# Getting Started with JBoss Developer Studio

ISBN: Publication date: April 2008

## Getting Started with JBoss Developer Studio

PDF version

## Getting Started with JBoss Developer Studio

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1. Getting Started with JBoss Developer Studio	. 1
1.1. What is JBDS?	1
1.2. Configuring Your Java Environment	1
1.2.1. Installing and Configuring 32-bit Sun JDK 5.0 on Linux	. 1
1.2.2. Installing and Configuring 32-bit Sun JDK 5.0 on Microsoft Windows	3
1.3. JBoss Developer Studio Installation	. 4
1.4. JBoss Developer Studio and JBoss Tools	10
1.4.1. What is the difference?	10
1.4.2. JBoss Tools Installation	11
1.5. Welcome to JBoss Developer Studio	12
1.6. Upgrading	16
1.7. Uninstalling	16
1.8. Support	16
1.9. Other relevant resources on the topic	17
2. Manage JBoss AS from JBoss Developer Studio	19
2.1. How to Manage the JBoss AS Bundled in JBDS	19
2.1.1. Starting JBoss Server	19
2.1.2. Stopping JBoss Server	20
2.1.3. Server Container Preferences	21
2.2. How to Use Your Own JBoss AS Instance with JBDS	22
2.2.1. JBoss AS Installation	22
2.2.2. Adding and Configuring JBoss Server	23
3. Write Your First Project with JBoss Developer Studio	29
3.1. Create a Seam Application	29
3.1.1. Start Development Database	29
3.1.2. Create and deploy Seam Web Project	29
3.1.3. Start JBoss Application Server	40
3.1.4. Workshop Project Code Overview	42
3.2. Seam Action Development	43
3.2.1. Create a New Seam Action	43
3.2.2. Test Seam Action	44
3.2.3. Modify Seam Action User Interface	47
3.3. Declarative Security	49
3.3.1. Edit Login Authentication Logic	49
3.3.2. Secure Seam Page Component	49
3.4. Browsing Workshop Database	51
3.4.1. Database Connectivity Setup	51
3.4.2. Browse Workshop Database	52
3.5. Database Programming	54
3.5.1. Reverse Engineer CRUD from a Running Database	54
3.5.2. Use Hibernate Tools to Query Data via JPA	58
3.5.3. Use Hibernate Tools to visualize the Data Model	64
3.6. Rich Components	66
3.6.1. Add a Richfaces component to the CRUD Application	66

4. Developing a simple JSP web application	71
4.1. Setting Up the Project	71
4.2. Creating JSP Page	73
4.2.1. Editing a JSP Page	74
4.2.2. web.xml file	76
4.2.3. Deploying the project	77
4.2.4. JSP Page Preview	80
4.2.5. Launch JSP Project	81
5. RAD development of a simple JSF application	83
5.1. Setting up the project	83
5.2. Creating JSP Pages	84
5.3. Creating Transition between two views	86
5.4. Creating Resource File	87
5.5. Creating Java Bean	89
5.6. Editing faces-config.xml File	93
5.7. Editing the JSP View Files	94
5.7.1. Editing inputnumber.jsp page	94
5.7.2. Editing success.jsp page 1	01
5.8. Creating index.jsp page 1	03
5.9. Running the Application 1	03
6. Project Examples 1	09
6.1. Downloading a Project Example 1	09
6.2. Quick Fixes 1	11
7. FAQ 1	15
7.1. What should I do if Visual Page Editor does not start under Linux 1	15
7.2. Do I need to have JBoss Server installed to run JBoss Developer Studio? 1	15
7.3. I have an existing Seam 1.2.1 project. Can I migrate/import the project to a JBDS	
Seam project? 1	16
7.4. I have an existing Struts or JSF project. Can I open the project in JBDS? 1	16
7.5. Can I import a .war file? 1	16
7.6. Is it possible to increase the performance of Eclipse after installing your product?. 17	16
7.7. How can I add my own tag library to the JBoss Tools Palette? 1	17
7.8. How to get Code Assist for Seam specific resources in an externally generated	
project? 1	17
7.9. How to import an example Seam project from jboss-eap directory? 1	17
7.10. Is a cross-platform project import possible for JBDS? 1	17
8. Further Reading 1	19

