## **ESB Tools Reference Guide**

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# Introduction

## 1.1. What is ESB?

ESB (Enterprise Service Bus) - an abstraction layer on top of implementation of an enterprise messaging system that provides the features Service Oriented Architectures may be implemented with.

If you want to develop applications using ESB technology JBoss ESB also meets your needs. The JBoss Tools provide ESB editor and all necessary wizards for creating an ESB file.

In this guide we provide you with the information on ESB Editor which allows you to develop ESB file much faster and with far fewer errors so sparing your time.

## **1.2. Other relevant resources on the topic**

You can find a set of benefits and other extra information on:

- JBoss ESB [http://www.jboss.org/jbossesb]
- JBoss Wiki [http://wiki.jboss.org/wiki/JBossESB]
- JBoss ESB Documentation Library [http://www.jboss.org/jbossesb/docs/index.html]

The latest JBoss Tools/JBoss Developer Studio documentation builds are available <u>here</u> [http:// download.jboss.org/jbosstools/nightly-docs/].

# **ESB Support**

In this section we will focus on all concepts that JBoss Tools integrate for working with JBoss ESB.

## 2.1. ESB Tools Installation

This chapter will provide you with the information on how to install JBoss ESB plugin into Eclipse.

ESB Tools come as one module of JBoss Tools project. Since ESB Tools have a dependence on other JBoss Tools modules we recommend you to install a bundle of all <u>JBoss Tools plug-ins</u> [http://labs.jboss.com/tools/download/index.html]. You can find all necessary installation instructions on JBoss Wiki in the <u>InstallingJBossTools</u> [http://labs.jboss.com/wiki/InstallingJBossTools] section.

## 2.2. Creating a ESB Project

In this chapter we suggest a step-by-step walk-through of creating a new ESB project. Let's try to create a new JBoss ESB project.

We will show you how to use the ESB Project Creation wizard for creating a new ESB project and setting basic ESB classpath.

Select *File >New > Project...* in the main menu bar or context menu for selected project and then *ESB > ESB Project* in the dialog opened:

e	New	×
Select a wiza	ard	
<u>W</u> izards:		
type filter tex		
D 🗁 CVS		
👂 🗁 Drools		
👂 🗁 Eclipse	Modeling Framework	
🕨 🗁 ЕЈВ		=
🗢 🗁 ESB		
👬 ESB	File	
📑 ESB	Project	
👂 🗁 Exampl	e EMF Model Creation Wizards	
👂 🕞 Hiberna	ite	
0	< Back Next >	Cancel

Figure 2.1. Select a Wizard dialog

Clicking *Next* brings you to the JBoss ESB Project wizard page where a project name, ESB version and target JBoss Runtime are to be specified. Specify, for example, *helloworld* as a Project name and accept the default ESB version.

	New ESB Project Wizard
Boss ESB P Create a new	JBoss ESB project.
Project name	: helloworld
Project conte	nts:
🗹 Use <u>d</u> efa	ult
Directory:	nome/user/workspace_ES8projectSOA/helloworld    Browse
Target Runtin	ne
JBoss 4.2 R	untime 🗘 Ngw
JBoss ESB ve	rsion
4.4	\$
0	< Back Next > Bolish Cancel

#### Figure 2.2. JBoss ESB Project wizard

Clicking *Next* brings you to the ESB facet installation page where you can specify Java Source Directory and ESB Content Directory. ESB Content Directory is a folder that contains the most of artifacts that an ESB archive needs. You also can configure ESB libraries to the project by selecting a ESB runtime using one of the options:,

- 1. Use Server Supplied ESB Runtime
- 2. Select a ESB runtime from the JBoss ESB runtime list predefined in the preferences

If you choose the first option, make sure that the project has the Target JBoss Runtime set and this runtime has a ESB runtime installed.

nstall	ESB Facet		
Projec	ct Folders		
Conte	ent Directory		
esbc	content		
Java S	Source Directory		
src			
JBoss	ESB Runtime Server supplied ESB Runtime		
0	Jbossesb-4.3.GA		\$ New
0	< Back	Next >	Enish

