+0000 INFO [net.openesb.standalone.node.internal] (main) OESE-
2014-12-18T21:08:41.291+0000 INFO [net.openesb.standalone.node.internal] (main) OESE- -SE-3.0\OE-Instance\config/openesb.yaml
2014-12-18T21:08:41.551+0000 INFO [net.openesb.standalone.node.internal] (main) OESE- OE-Instance\config/openesb.yaml
2014-12-18T21:08:42.517+0000 INFO [net.openesb.standalone.security] (main) OESE-1200:
2014-12-18T21:08:42.530+0000 INFO [net.openesb.standalone.security.realm.impl.Propert ties realm using file: F:\OpenESB-SE-3.0\OE-Instance/config/mgmt-users.properties.
2014-12-18T21:08:42.708+0000 INFO [net.openesb.standalone.security] (main) OESE-1202:
configured. 2014-12-18T21:08:42.719+0000 INFO [net.openesb.standalone.naming] (main) OESE-1400: P
.0\0E-Instance/config/context.xml 2014-12-18T21:08:43.223+0000 INFO [net.openasy.standalone.node.internal] (main) OES&-
2014-12-18T21:08:43.228+0000 INFO [net.openesb.standalone.node.internal] (main) OESE-
2014-12-18T21:08:43.669+0000 INFO [net.openesb.standalone.jmx.JMXService] (main) OESE x:rmi:///jndi/rmi://localhost:8699/jmxrmi
2014-12-18T21:08:44.520+0000 INFO [com.sun.jbi.framework] (main) JBIFW0010: JBI frame 2014-12-18T21:08:45.231+0000 INFO [com.sun.jbi.framework] (main) JBIFW0012: JBI frame
2014-12-18T21:08:45.238+0000 INFO [net.openesb.standalone.http] (main) OESE-1500: Usi
2014-12-18T21:08:46.598+0000 INFO [org.glassfish.jersey.server.ApplicationHandler] <m : 2.7 2014-03-12 18:11:31</m
2014-12-18T21:08:48.912+0000 INFO [net.openesb.standalone.http] (main) 0ESE-1502: Sta 2014-12-18T21:08:49.106+0000 INFO [org.glassfish.grizzly.http.server.NetworkListener]
2014-12-18T21:08:49.121+0000 INFO [org.glassfish.grizzly.http.server.HttpServer] (mai
2014-12-18T21:08:49.128+0000 INFO [net.openesb.standalone.node.internal] (main) OESE- 5,894 ms.

Open a browser (Firefox, Chrome or Else) and type the address: http://localhost:4848/webui.

OpenESB web admin console allows you to install shared libraries and components and deploy your project. It provides monitoring facilities as well.

Before starting you have to enter a login and password. Default values are "admin" and "admin".

Login



Then the web admin console opens.



OpenESB is now ready to run.

3 Install OE shared libraries and component

OpenESB standalone installation comes without components; it is up to you to install the shared libraries and components to run your applications. This installation is much lighter and takes up less memory. Shared libraries are jar files shared by components in OpenESB. There are three shared libraries in OpenESB: wsdlsl.jar, wsdlextlib.jar and encoderlib.jar. The purpose of each library is beyond the scope of this tutorial.

wsdlsl.jar is already installed by default with an OE Instance. So you don't have to install it, let's install the two other ones.

Openese Dashboard A Dashboard / 🗐 Shared Libraries Instance Shared Libraries Manage Java Business Integration Shared Libraries. Service Assemblies Components Shared Libraries Shared Libraries Search: Enter text Endpoints Description Name Click on the Install button on the left of the console. Shared Libraries Manage Java Business Integration Shared Libraries. Shared Libraries (2) Search: Enter text

Select "Shared Libraries" in the main menu.

Click on the button "Choose file"

Description

Name

Version

Install Shared Library_{Specify}



Where are the components located? Shared libraries and components are located in .../OpenESB-SE-3.0\components.

Go to this directory and select the file "encoderlib.jar".



Then select the button "Start Upload".