# Getting Started with JBoss Developer Studio

## 1.1. What is JBDS?

JBoss Developer Studio is a set of eclipse-based development tools that are pre-configured for JBoss Enterprise Middleware Platforms and Red Hat Enterprise Linux. Developers are not required to use JBoss Developer Studio to develop on JBoss Enterprise Middleware and/or Red Hat Linux. But, many find these pre-configured tools offer significant time-savings and value, making them more productive and speeding time to deployment.

This guide covers the first steps to get started working with JBoss Developer Studio. You will learn how to install and configure necessary software for your OS (currently Linux, Microsoft Windows or Mac OSX).

Thus this guide will provide you with detailed info on how to start JDK, JBDS and JBoss Tools.

## **1.2. Configuring Your Java Environment**

You must have a working installation of JDK 5 before you install JBoss Developer Studio. Currently it will only fully work with a 32-bit JVM, not a 64-bit JVM. On a 64-bit JVM the visual editor fails to launch because of feature of OS architecture. Thus in this guide we will show you how to install a 32-bit Sun JDK 5.0 on a Linux Platform and Microsoft Windows Platform.

## 1.2.1. Installing and Configuring 32-bit Sun JDK 5.0 on Linux

To install 32-bit Sun JDK 5.0 on Linux and configure it, you should follow the next steps:

- Download the <u>Sun JDK 5.0 (Java 2 Development Kit)</u> from Sun's website. Choose "JDK 5.0 Update <x>" (where "x" is the latest update number) for download and then select "Red Hat Package Manager in self-extracting" file for Linux. Read the instructions on Sun's website for installing the JDK.
- If you don't want to use SysV service scripts you can install the "self-extracting file" for Linux instead of choosing the "RPM in self-extracting" file. In that case you can skip the next step mentioned here. But it is recommended to use the SysV service scripts for production servers.
- Download and install the appropriate -compat RPM from JPackage <u>here</u>. Please ensure you choose a matching version of the -compat package to the JDK you've installed.
- Create an environment variable that points to the JDK installation directory and call it JAVA\_HOME. Add *\$JAVA\_HOME/bin* to the system path to be able to run java from the

command line. You can do this by adding the following lines to the .bashrc file in your home directory.

#In this example /usr/java/jdk1.5.0\_11 is the JDK installation directory. export JAVA\_HOME=/usr/java/jdk1.5.0\_11 export PATH=\$PATH:\$JAVA\_HOME/bin



#### Note:

#If you have JDK already installed and added in your system path, you should add \$JAVA\_HOME/bin before the old \$PATH (not after it) so that the new version of JDK can be found first, i. e. export PATH=\$JAVA\_HOME/bin:\$PATH This way, the machine will pick up the new JVM first. You only need to run "alternative" as a safe guard for the right JVM.

Set this variable for your account doing the installation and also for the user account that will run the server.

 If you have more than one version of JVM installed on your machine, make sure you are using the JDK 1.5 installation as the default java and javac. You can do this using the alternatives system. The alternatives system allows different versions of Java from different sources to coexist on your system.

## 1.2.1.1. Select alternatives for java, javac and java\_sdk\_1.5.0

• As a root user, type the following command at the shell prompt and you should see something like this:

[root@vsr ~]\$ /usr/sbin/alternatives --config java There are 2 programs that provide 'java'. Selection Command 1 /usr/lib/jvm/jre-1.4.2-gcj/bin/java

\*+ 2 /usr/lib/jvm/jre-1.5.0-sun/bin/java Enter to keep the current selection[+], or type selection number:

Make sure the Sun version [jre-1.5.0-sun in this case] is selected (marked with a '+' in the output), or select it by entering its number as prompted.

• Repeat the same for javac and java\_sdk\_1.5.0.

You should verify that java, javac and java\_sdk\_1.5.0 all point to the same manufacturer and version.



#### Note:

You can always override this step by setting the JAVA\_HOME environment variable as explained in the previous step.