#### Figure 2.3. Install ESB facet step

Click *Finish* and a ESB project with the default *jboss-esb.xml* will be created.

d helloworld	- lbacs ash	- IPoss ECP		
Ø src	v 😨 jboss-esb.xml	Name:	jboss-esb	
Boss ESB Runtime	Providers Services	Parameter Reload Secs:	5	
JBoss 4.2 Runtime [JBc build		Providers Name		
✓ ≥ esbcontent		ristorius t		<u>A</u> dd
⊘ IID ✓ ⊘ META-INF				Bemove
🛃 jboss-esb.xml				Edit
				Up
		-		Down
		Services Name		

#### Figure 2.4. The generated ESB project structure

## 2.3. Creating ESB Project using JBoss Tools Project Examples Wizard

JBoss Tools provides a Project Example wizard that is an easy way for users to create some kinds of projects to be used as examples with some predefined structure. Let's start creating a ESB project using this wizard.

Before creating a ESB project example create JBoss Runtime with name *JBoss 4.2 Runtime*, it will be used by your ESB project example.

Select *File >New > Others*, in the main menu bar or context menu for selected project and then *JBoss Tools > Project Examples* in the New dialog:

6	New	×
Select a wizard		
<u>W</u> izards:		
type filter text		
<ul> <li>Þ 😂 Java EE</li> <li>Þ 😂 Java Emitter</li> <li>Þ 😂 JavaScript</li> <li>Þ 😂 JBoss jBPM</li> <li>♀ ➢ JBoss Tools</li> </ul>	Templates	
📱 Project Ex	amples	
<ul> <li>MBean Co</li> <li>JBoss Tools N</li> </ul>	mponents Veb	•
0	< gack Next >	Enish Cancel

#### Figure 2.5. Select a wizard - Project Examples

Clicking *Next* brings you to the wizard page where you can select a ESB project example from the example list. Every ESB example has two projects, one is a ESB project and another is a Java project used to test the ESB project.

	New	Project Exan	nple	
Project Examp	l <b>e</b> ample			
▶ Portlet				-
▼ ESB		10 1.2303		
JBoss ESB	HelloWorld Exa	imple - ESB		
JBoss ESB	HelloWorld Exa	imple - Client		
JBoss ESB	HelloWorld Act	ion Example - E	:58	
Description:				
Project name:				
Project name: [ Project size: [				
Project name: [ Project size: [ URL: [				
Project name: [ Project size: [ URL: [				
Project name: [ Project size: [ URL: [				
Project name: [ Project size: [ URL: [				
Project name: [ Project size: [ URL: [				

#### Figure 2.6. JBoss Tools ESB Project Examples

Select *JBoss ESB HelloWorld Example* ESB and Client project, and then click *Finish*, then you will get two projects created.



# Figure 2.7. JBoss ESB Project Examples: helloworld and helloworld\_testclient

Deploy the HelloWorld ESB project and run a test class in the client Java project to see the test result in the Console view.

## 2.4. Deploying a ESB Project

In this chapter youwill see how to deploy a ESB project using the WTP deployment framework.

Before deploying the project, open the JBoss Server View by selecting *Window > Show View > Other > Server > JBoss Server View*, create a JBoss Server in the Server view and start it, and then right click the created JBoss server, select *Add and Remove Projects*, and add the ESB projects you want to deploy from the left side to the right side in the opened dialog.

love projects to the right t	o configure them on the server	and the second se
vailable projects:		<u>Configured projects:</u>
		🕼 helloworld
	Add >	
	< <u>R</u> emove	
	Add All >>	
	<< Remove All	

#### Figure 2.8. Add and Remove Projects

Click *Finish* to add the project to the server. You also can drag the ESB project from the Project View to the server.