Install Shared Library Specify the location



After a few seconds the library opens.

Redo the same process with wsdlextlib.jar. You must get almost the same screen.

Shared Libraries Manage Java Business Integration Shared Libraries.

Shared Lil	braries (2)		
Search: Enter te	ext		
Name	Description	Version	
sun-encoder- library	JBI shared library for encoders. Encoders supported: customencoder-1.0 hl7encoder-1.0 cocoencoder-1.0	2.3.2- SNAPSHOT	â
sun-wsdl-ext- library	A collection of wsdl utilities for JBI components.	2.3.2- SNAPSHOT	â

Once the shared libraries are installed we can install the components.

Install the components 4

Shared libraries and components installations are similar. Nevertheless, component installation requires an additional step. By default, an OE component is installed in the state shutdown; to run it must be set up in the state Start. For more information on component life cycles please read JBI specifications. For this tutorial, we will install the HTTP and BPEL components:

On the main menu, click on Components.

<i>"</i> Openese ≡		
希 Dashboard		
A Instance	A Dashboard / 🕸 Components	
E Service Assemblies	Components Manage Ja	iva Business Integratio
Components	es Binding components and	Service Engines
Shared Libraries	Search: Enter text	
Endpoints	Name	State

Click on the Install button on the left of the console.

Components Manage Ja	ava Business Integrati	on Binding Components and S	ervice Engines.	\frown
∞ Binding components and	Service Engines			+ Install
Search: Enter text				\bigcirc
Name	State	Version	Build Number	

Click on the button "Choose file"

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Install Component specify



Select the component HTTP-Full.jar.



Http jar is a legacy component and should not be used with the OpenESB standalone edition. Then install the component.



Follow the same process to install the component bpelse.jar.

☆ Favorites	Name
	🔚 alese.jar
🥽 Libraries	🚞 aspectse.jar
	📜 bpelse.jar
🔣 Homegroup	🔚 camelse.jar
	🔚 componentsl.jar
🖳 Computer	🔚 databasebc.jar
🗸 Windows7, OS (C·)	📜 deomhe iar

When a component is uploaded its state is set up to "Shutdown". A component must be in the start state to process new message.

Dashboard	1 4	OS -	Com	ponents
-----------	-----	------	-----	---------

Components Manage Java Business Integration Bi

∞ Binding components and	Service Engines	
Search: Enter text		
Name	State	
🔯 sun-bpel-engine	SHUTDOWN	
the sun-http-binding	SHUTDOWN	

Click on the component name, select the general tab and select "Start"

A Dashboa	ard / 🕫 Compone	ents / sun-bpel-engine			
sun-bp	el-engine	SHUTDOWN			
General	Configuration	Application Configurations	Application Variables	Descriptor	Loggers
Shared Lib	oraries Monito	ring			
	component Gen s for this Java Business	eral Properties Integration Binding Component.			
Descr	iption			Operatio	on
Name: Type: Description Version:	:	sun-bpel-engine SERVICE_ENGINE WS-BPEL 2.0 compliant JBI Service Engine 2.3 2-SNAPSHOT			tart top Shutdown
Build Numb		803			

After a few seconds, the component starts. Start BPEL and HTTP components to continue the tutorial.

Dashboard /	Components	
-------------	------------	--

Components Manage Java Business Integration Binding Components and Service Engines.

Build Number	
Build Number	
Bulla Nulliber	
803	
803	

Shared libraries and components are installed. You are able now to develop and deploy your application.

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5 Connect OE-Studio with an OE-Instance

In this chapter, we will connect OpenESB studio and the OpenESB instance we started in the previous chapter. First open a new console and go to the repository .../OpenESB-SE-3.0/OE-Studio/NetBeans/bin. Run openesb.exe for Windows or openesb for Linux.



The OpenESB studio logo appears.



After a few moments the OpenESB studio opens.