• Make sure that the java executable is in your path and that you are using an appropriate version. To verify your Java environment, type "java -version" at the shell prompt and you should see something like this:

[root@vsr ~]\$ java -version java version "1.5.0\_11" Java(TM) 2 Runtime Environment, Standard Edition (build 1.5.0\_11-b03) Java HotSpot(TM) Client VM (build 1.5.0\_11-b03, mixed mode, sharing)

## 1.2.2. Installing and Configuring 32-bit Sun JDK 5.0 on Microsoft Windows

To install and configure 32-bit Sun JDK 5.0 on Microsoft Windows, follow these steps:

Download the <u>Sun JDK 5.0 (Java 2 Development Kit</u>) from Sun's website. Choose "JDK 5.0 Update <x>" (where "x" is the latest update number) for download and then select your Windows Platform options to perform the installation.

• Create an environment variable called JAVA\_HOME that points to the JDK installation directory, for example:



In order to run java from the command line, add the *jre\bin* directory to your path, for example:

C:\Program Files\Java\jdk1.5.0\_11\jre\bin

To do this, open the *Control Panel* from the *Start* menu, switch to Classic View if necessary, open the System Control Panel applet (*System*), select the *Advanced* Tab, and click on the *Environment Variables* button.

Now, when 32-bit Sun JDK 5.0 has been successfully installed, we can pass on to the next step.

## **1.3. JBoss Developer Studio Installation**

This chapter will provide you with detailed information on how to install JBoss Developer Studio.

JBDS comes with a simple installer, bundled with tested/pre-configured versions of Eclipse, WTP, JBossEAP, Seam, and SpringIDE. Thus, to start perform the next steps:

- First of all you need the appropriate installation file for your platform from <u>Red Hat website</u>.
- Then run in console:

java -jar jbdevstudio-linux-gtk-2.0.0.GA.jar

• Follow the instructions presented by the installation wizard:

	JBoss Developer Studio GA	
Introduction Step 1 of 10		Jacob DEVELOPER STUDIO
A Please read the following infor	mation:	
This installer will guide you t	hrough the installation of <b>JBoss De</b>	veloper Studio GA.
It is strongly recommended t	hat you quit all programs before cor	ntinuing with this installation.
Click the "Next" button to pro previous screen, click the "Pr	oceeded to the next screen. If you wa evious" button.	int to change something on a
You may stop this installatio	n at any time by clicking the "Quit" t	outton.
JBoss, a division of Red Hat		
		🜍 Next 😡 Quit

## Figure 1.1. JBoss Developer Studio Installation Wizard

- Provide the installation path
- Select Java VM

JBoss Developer Studi	io GA
Select Java VM Step 4 of 10	JBOSS DEVELOPER STUDIO
JBoss Developer Studio needs Java 5 and does not work with gij java	a.
O Default Java VM	
Specific Java VM	
/usr/java/jdk1.5.0_12/jre	📔 Browse
Boss, a division of Red Hat	
	🕞 Previous 🜍 Next 😣 Quit

#### Figure 1.2. Select Java VM



Selecting Specific Java VM you can provide the path to non-default Java VM.



JBoss Developer Studio needs Java 5 and "gij" isn't available on every platform.

• Installation process includes JBoss Enterprise Application Platform. Select Yes to use it in JBoss Developer Studio. This step lets you configure locally available JBoss Application Servers:

8	Ĺ	Boss Dev	veloper Studio 2.0.0.CR1	_×
JBoss Enterpris	e Appl	ication	Platform	Here DEVELOPER STUDIO
Developer Studio include <ul> <li>Yes, and have it read</li> <li>No</li> </ul> Add Servers you want to	es JBoss Ent y for use in be configu	erprise App Developer red in Deve	plication Platform. Would you like to install it? Studio Joper Studio.	
Name	Type	Version	Location	Find
				Add
				Remove
IRose a division of Ded Hat				
jboss, a unision of Red Hat			G Previous	🔾 Next 😡 Quit