🖹 Problems 🧟 Tasks	🤪 JBoss Serve	r View 🕱	蓉	0	${\rm Im}_{\rm s}$	
Server	State	Status				
🤯 JBoss 4.2 Server	🔓 Stopped	Synchronized				
🛃 File Filters						
🗢 🧧 Modules						
🚺 helloworld						
▶ i Event Log						
👂 🖹 XML Configuratio	'n					
🖄 Inactive Categori	es					
🚻 JMX Console						

#### Figure 2.9. JBoss Server View

Thus, you have just added the ESB project to the JBoss server module list. Right click the JBoss Server and select *Publish* to publish the project on the server. You can check the deploying result in the Console view.

## 2.5. Creating a ESB File

In this chapter we suggest a step-by-step walk-through of creating your own simple file. Let's try to organize a new ESB file.

We will show you how to use the Creation wizard for creating a new ESB file.

At first you should open any project. Select File > New > Other... in the main menu bar or context menu for selected project and then ESB > ESB File in the New dialog:

New	
Select a wizard	
Create a ESB XML File	
<u>W</u> izards:	
type filter text	
🕨 🗁 General	
Connection Profiles	=
CVS	
🕨 🗁 Eclipse Modeling Framework	
EJB	
▼ 🗁 ESB	
🗭 ESB File	
Example EMF Model Creation Wizards	
k 🐟 rei - r	
	aish Cancel
Gen Gent D	

#### Figure 2.10. Select a wizard - ESB File

Clicking *Next* brings you to the wizard page where a folder, a name and a version for the file should be specified. Choose, for example, *jboss-esb.xml* as the name and accept the selected projects folder and the default version.

0	New ESB File	×
ESB File		
Folder:*	/HelloWorld	Browse
Name:*	jboss-esb	
Version:*	1.0.1	\$
0	< <u>B</u> ack Next > Finish	Cancel

#### Figure 2.11. Folder, Name and Version for ESB file

Thus, your file will be created in the selected projects folder by default. If you want to change the folder for your future file click *Browse...* button to set needed folder or simply type it.

Clicking on *Finish* results in the file being generated. The wizard creates one xml file.

## 2.6. Configuring ESB Runtime in Preferences

In this chapter you will know how to predefine a JBoss ESB runtime on the Preferences page.

You may already know, there are two ways to set JBoss ESB runtime when creating a ESB project, one is to use the project target JBoss runtime, and another is to select a JBoss ESB runtime predefined in JBoss Tools preferences. Let's configure it.

Select *Window >Preferences > JBoss Tools > JBoss ESB Runtime*, to open the JBoss ESB Runtime Preferences page where you can add, remove and Edit a JBoss ESB runtime.

6	Preferences	×
type filter text	JBoss ESB Runtimes	¢• ¢• •
Help     HQL editor	Name Versio Path	se/jbossesb-4.3.GA
<ul> <li>✓ Java</li> <li>▲ Appearance</li> </ul>		<u>E</u> dit <u>R</u> emove
<ul> <li>✓ Build Path</li> <li>Classpath Variable</li> <li>User Libraries</li> <li>Vode Style</li> <li>Compiler</li> <li>Debug</li> <li>Editor</li> <li>Installed JREs</li> <li>JUnit</li> <li>Properties Elies Edito</li> </ul>		
<ul> <li>▷ JavaScript</li> <li>▷ JBoss jBPM</li> <li>▽ JBoss Tools</li> <li>JBoss ESB Runtimes</li> <li>▷ Web</li> <li>JPA</li> </ul>		
<ul> <li>Plug-in Development Project Archives</li> <li>Report Design</li> <li>Run/Debug</li> <li>Server</li> </ul>		
0		OK Cancel

#### Figure 2.12. JBoss ESB Runtimes

Select *Add* to open a dialog where you can specify the JBoss ESB runtime location, name and version number. You also can customize the libraries of the runtime by checking the *Customize JBoss ESB Runtime jars* checkbox.

E	New JBoss ESB Runtime
JBoss ESB Ru	Intime
Create a JBoss	s ESB Runtime
Name:	jbossesb-server-4.4.GA
Version	4.4 🗢
Home Folder:	//JBossESB/jbossesb-server-4.4.GA Browse
Customiz	e JBoss ESB runtime jars
٩	Finish
Û	Einish

#### Figure 2.13. Configure new JBoss ESB Runtime

The new JBoss ESB Runtime will be configured. Click OK to finish and save the preferences. You can use the configuration when creating a JBoss ESB project.