OpenESB Studio 2.4.0-SNAPSHOT						0	a 1.4511		
le <u>E</u> dit <u>V</u> iew <u>N</u> avigate <u>S</u> ource Ref <u>a</u> ctor <u>R</u> un <u>D</u> eb	-						Search (Ctrl+		
1 🔁 😫 🗣 🍤 🥙 💷 🔤	- Q ·	T	B	- 🎼	- 🕕	•	186.7/494.	9MB 🔞	
Projects Files Services %	-			 					
Databases									
🗠 🧟 Web Services									
Servers									
Maven Repositories									
Cloud									
Hudson Builders									
Task Repositories									
JS Test Driver									
8-Dec-2014 14:43:59 - Failed - Navigator 🕷	-								
<no available="" view=""></no>									
								1	IN

Select the node Server, right click and select Add Server.



Select the server OpenESB standalone.

Choose	Server
Server:	Apache Tomcat
	GlassFish Server
	GlassFish v1
	GlassFish v2.x
	JBoss Application Server
	OpenESB Standalone
	Oracle WebLogic Server
	Sailfin v1 and v2
	Sun Java System Application Server 8.2

Then click on the NEXT button.

🚳 Add Server Instance	
Steps	Installation Details
1. Choose Server 2. Installation Details	Specify the OpenESB Standalone details. OpenESB Location: Browse OpenESB Location: localhost

In the OpenESB Studio V3.0, the Installation screen has two fields both entitled, "OpenESB Location". The first one is used for local installations. The second one is dedicated to remote installations planned in the next OE-Studio versions.

OpenESB location is .../OpenESB-SE-3.0/OE-Instance. Leave the second field as it is. It should be localhost.



Installation Details								
Specify the OpenES	B Standalone details.							
OpenESB Location:	F:\OpenESB-SE-3.0\OE-Instance	Browse						
OpenESB Location:	localhost							

Click on the Finish button.



Expend the node "Servers". You could notice that the OpenESB Studio is well connected with our OE Instance.

In this paragraph, we will create the "Hello World" Services. To do it we have to open the BPEL editor. Select the tab project.



Right click on the project windows and select New Project.



Chose the category SOA and then choose the BPEL Module.

Click on Next.

	×
Name and Locat	ion
Project <u>N</u> ame:	HelloWorld
Project Location:	G:\temp\poubelle Browse
Project Fol <u>d</u> er:	G:\temp\poubelle\HelloWorld
☑ Set as <u>M</u> ain Pr	oject
< <u>B</u> ack	Next > Finish Cance Help

Enter the project Name and then click on Finish.

After a while, the OE-Studio screen appears as follows.



As part of the OpenESB process, before working on the orchestration, we have to define the contract of our hello world service (a WSDL). The contract defines the operation(s) and the parameter of our services. For Hello world service, the input will be a String (ex: Pymma) and the output a String as well (ex: Hello Pymma).

6.1 Create a WSDL

Right click on the project node HelloWorld and select New \rightarrow WSDL.

🛷 OpenESB Studio 2.4.0-SNAPSHOT								
<u>File Edit View Navigate Source Refactor Run D</u> ebug Profile Team <u>T</u> ools <u>W</u> indow								
- 😭 🕆 🕒 🕒 🔊 🥐 🚺								
Projects % Files	Services 🔲 📔	helloWorld.bpel	8'Hist					
Process I	New	► (WSDL Document					
i in hello ⊡ In Referen¢	Build Clean and Build Clean	1 1 1	Folder Empty File BPEL Process					
	Populate Catalog		Other					

The WSDL wizard opens.

Steps	Name and I	ocation	
 Choose File Type Name and Location Abstract Configuration 	File Name:	ielloWorld	
	Project:	HelloWorld	
	Folder:	src	Browse
	Created File:	G:\temp\poubelle\HelloWorld\src\HelloWorld.	wsdl
	Target Name	space: http://j2ee.netbeans.org/wsdl/HelloW	orld/src/HelloWorld
	WSDL Type:	 Abstract WSDL Document 	
		Concrete WSDL Document	

Type HelloWorld as File Name and let the WSDL Type as Abstract. Then click on **NEXT**. Note that Input and output element are Strings by default. Keep the default field values and click on the **Finish button**.