### Figure 1.3. JBoss Enterprise Application Platform Installing

• You can fill the list automatically using the *Find* button: click *Find*, select a folder where search of available JBoss Application Servers should be started and click on *Ok*:

	Select JBoss AS In	stallation Root F	older 🗙
Look <u>i</u> n: 📔 u	ser	-	0 🕈 📔 💷
🔁 Desktop		🔁 Pictures	6
Documents		🔁 Public	E
🔁 Eclipse		🔁 Templates	E
🔁 Examples		🔁 Videos	6
📄 jbdevstudio	)	🔁 work	6
📄 maven-2.0	.1	🖹 workspace	6
🔁 Music		🔁 workspace1	6
🖹 NewFolder		🔁 workspace_23	E
•			•
File <u>N</u> ame:	/home/user		
Files of Type:	All Files		-
			Ok Cancel

Figure 1.4. Finding Servers in the Selected Directory

• All available servers in the selected directory will be added to the list with the following information specified: Name, Type, Version and Location.

<b>.</b>		JBoss De	eveloper Studio 2.0.0.CR1	_ ×
JBoss Enterpris	e Appl	ication	Platform	JBSS DEVELOPER STUDIO
Developer Studio include • Yes, and have it read No Add Servers you want to	s JBoss Ent y for use in be configu	terprise Ap Developer	plication Platform. Would you like to install it? r Studio eloper Studio.	
Name	Type	Version	Location	Find
10055-45	~	7.5	/nome/user/jbuevsiuulo/jbuss-sua-p.4.5.0/jbuss-	Add Edit Remove
JBoss, a division of Red Hat			• Previous	Next 😡 Quit

Figure 1.5. List of Servers Added

• You can also add servers one by one using the *Add* button:

	Add Server	×
Server Add Serve	r	<u></u>
Location: Name: Type: Version:	○ EAP ○ SOA-P ○ AS	Browse
		Ok Cancel

Figure 1.6. Add Server to be Configured

Click on *Browse* and select the server location. Fields Name, Type and Version will be filled in automatically:

	Add Server	X
Server Add Server		6
Location: Name: Type: Version:	/home/user/jbdevstudio/jboss-eap jboss-eap • EAP  SOA-P  AS 4.3 •	Browse
		Ok Cancel

#### Figure 1.7. Specify Server Location

Click on Ok. The server is added to the list with the details on its type, version and location.

The *Remove* button will the remove the selected server from the list. If necessary, you can edit the server details clicking on the *Edit* button:

	Edit Server 🗙
Server Edit Selecte	ed Server
Location: Name: Type: Version:	/user/jbdevstudio/jboss-soa-p.4.3.0/jboss-as Browse jboss-as O EAP O SOA-P O AS 4.3 V
	OK Cancel

### Figure 1.8. Edit Server

• Click *Next*. Check your installation paths and see the components to install. If you'd like to change something, press the *Previous* button. Click *Next* to start installation.

JBoss Developer Studi	o GA
Summary Information Step 7 of 10	Jaoss DEVELOPER STUDIO
Ready to install. Important data are listed below. Press "Nevt" to sta	rt installation
Installation path /opt/work/jbds_ga Java VM path: /usr/java/jdk1.5.0_12/jre Following components will be installed: JBoss Developer Studio GA Eclipse JBoss Enterprise Application Platform Disk Space: Available Disk Space: 1.28 GB Required Disk Space: 635.9 MB	
JBoss, a division of Red Hat	🜍 Previous 💿 Next 😣 Quit

#### Figure 1.9. Summary Information

## **1.4. JBoss Developer Studio and JBoss Tools**

This section uncovers the points on the differences between JBoss Developer Studio and JBoss Tools and provides the steps on JBoss Tools installation as well.

## 1.4.1. What is the difference?

JBoss Tools is what went into our JBoss Developer Studio which comes as an easy-to-install Eclipse based IDE fully configured and ready to run with the bundled JBoss Enterprise Application Platform.