When a ESB runtime is configured for your ESB project you are able to change it to any other using the classpath container page for ESB runtime. To do that, turn to the Package Explorer view and right-click the "JBoss ESB Runtime" library. Select *Properties* and a table listing all available JBoss ESB runtimes will appear:

😔 Properties	s for JBoss 4.2 Runtime [jboss-soa-p.4.3.0]		×
type filter text	Server Library		•
Classpath Container	Select a server runtime to add to the classpath Select a <u>r</u> untime to add to the classpath:		
	🤯 jBoss 4.2 Runtime		
	🤪 JBoss 4.2 Server Adapter Runtime		
	🖓 jboss-soa-p.4.3.0		
0	ок	Cancel	

#### Figure 2.14. Classpath Container Page to change ESB runtime

Choose one of them to set to the ESB project and click Ok.

## 2.7. Using and Configuring SOA Platform

In this chapter you will know what is JBoss Enterprise SOA Platform and how you can configure it to use for your ESB projects.

JBoss Enterprise SOA Platform delivers a flexible, standards-based platform to integrate applications, SOA services, business events and automate business processes. The SOA Platform integrates specific versions of JBoss ESB, jBPM, Drools and the JBoss Enterprise Application Platform that are certified to work together in a single supported enterprise distribution.

Having configured JBoss Enterprise SOA Platform for your ESB project you don't need to install and configure ESB server and runtime as they are already included.

Check here to find more details on the platform: <u>JBoss Enterprise SOA Platform</u> [http:// www.jboss.com/products/platforms/soa] and <u>JBoss Enterprise SOA Platform Component Details</u> [http://www.jboss.com/products/platforms/soa/components].

You can find out what is SOA here: <u>Basics of SOA</u> [http://www.jboss.org/jbossesb/resources/ SOABasics.html] and <u>SOA and EOA</u> [http://www.jboss.org/jbossesb/resources/SOAEOA.html]. To configure the JBoss Enterprise SOA platform select *Window > Preferences > Server > Runtime Enironments*, that will open the Server Runtime Environments Preferences page where you can add, remove and edit a Server Runtime Environment.

<b>8</b>	Preference	15	×
type filter text	Server Runtime Enviror	iments	⇔- ⇔- ▼
▷ General ▷ Ant	Add, remove, or edit serve	r runtime environments. nts:	
<ul> <li>Data Management         <ul> <li>Drools Preferences</li> <li>FreeMarker Editor</li> <li>Help</li> <li>HQL editor</li> <li>Install/Update</li> <li>Java</li> <li>JavaScript</li> <li>JBoss jBPM</li> <li>JBoss jBPM</li> <li>JBoss Tools</li> <li>JPA</li> <li>Plug-in Development</li> <li>Project Archives</li> <li>Run/Debug</li> <li>Server</li> <li>Audio</li> <li>Launching</li> </ul> </li> <li>Runtime Environments</li> <li>Service Policies</li> </ul>	Name JBoss 4.2 Runtime JBoss 4.2 Server Adapt	Type JBoss 4.2 Runtime er Rur JBoss 4.2 Runtime	Add Edit Bemove Search
▶ Spring ▶ Team			
0		ОК	Cancel

#### Figure 2.15. Configure new Server Runtime Environment

Select *Add*, choose *JBoss 4.2 Runtime* as a type of runtime environment, check the *Create a new local server* checkbox and click *Next*:

🛞 New Server Runtime Er	nvironment 💌
New Server Runtime Environment	
Define a new server runtime environment	
	Developed additional conver adoptors
Select the type of runtime environment:	Download additional server adapters
type filter text	
🗢 🗁 JBoss, a division of Red Hat	<u>^</u>
JBoss 3.2 Runtime	
JBoss 4.0 Runtime	
🤯 JBoss 4.2 Runtime	
🤪 JBoss 5.0 Runtime	=
JBoss Deploy-Only Runtime	
ObjectWeb	~
JBoss Application Server 4.2	
☑ <u>C</u> reate a new local server	
⑦ < <u>B</u> ack <u>Next</u> >	Enish Cancel

#### Figure 2.16. Type of Server Runtime Environment

On the next step you can specify a name of the server runtime environement and browse to its location. Click *Finish* to add the server runtime environment.