	ew WSDL Document	Abstract Configu	ration		
1.	Choose File Type		HelloWorldPortType		
 Name and Location Abstract Configuration 		Operation Name:	HelloWorldOperation		
		Operation <u>Type</u> :	Request-Response Operation		-
		Input:	Message Part Name	Element On Type	
			part1	xsd:string	
			Add Remove		
		Output:	Message Part Name	Element Or Type	
			part1	xsd:string	
			Add Remove		
		Fa <u>u</u> lt:	Message Part Name	Element Or Type	
			Add Remove		
	12	<mark> </mark>	tnerlinktype automatically.		
			< Back Ne	ext > Finish Cancel	Help

The HelloWorld wsdl file has been added to your project.

OpenESB Studio 2.4.0-SNAPSHOT	
<u>File Edit View Navigate Source Refactor</u>	r <u>R</u> un <u>D</u> ebug <u>P</u> rofile Tea <u>m</u> <u>T</u> ools <u>W</u> indow <u>H</u> elp
1 🔁 🖴 🗣 🍯 🤁 🗔	- O - T 🔯 🕨 - T - D - 192.7/494.9MB 🐼
Projects % Files Services	🔂 helloWorld.bpel 🕫 🕃 HelloWorld.wsd 🛛 📽
🖃 😽 HelloWorld	Source WSDL Partner History 📔 🛄 🚷 😽
Process Files HelloWorld.wsd helloWorld.bpel Referenced Resources	ittp://j2ee.netbeans.org/wsdl/HelloWorld/src/HelloWorld Imports Imports HelloWorldOperationRequest HelloWorldOperationResponse Port Types HelloWorldPortType Bindings Extensibility Elements HelloWorld

6.2 Create a BPEL

Click back on the tab helloWorld.bpel. Select HelloWorld.wsd and drag it onto the grey left strip of the BPEL editor.

When you position the mouse cursor in the grey left strip an orange circle appears. Drop the wsdl there.

8 Files Servi	🕞 helloWo	rld.bpel	🛚 🎒 Hel	loWorld.ws	dl 🛛		< > <	
🖃 😤 HelloWorld	Source	Design	Mapper	Logging	History		€	→ 1
Process Files		(A		• † *				•
Hello'Vorld.wsdl								-
helloWorld.bpel				helloWo	orld	0		
English Referenced Resources				-				
)			
				Process 5	Start			
					_			
							\odot	
HelloWorld.wsdl - Na 🕷 🔳	il			19	′			
http://j2ee.netbeans.org/wsd								
Types								
Imports								
🖶 🖟 Messages								
🖶 🖂 HelloWorldOperationR								

After dropping the WSDL on the orange circle, a PartnerLink appears in the BPEL Editor.



6.2.1 Add BPEL activity

On the right side of OE-Studio, you can see the BPEL palette.

Palette %								
Web Servi <u>c</u> e								
🖾 Invoke	Receive	Reply	🖱 Partner Link					
🖃 <u>B</u> asic Act	ivities							
Assign	🕞 JavaS	cript (🕥 Validate					
Empty	🕒 Wait	(🐼 Throw					
🐼 ReThrow	🐼 ReThrow 💿 Exit		Ocompensate					
OmpensateScope								
🖃 <u>S</u> tructure	ed Activities							
🛞 If	🚵 While	🔚 RepeatU	ntil 💿 ForEach					
Pick	🕀 Flow	C Sequence	e 🗆 Scope					

For this document, we will use 3 BPEL activities:

- Receive: used to receive the message
- Assign: map the input variable to the output variable
- Reply: return the message.

Then drag and drop the activities to design the process. Select the Receive activity in the BPEL palette.

1			
Palette %			-
🗆 Web Serv	rice		
🖸 Invoke		Reply	📅 Partner Link
🖃 <u>B</u> asic Acti	ivities		
Assign		🕞 JavaScript	
🚫 Validate		Empty	
🕒 Wait		🐼 Throw	
🐼 ReThrow		🔘 Exit	
🕜 Compensa	ite	Compensate	Scope
🖃 <u>S</u> tructure	d Activities		
🛞 If	😭 While	🔄 RepeatUntil	< ForEach
Pick	🕀 Flow	C Sequence	Scope

Drag the activity to the centre of the BPEL Editor.