In short JBoss Tools are just a set of Eclipse plugins and JBoss Developer Studio adds:

- An installer
- Eclipse and Web Tools preconfigured
- JBoss EAP with JBoss AS and Seam preconfigured
- 3rd party plugins bundled and configured
- Access to RHEL and Red Hat Network
- · Access to the JBoss/Red Hat supported software

For additional information see <u>JBoss.com</u>

## 1.4.2. JBoss Tools Installation

Here, let's consider the installation of the JBoss Tools modules.

JBoss Tools is an umbrella project for the JBoss developed plugins that will make it into JBoss Developer Studio. The JBoss Tools modules are:

- JBoss AS Tools
- Seam Tools
- Hibernate Tools
- Visual Page Editor
- JST Tools
- JBPM Tools

To install the JBoss Tools plugins for Eclipse, you need the following:

• Get Eclipse and Web Tools

The current version of JBoss Tools (3.0.0.GA) targets at Eclipse 3.4.2/Ganymede SR2 and WTP 3.0.3+



## Tip:

We recommend you do not use Eclipse.org update site to go from Eclipse 3.3 to Eclipse 3.4. Instead we suggest that you download the full binary from <u>here</u>.

If you can only use Eclipse 3.3 use <u>JBoss Tools 2.1.2</u>, but JBoss Tools 2.x will not have any of the new features.



#### Note:

Remember to choose the download that matches your OS and use Java 5 when you run it.

• Get the *latest JBoss Tools build* 

Some of our newer plugins, like TPTP and BIRT, need additional drivers. On the left side of the download page you can find all of the required drivers for chosen build and their versions.

Instead of downloading the nightly build version manually, it's also possible to get the latest release of JBoss Tools from one of our update sites:

- Stable Updates: http://download.jboss.org/jbosstools/updates/stable
- Development Updates: <u>http://download.jboss.org/jbosstools/updates/development</u>
- Finally, install the build

Unzip the file(s) directly into your Eclipse *plugins/features* directory and it will be readily available. It might be necessary to start Eclipse with eclipse -clean to make sure it starts clean and rereads the new list of plugins.

If you need to install any standalone plug-in from JBoss Tools visit a <u>JBoss Tools Wiki</u> page to read about dependencies between standalone plug-ins.

## **1.5. Welcome to JBoss Developer Studio**

In this section we'll show you how to work with the welcome page of the JBoss Developer Studio.

The welcome page is the first page you see when you first launch JBoss Developer Studio.



Figure 1.10. Welcome to JBoss Developer Studio

With the help of its page you will be able:

• to get quick access to Getting Started Documentation (guides, tutorials and viewlets)

□ Welcome 🛛		
Welcome to JBoss Developer Studio		
Getting Started		
JBoss Developer Studio is a set of eclipse-based development tools that are pre-confi JBoss Enterprise Middleware Platforms and Red Hat Enterprise Linux. Developers may pre-configured tools offer significant time-savings and value, making them more pro- speeding time to deployment.	gured for find these ductive and	I
Getting Started with JBoss Developer Studio Getting Started with JBoss Developer Studio.		
Viewiets and Tutorials		
Hibernate Console Viewlets Hibernate Tools Viewlets illustrating various parts of Hibernate Tools.		
JBoss Seam Tutorial JBoss Seam Reference Guide and Tutorial		
WTP J2EE Tutorials Web Tools Platform J2EE Tutorials		
Getting Started Create New Perspectives Web Resources Workbanch		
Gening started create mental respectives the resources workbenen		

Figure 1.11. Getting Started Documentation

• to create new Seam projects, jBPM Process, JSF or Struts projects using JBDS wizards

□ Welcome 🕴	🏠 🗢 🗢 🗗
Welcome to JBoss Developer Studio	
Create New	
Start using JBoss Developer Studio	
Create Seam Project JBoss Developer Studio includes a New Seam Project Wizard that allows you to setup project featured web application in Seam. You can use any combination of Java EE frameworks into Seam.	t for full egrated to JBoss
Create JBPM Process Project JBoss Developer Studio includes a New jBPM Process Project that allows you to create using jBPM Framework	applications
Create JSF Project JBoss Developer Studio allows you to create brand new JSF projects. A new JSF project will h libraries, tag libraries and a JSF configuration file. JBoss Developer Studio comes with a num predefined project templates. These templates are flexible and easily customizable.	ave all JSF ber of
Create Struts Project JBoss Developer Studio includes a New Struts Project Wizard that radically simplifies the pro started with a new Struts project.	cess for getting
Getting Started Create New Perspectives Web Resources Workbench	