)	New Server Runtime Environment	
Boss Runtime Wiz	zard	
A JBoss Server runtir It can be used to set as well as by a "serv	me references a JBoss installation directory. t up classpaths for projects which depend on this runtii rer® which will be able to start and stop instances of JBo	me, oss.
Name		
jboss-soa-p.4.3.0		
Home Directory		
/home/user/jbdevs	tudio/jboss-soa-p.4.3.0/jboss-as/	Browse
RE		
jdk1.5.0_12		↓ □ □ □ JRE
Configuration		
🏐 minimal		
🌐 all		
🤃 default		
production		
0		Canad

#### Figure 2.17. New Server Runtime Environment Details

Now you have your SOA platform configured. To check the configuration create a ESB Project using instructions described *here*. As a result you will have two projects created:



#### Figure 2.18. Helloworld Projects Created

Then you will need to add JBoss ESB libraries to your projects to configure the SOA server runtime exactly for your projects. Right-click on your project, select *Build Path > Add Libraries*:

Ne <u>w</u>		>	
Go <u>I</u> nto			
Open in <u>N</u> ew Window			
Open Type Hierarchy	F	-4	
Sho <u>w</u> In	Shift+Alt+W	>	
<u>[]</u> <u>С</u> ору	Ctrl+	-C	
a Copy Qualified Name			
🛅 Paste	Ctrl+	v	
X Delete	Dele	te	
<u>B</u> uild Path		>	🍇 Link <u>S</u> ource
<u>S</u> ource	Shift+Alt+S	>	💕 New Source Folder
Refac <u>t</u> or	Shift+Alt+T	>	(# Line on Source Felder
Import		_	Add External Archives
A Export			Add Libraries
Export		_	
🔗 Re <u>f</u> resh	F	-5	🍇 <u>C</u> onfigure Build Path
Clo <u>s</u> e Project			
Close <u>U</u> nrelated Projects			
Assign Working Sets			
😯 Convert to Drools Project			
<u>B</u> un As		>	
<u>D</u> ebug As		>	
Profile As		>	
∨alidate			
Team		>	
Comp <u>a</u> re With		>	
Restore from Local Histor	у		
JBoss Tools	-	>	
Spring Tools		>	
Web Development Tools		>	
PDE To <u>o</u> ls		>	
P <u>r</u> operties	Alt+Ent	er	
		_	

#### Figure 2.19. Add Libraries

Choose JBoss ESB Libraries and click Next:

<b>9</b>	Add Library		X
Add Library		<u> </u>	
Select the library type to add.		a la companya de la compa	)
Connectivity Driver Definition			
EAR Libraries			
J2EE 1.3 libraries			
J2EE 1.4 libraries			
JBoss EJB3 Libraries			
JBoss ESB Libraries			
JEE 5.0 libraries			
JRE System Library			
JSF Libraries			
JUnit			
Plug-in Dependencies			
Server Runtime			
User Library			
Web App Libraries			
			_
?	ack <u>N</u> ext >	Einish Cancel	

## Figure 2.20. ESB Libraries

Select the necessary runtime to add to the project classpath:

JBoss ESB Library	JBoss ESB Library					
Select a ESB runtime to add to the project classpath						
Name	Runtime Type					
💜 jboss-soa-p.4.3.0	Server Contained					
	>					
⑦ < <u>B</u> ack <u>N</u> ext >	Einish Cancel					

#### Figure 2.21. Select a ESB runtime

#### Click Finish.

Now you can deploy your Helloworld project to the server and run a test class in the client Java project to see the test result in the Console view.

# **ESB Editor**

ESB editor has lots of useful features, they are described in details in this chapter. In addition you'll get to know with how ESB Editor uses combined visual and source editing of esb files.