Drop the activity on the Orange circle and the Received activity appears in the BPEL Editor.

Follow the same steps to the Assign activity.



Drag and Drop the Assign icon on the Orange beneath the Receive activity.



Do the same with the Reply icon.

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6.2.2 Link the activities with the PartnerLink(s)

Click on the Receive icon, a small box appears.Click on the small box to edit the Activity properties.

📣 Receive1 [Re	ceive] - Property Editor		×
Main Correlatio	ons		
Name:	Receive 1		
Partner Link:	PartnerLink1		_
Operation:	HelloWorldOperation		•
Input Variable:	HelloWorldOperationIn	Create	Browse
🔽 Create Insta	ance		
		Ok Cancel	Help



Partner Link: Select PartnerLink1 **Operation**: Select HelloWorldOperation **Input Variable**: Click on Create button.

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📣 New	/ Input Variable
<u>N</u> ame:	HelloWorldOperationIn
<u>Type</u> :	elloWorld/src/HelloWorld:HelloWorldOperationRequest
Scope:	helloWorld 👻
	Ok Cancel

Keep the values by default. Then click on OK.

Click OK to validate the properties.

🔂 helloWorld.bpel 🛛 🕺	🔀 HelloWorld.wsdl 🛛 📾
Source Design Mapp	er Logging History 🕅 🥅 💽 🚱 🖬 🖽
	helloWorld
Partnerti	Process Start Receivel Assign1 Reply1 Process End

A link has been created between PartnerLink1 and the Receive activity.

Click on the Reply1 activity then click on the properties box. Do the same process with Reply. Double click on Reply1.



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💽 Reply1 [Reply] - Property Editor				
Main Correla	tions			
<u>N</u> ame:	Reply1			
Partner Link:	· · · · · · · · · · · · · · · · · · ·			
Operation:				
Normal Re	sponse			
<u>O</u> utput Va	riable: Create Browse			
🔘 <u>F</u> ault Resp	ponse			
Fault Nam	e: C <u>h</u> oose			
Fault <u>V</u> aria	able: Create Browse			
	Ok Cancel <u>H</u> elp			

The pop-up Reply-Property Editor opens. Select the default values for "Partner Link" and "Operation" and set this Reply activity as follows.

Reply1 [Re	ply] - Property Editor
Main Correla	tions
Name:	Reply1
Partner Link:	PartnerLink1
Operation:	HelloWordWSDLOperation
Normal Re	sponse
Output Va	ariable: Create Browse
Fault Resp	ponse
Fault Nam	e: Choose
Fault Varia	Browse
	
	Ok Cancel Help

Click on Create.

Reply1 [Repl	y] - Property Editor				
Main Correlatio	ns				
<u>N</u> ame: R	eply1				
Partner Link:	🕥 New Output Variable				
Operation:					
Normal Res	Name: HelloWordWSDLOperationOut				
<u>O</u> utput Var	Type: I/HelloWordWSDL:HelloWordWSDLOperationResponse Browse				
O Eault Respo	Scope: helloWorld				
Fault Na <u>m</u> e	Choose				
Fault <u>V</u> ariat	Ok Cancel Browse				
Ok Cancel <u>H</u> elp					

Keep the default values and click on OK.

Reply1 [Reply] - Property Editor				
Main Correla	tions			
Name:	Reply1			
Partner Link:	PartnerLink1			
Operation:	HelloWordWSDLOperation			
Normal Re	esponse			
Output Va	ariable: HelloWordWSDLOperationOut Create Browse			
○ <u>F</u> ault Res	ponse			
Fault Nam	le: Choose			
Fault <u>V</u> ari	able: Create Browse			
	Ok Cancel <u>H</u> elp			

The Receive activity is now set up. Click on OK.



The set-up creates a link between the partner link and the activity Reply. This means that when a message is sent to Reply1 activity, it is also forwarded to Partner link.

6.2.3 Setup Assign activity

Assign is the activity that maps the input messages to output messages. This is the place where we concatenate "Hello"+ the input name.

Double click on Assign1 to open the mapper editor.

HelloWorld.bpel * x 🔀 HelloWordWSDL.wsd x	
Source Design Mapper Logging	
🕼 Operator 📑 Boolean \land String 📲 Node 📟 Number 🐒 Date & Time 🔂 BPEL	
H All Output	Input All 🕂 🗸
Variables	Variables 🖶 🕂
🗄 🕂 🖶 Partner Links	Partner Links 🖶

Expand the variable nodes on both sides.

🗄 helloWorld.bpel * x 📓 HelloWordWSDL.wsd x						
Source Design Mapper Logging	Source Design Mapper Logging					
🚱 Operator 📑 Boolean 🔬 String 📲 Noo	le 📃 Number 🛅 Date & Time 🔂 BPEL					
H All Output		Input All 🕂 🗸				
Uariables		Variables 🖶 – 📮				
HelloWordWSDLOperationOut HelloWordWSDLOperationIn		HelloWordWSDL0perationOut 🌯 –				
part1		part1 📴 —				
• Properties		Properties 📗 🕂				
🗄 🕂 🖶 Partner Links		HelloWordWSDLOperationIn 🎴 –				
		Partner Links 🖶				

Click on HelloWorldWSDLOperationOut→part1. A blue lane appears at the part1 level.

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Provide the second seco		
Source Design Mapper Logging		
🍪 Operator 📙 Boolean 🔬 String 📲 Nod	e 🗐 Number 🛅 Date & Time 🔂 BPEL	
H All Output		Input All 🕂 🗸
Variables HelloWordWSDLOperationOut HelloWordWSDLOperationIn Port1 Properties Partner Links		Variables

Select the Icon "String' on the mapper editor top menu and select the item "String Literal".

🖳 helloWorld.bpel * 🗙 🚯 HelloWordWSDL.wsdl 🗴						
Source Design Mapper Logging	Source Design Mapper Logging					
🍪 Operator 📑 Boolean 🔬 String 📲 Nod	e 📃 Number 🛅 Date & Time 🔂 BPEL					
H + All Output			Input All 🕂 🛪			
E Variables			Variables 🖶 🗧			
HelloWordWSDLOperationOut			HelloWordWSDLOperationOut 🌯 🕂			
	· · · · · · · · · · · · · · · · · · ·	Ξ	part1 📴 —			
Properties Partner Links			Properties 퉬 – 🗄			
			HelloWordWSDLOperationIn 🔮 – 🗄			
			Partner Links 🖶 🚽			

A new icon appears on the blue lane. It is the place to store "Hello". Double click on the icon and type "Hello" (without " but with a space after Hello).

25 helloWorld.bpel * x 📳 HelloWorldWSDL.wsdi x					
Source Design Mapper Logging					
🍪 Operator 📑 Boolean 🔬 String 📲 N	lode 🖩 Number 🛅 Date & Time 🔂 BPEL				
🕂 🛪 📶 Output	E ^H * All Output Input All E ^H *				
- Variables			Variables 🖶 – 📮		
HelloWordWSDLOperationOut HelloWordWSDLOperationIn			HelloWordWSDLOperationOut 🌯 📥		
B part1	(A) 'Hello '	-	part1 📴 —		
Properties Partner Links			Properties 🏭 – 🗄		
			HelloWordWSDLOperationIn 🎴 🕂		
			Partner Links 🖶 🚽		

Select the Icon "String' on the mapper editor top menu and select the item "Concat".



A Concat icon is added in the blue lane next to "Hello".