## 3.1. ESB File Editor

ESB File Editor is a powerful and customizable tool. ESB File Editor allows developing an application using ESB technology.

ESB file editor has two tabs: Tree and Source.

You can switch to Tree. The Tree view for the editor displays all ESB artifacts in a tree format. By selecting any node you can see and edit its properties which will appear in the right-hand area. For example, a Provider:

ooss-esb	- Jms Provider		
🗏 jboss-esb.xml*	Name:	JBossMQ	
	Connection Eactor	ConnectionE	ston
マ 🛠 JBossMQ	Connection Factor	y: ConnectionFa	ctory
<ul> <li>property</li> </ul>	<ul> <li>Properties</li> </ul>		
StartGwChannel	name Value	e	<u>A</u> dd
	property 0		Remove
<ul> <li>time</li> </ul>			
🏹 Filter			<u>E</u> dit
IntakeServiceEsbChannel			Up
IscountServiceEsbChannel			Down
ShippingServiceEsbChannel			2000
IstributionServiceEsbChannel	id		
🛛 🗁 Services	StartGwChannel		<u>A</u> dd
StarterService	StartEsbChannel		<u>R</u> emove.
▽ 🌺 IntakeService	intakeServiceEst	Channel	Edit
▽ 🗁 Listeners	discountService	EsbChannel	Lont
👂 🔞 ESB-Listener	shippingService	sbChannel	<u>Цр</u>
	conciergeServic	eEsbChannel	Down
al dumpl	distributionServic	eEsbChannel	
property			

#### Figure 3.1. Tree View

You can easily switch from Tree to Source by selecting the Source tab at the bottom of the editor and work in Source view.



#### Figure 3.2. Source View

The Source view for the editor displays a text content of the ESB file. It is always synchronized with Tree view, so any changes made in one of the views will immediately appear in the other.

No matter what view you select, you get full integration with Outline view. For example, you can work in the Source view with the help of the Outline view. The Outline view shows a tree structure of the ESB file. Simply select any element in the Outline view and it will jump to the same place in the Source editor, so you can navigate through the source code with Outline view.



#### Figure 3.3. Outline View

Adding, editing or deleting of some artifacts operations are available right in the Tree view . Rightclick any node and select one of the available actions in the context menu. For example, you can easily add a new Provider:



#### Figure 3.4. Adding New Provider

You can easily add a new Service too:

🛐 *jboss-esb.xml හි				- 0
JBoss ESB Editor				
✓ jboss-esb			<ul> <li>Services</li> </ul>	
▽ 📃 jboss-esb.xml*			name	
👂 🗁 Providers			StarterService	<u>A</u> dd
🗢 🗁 Services	Add Service.		IntakeService	Bemove
StarterService	(D. Dante	CHLLV		
🗢 🌺 IntakeService	III Paste	Ctrl + V		Edit
arr 🗁 Listeners	💢 Delete	Delete		<u>U</u> р
マ 🍓 ESB-Lister ────────────────────────────────────	Properties			Down
🗢 🌼 dumpl				
<ul> <li>propert</li> </ul>	у			
Tree Source				

#### Figure 3.5. Adding New Service

Satistic states and s	- 0
JBoss ESB Editor	
▼ Jboss-esb	
Providers	name
	ESB-Listener Add
	Bemove
🗢 🗁 Listeners 🛛 New	Listener
ESB-Lis	Scheduled Listener
Actions Paste Ctr	JCA Gateway
	elete JMS Listener
	FS Listener
B ESB-Listerier	FTP Listener
🗢 🍓 Actions	SQL Listener
👂 🍓 dump1	Hibernate Listener
	JBR Listener
Tree Source	Groovy Listener

The same way you can create a listener for service and other elements of ESB:

#### Figure 3.6. Adding New Listener for Service

The same actions can be done in the right part of Tree view tab (Form editor) using Add, Edit and Remove buttons.



In order to add a new generic Action to your ESB XML file you should select the Actions node under the Services, then right-click and choose *New* > *Generic Action*.