🗄 helloWorld.bpel * 🗙 🕃 HelloWorldWSDL.wsd 🗙					
Source Design Mapper Logging					
🍪 Operator 📑 Boolean 🔬 String 📲 I	lode 🚟 Number 🖓 Date & Time 🔂 BPEL				
tree all Output			Input All 🕂 🗸		
U Variables			Variables 🖶 – 📮		
HelloWordWSDLOperationOut HelloWordWSDLOperationIn			HelloWordWSDLOperationOut 🌯 🕂		
Properties Partner Links	Hello ' String String String String String		part1 🖻 —		
			Properties 🏭 🕁		
			HelloWordWSDLOperationIn 🎴 🕁		
			Partner Links 🖶 🗕		

Drag and Drop then link the element as shown below.



1-Link Hello to Concat input.

2-Link HelloWorldWSDLOperationIn→part1 to another Concat input. 3-Link Concat output to HelloWorldWSDLOperationOut→part1.

Concat = concatenates Hello + the name found in the input message and put the result into the output message.

Source Design		HelloWordWSDL.wsdl x
	rapper	
PartnerLi HelloWor		helloworld Process Start Receive1 Receive1 Reply1 Process End

Click on design to come back to the BPEl editor. Note that the red signs are not present anymore; it indicates your BPEL is valid without error.

Save your BPEL. Click on icon or type ctrl-shift-S, then close the BPEL editor.

7 Create a Composite Application

To deploy an application with OpenESB you have to create a composite application. A composite application is the deployable entity for OpenESB.

Right click on the project tab and select "New project ".

Select the SOA Category and the Composite Application project.

Composite Application
BPEL Module
VSLT Module
👌 Data Mashup Module

Click on Next and set the project name.

Steps	Name and Location
 Choose Project Name and Location 	Project Name: HelloWolrdCA
	Project Location: G:\test Browse
	Project Folder: G:\test\HelloWolrdCA
	☑ Set as <u>M</u> ain Project

Click on Finish

After a while, HelloWorldCA project is added into the Project tab, and the Composite Application Editor opens.

Projects (I × Files Services	HelloWolrdCA.casa ×			
-	Source Design 📰 🕅 😿			
Gervice Assence	WSDL Ports	JBI Modules	External Modules	
🗄 🎲 381 Modules				
🖶 😋 Test				
ia - 58 HelloWorld				
E C Process Files				
HelloWordWSDL.wsd				
Referenced Resources				
HelloWolrdCA [Main] - Navigator	Drop WSDL	Drop JBI Module from the Project Explorer.	Drop JBI Module from	
inclosed (main) intrigator	Binding from	brop obrindadie from the Project Explorer.	the Project Explorer,	
	-		Runtime Service Unit	
	the Palette, or			
	Load WSDL Port		from the Services	
	from Existing		Tab, or User-defined	
	WSDL Files.		External Service Unit	
			from the Palette.	
<no available="" view=""></no>				

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7.1 Add the BPEL Module in a composite application

Select HelloWorldCA project.



Drag it and drop it in the JBI Module Lane, in the Composite Application editor.

B HelloWolrdCA.casa * x					
Source Design	' 🖻 📚				
WSDL Ports	JBI Modules	External Modules			
	(i) (BPEL) HelloWorld				

Click on the build button represented by a hammer.

HelloWolrdCA.casa ×		
Source Design		
WSDL Ports	JBI Modules	External Modules
	(BPEL) HelloWorld	
	helloWorld	
	PartnerLink1	

Composite Editor introspects Hello Word project and find out the partner links associated with the project.

7.2 Add a Binding Component

Our project is ready to be deployed but we have to precise how the project will receive the messages. To send messages to the BPEL module, we use a SOAP protocol. You have to define a SOAP port where the message will be sent.

On the right part of the screen, in the palette, select the icon SOAP (not SOAP12).

Palette				0	×
🗆 WSDL Bindi	ings				
🕳 database	amail 🚘	🕳 file	🕳 ftp		
🕳 http	a soap	asoap 12 🛃	🕳 jms		
🕳 ldap	🕳 rest	a scheduler			
Service Unit	its				
SU External					
Endpoints					
Consume	>> Provide				

Drag the icon and drop it on the WSDL Ports lane in the Composite application editor.

HelloWolrdCA.casa * 🗴		
Source Design	▶ 😽	
WSDL Ports	JBI Modules	External Modules
	(BPEL) HelloWorld	
🔁 õ 🔤	PartnerLink1	
casaPort1		

A SOAP icon appears on the WSDL Ports Lane. With a simple drag and drop Link SOAP and BPEL.



Save the project: Type Crtl-shift-S.

8 Deployment

8.1 Deploy the composite application

Go back to the Projects tab. Select HelloWorldCA. Click right and select "Deploy".

Projects	40 ×	Files		Services	
	elloWolrdC Service As Process Fil JBI Module Test lloWorld Process Fil HelloW HelloW Reference	is le le lo lo	Add JBI Mod Add External New Build Clean and Bu Clean	JBI Module	•
	Reference		Deploy		
			Undeploy		
			Test Debug (BPEL)	Alt+F6

After a few seconds, at the bottom of your screen, in the build.xml tab in the output window, check if the build is successful.

Out	tput - build.xml (run) 🕺
Out	tput - build.xml (run)
NN	[deploy-service-assembly]
\mathbb{W}	Deploying a service assembly
	host=localhost
25	port=8699
ର୍ବିକ	file=G:\temp\poubelle\HelloWorldCA/dist/HelloWorldCA.zip
	[start-service-assembly]
	Starting a service assembly
	host=localhost
	port=8699
	name=HelloWorldCA
	run:
	BUILD SUCCESSFUL (total time: 3 seconds)

Your hello World application is now deployed.

9 Test the application.

Now let's test the application. The OpenESB has a simple test generator. It allows you to test any SOAP port in your applications. Select the node "Test" in the HelloWorldCA project. Right click and select "New Test case".



Give a name to the test case and click Next.



Select the HelloWorldCA and click Next.



Select the HelloWorldWSDLOperation and click Finish.

New Test Case	— X —			
Steps	Select the Operation to Test			
Enter the Test Case Name Select the WSDL Document Select the Operation to Test	Binding Operations:			
	Selected Operation: ordWSDLOperationRequest): HelloWordWSDLOperationResponse			
<back next=""> Finish Cancel Help</back>				

The XML Editor opens. Type your name in the Part1 (Ex: Pymma).

HelloWorldCA.casa 🗱 🔀 Input.xml 🗱	
Source History 🕼 💀 - 💐 - 🔍 🗫 🖓 🖶 斗 🍄 😓 😫	
1	<pre></pre>

Save the XML document: Ctrl-Shift-S. The new test case "TestCase1" appears in the hierarchy. Run TestCase1.



After a while the following pop-up appears.



Double click on the output and ignore the message saying Failed that opens afterwards.





The unit test failed because we did not set up an output for the test. Do the test again and you won't get an error. Congratulation!!! It works. You're the best ;-). **P**^MMM

10 Next steps

The next step will be to install the OpenESB components and Libraries on your instance then create and deploy your project with the OpenESB Studio.

We advise you to read our documents: **770-003 OE Web admin console** and the administrative guide: **770-004 OE** Admin Guide.

11.1 From the community

You can find all our OpenESB documentations on the OpenESB official web site: www.open-esb.net. If you have any questions or would like to share your feedback, use the OpenESB forum at: http://**openesb**-community-forum.794670.n2.**nabble**.com Feel free to notify us with a bug or suggest how to improve our services on : https://openesb.atlassian.net/secure/Dashboard.jspa

11.2 From Pymma

Pymma is deeply involved in the community and offers services and consulting on OpenESB. Pymma has professional services that can assist you from the development of your SOA design, implementation and ongoing management. All of our skills and background are based on our extensive first-hand experience and industry-leading methods.

Pymma releases an OpenESB Enterprise Edition with many additional enterprise features and a professional support.

In addition to OpenESB development, Pymma designed a new Service-Oriented development process named Rebecca to help business, architect and development team during the design and the implementation of their service oriented projects with OpenESB or any other service oriented development tool.

Feel free to contact us by email at contact@pymma.com for any further information on our OpenESB Services.

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