#### Figure 3.7. Adding New Action in the Tree View

Or instead make use of Add... button in the Form editor on the left.

🔄 jboss-esb.xml 🛛			- 0	
JBoss ESB Editor				
▼ jboss-esb	▼ Actions List			
<ul> <li>✓  jboss-esb.xml</li> <li>✓ ➢ Providers</li> <li>▷ <b>%</b> JBossMQ</li> <li>✓ ➢ Services</li> </ul>	MEP: Actions Name		<b>~</b>	
🗢 🍓 SimpleListener	action1	Add	Gen	eric Action
Listeners		Bemo	Obje	act invoke
S action1			t Byte P Lone Obje Smo Mes XStr Con Grou	e Array To String g To Date ect To CSV String ect To XStream poks Transformer sage Persister ream To Object mmand Interpreter poyy Action Processor
Tree Source			Agg Con Stat Stat Noti SOA SOA	regator tent Based Router ic Router fier fier IP Processor IP Client tem Println

#### Figure 3.8. Adding New Action in the Form Editor

As you can see on the bath figures above, the context menu will also prompt you to insert one of the Actions that are supplied out-of-the-box with JBoss ESB. After choosing one an appeared New Action wizard will ask you to fill out a name field and other fields specific for each Action property. For example, for *Content Based Router* Action the wizard looks as follows:

۲	Add Content Based Router	×
ESB Content Bar Attribute Name m	sed Router nust be set.	0
Name:*		
Process:		~
Rule Set:*		
Rule Language:		
Rule Reload:	Default(false)	~
0	Einish	Cancel

#### Figure 3.9. New Action Wizard

After confirming creating the Action you can see it in the Tree under the *Actions* node and preview as well as edit its settings in the Form editor on the left.

💐 *jboss-esb.xml 🕱				- 0	
JBoss ESB Editor					
▼ jboss-esb	- Content Based Router Action				
≂  jboss-esb.xml	Name:	ContentB	asedRouter		
<ul> <li>▷ ➢ Providers</li> <li>▽ ➢ Services</li> <li>▽ 獭 SimpleListener</li> <li>▷ ➢ Listeners</li> </ul>	Class:	org.jboss.soa.esb.actions.ContentBasedRouter			
	Rule Set:	MyESBRoles-XPath.drl XPathLanguage.dsl			
	Rule Language:				
✓ log Actions ✓ log ContentBa	Rule Reload:	true		~	
<ul> <li>express</li> </ul>	Process:	split		~	
	▼ Route List				
	Destination Nar	me	Service Name	<u>A</u> dd	
	express		ExpressShippingService	Bemove	
				<u>E</u> dit	
				Up	
				Down	
Tree Source					

#### Figure 3.10. Form Editor for Content Based Router

ESB editor can recognize some specific objects. On the figure you can see *org.jboss.soa.esb.actions.ContentBasedRouter* in the *Class* section.

## 3.2. ESB Editors Features

JBoss ESB tooling has powerful editor features that help you easily make use of content and code assist.

#### 3.2.1. ESB syntax validation

When working in JBoss ESB editor you are constantly provided with feedback and contextual error checking as you type. In the Source viewer, if at any point a tag is incorrect or incomplete, an error will be indicated next to the line and also in the Problems view below.

#### 3.2.2. Support for XML Schema

JBoss ESB Framework fully supports XML files based on schemas as well as DTDs.

#### 3.2.3. Content Assist for ESB XML file

When you work with any ESB XML file Content Assist is available to help you. It provides pop-up tip to help you complete your code statements. It allows you to write your code faster and with

more accuracy. Content assist is always available in the Source mode. Simply type *Ctrl-Space* to see what is available.

Content Assist for ESB XML file:



#### Figure 3.11. Content Assist for ESB XML file

Content Assist for attributes:

ואַ +jboss-esb.xml מ	- 0
<pre><jms-bus busid="`snippingserviceEsbChannet'/"> <jms-bus busid="`conciergeServiceEsbChannet'/">   </jms-bus></jms-bus></pre>	
<pre> Rservice &gt;     <li><listene <="" <jms-li="" <li="" category="" listen="" or="" service=""><li></li></listene><td>Attribute : category The service category which will be used to store a reference to this service in the registry. Data Type : string</td></li></pre>	Attribute : category The service category which will be used to store a reference to this service in the registry. Data Type : string
Tree Source	

#### Figure 3.12. Content Assist for attributes:

#### 3.2.4. Synchronized Source and Visual Editing

ESB file can be edited in either source or extra visual modes at the same time.

JBoss Tools provide you two different editors to speed your development: a graphical view (Tree) and source (Source). At the same time, you always have full control over esb source file. Any changes you make in the source view will immediately appear in the tree view. Both views are synchronized, you can edit the file in any view.

🔒 *jboss-esb.xml 🛛	•	
JBoss ESB Editor		
▼ jboss-esb	▼ Jboss Esb	
▼ 🕱 jboss-esb.xml*	Noss-esb.xml	- 0
arroviders 🧁 Providers	xml version="1.0"?	Ê
⊽ 🛠 JBossMQ	<jbossesb< th=""><th></th></jbossesb<>	
<ul> <li>property</li> </ul>	<pre>xmlns="http://anonsvn.labs.jboss.com/labs/jbossesb/trunk/product/etc/schemas/xml/jbo xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemalocation="http://anon xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemalocation="http://www.w3.org/2001"/ xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemalocation="http://www.w3.org/2001"/ xmlns:xsi="http://www.w3.org/2001"/ xmlns:xsi="http://www.w3.org/2001"/ xmlns:xsi="http://www.w3.org/2001"/ xmlns:xsi="http://www.w3.org/2001"/ xmlns:xsi="http://www.w3.org/2001"/ xmlns:xsi="http://www.w3.org/2001"/ xmlns:xsi="http://www.w3.org/2001"//www.w3.org/2001"//www.w3.org/2001"//www xmlns:xsi="http://wwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwww</pre>	SS NS
▷ 💠 StartGwChannel	<pre><pre>cproviders&gt;</pre></pre>	
マ ₀ StartEsbChannel	<pre><jms-provider connection-factory="ConnectionFactory" name="JBossMQ"></jms-provider></pre>	
• time	<pre><pre>spropercy value= 0 /&gt; </pre> <pre><pre>ims-bus busid="StartGwChannel"/&gt;</pre></pre></pre>	
🝸 Filter	<jms-bus busid="StartEsbChannel"></jms-bus>	
od intakeServiceEsbC	<property name="time" value="0"></property> 	
Ø od discountServiceEs	<jms-bus busid="intakeServiceEsbChannel"></jms-bus>	
ShippingServiceEs	<pre><jms-bus busid="discountServiceEsbChannel"></jms-bus> <ims-bus busid="shinpingServiceEsbChannel"></ims-bus></pre>	
	<pre><jms-bus busid="conciergeServiceEsbChannel"></jms-bus></pre>	
V > Services		=
b StarterService	<pre><services></services></pre>	
	<pre><service category="starter" description="starter" name="StarterService"></service></pre>	
	<pre><listeners> <ims.listener_busidref="startesbchannel"_name="esb.listener"></ims.listener_busidref="startesbchannel"_name="esb.listener"></listeners></pre>	
✓ @ ESB-Listener		
Filter	<pre><service <listeners="" category="intake" description="this" intake="" is="" name="intakeservice" service=""></service></pre>	1
	<pre><jms-listener busidref="StartEsbChannel" name="ESB-Listener"></jms-listener></pre>	
Þ 🗞 dump1		
-	<pre><action class="dumpClass" name="dump1"></action></pre>	
Iree Source	<pre><pre>operty name="property" value="0"/&gt; </pre></pre>	
		-
		•
	Tree Source	

#### Figure 3.13. Two Views are Synchronized

The last chapter covers capabilities on how you can use ESB editor.

In summary, this reference supplies you with all necessary information on the functionality that JBoss ESB Editor provides for work with JBoss ESB.