## Figure 1.12. Create New...

• to get short description of perspectives that JBDS offers for more productive development

Welcome	) 🗢 🗢 🖻
Welcome to JBoss Developer Studio	
Available	
JBoss Developer Studio offers a number of perspectives making the development more	productive
Java EE Perspective The Java EE perspective includes workbench views that you can use when developing resource enterprise applications, EJB modules, Web modules, application client modules, and connector modules.	es for projects or
Seam Perspective The Seam perspective helps you to use all advantages of Seam Framework in your application	s.
Database Development perspective The Database Development perspective allows you to create, modify, and execute database o SQL files.	bjects and
Hibernate Console perspective The Hibernate Console perspective allows you to configure database connections, provides vis of classes and their relationships and allows you to execute HQL queries interactively against y database and browse the query results.	ualization our
Getting Started Create New Perspectives Web Resources Workbench	

## Figure 1.13. Perspectives

• to visit JBoss Developer Studio web resources.

□ Welcome 🕱	¢	⇔	- 8
Welcome to JBoss Developer Studio			
Related Links			
JBoss Developer Studio Web Resources			
Forum JBoss Developer Studio Users Forum			
News News on JBoss Developer Studio			
Getting Started Create New Perspectives Web Resources Workbench			

#### Figure 1.14. Web Resources

Start work with JBoss Developer Studio by clicking on *Workbench* button or simply close the Welcome page.

## 1.6. Upgrading

To upgrade, just uninstall your current version and install the new one.

## 1.7. Uninstalling

- Make sure JBoss Developer Studio is not running
- Uninstall your current version of JBoss Developer Studio by running Uninstaller

## 1.8. Support

If you have comments or questions, you can discuss them at our <u>JBoss Developer Studio Forum</u>.

When writing to the forum for questions, please include the following information:

- 1. JBoss Developer Studio version
- 2. Exact error message
- 3. Steps to reproduce the issue

JBDS subscribers can get necessary support on our Support Portal.

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

JBDS on JBoss: JBoss Developer Studio

Forum: JBoss Forum

Subscription: JBDS Subscription

The latest documentation builds are available *here*.

# Manage JBoss AS from JBoss Developer Studio

In this chapter we'll focus more on how to operate the JBoss AS from JBoss Developer Studio.

JBoss Developer Studio ships with JBoss EAP v.4.2 bundled. When you followed the default installation of JBoss Developer Studio, you should already have a JBoss EAP 4.3 Server installed and defined. To run JBoss AS you need JDK 1.5, JDK 6 is not formally supported yet, although you may be able to start the server with it.

## 2.1. How to Manage the JBoss AS Bundled in JBDS

This section covers the basics of working with the JBoss Server supported directly by JBDS via bundled AS plug-in. To read more about AS plug-in, refer to the <u>Server Manager guide</u>.

## 2.1.1. Starting JBoss Server

Starting JBoss Server is quite simple. JBoss Developer Studio allows you to control its behaviour with the help of a special toolbar, where you could start it in a regular or debug mode, stop it or restart it.

 To launch the server click the green-with-white-arrow icon on the JBoss Server View or right click server name in this view and select Start. If this view is not open, select Window > Show View > Other > Server > JBoss Server View

😰 Problems 🕢 Tasks 🛞 Seam Components 😥 JBoss Server View 🕴	- 0
参 O Ø m	<u>∰ C</u> lean ▽
▼ 🥲 JBoss EAP 4.3 Server [Stopped]	Server
🐻 JSFKickStart	
🖳 Filesets	
♦ XML Configuration	

#### Figure 2.1. Starting from Icon

While launching, server output is written to the Console view:

🖹 Problems 🖉 Tasks 😲 JBoss Server View 📮 Console 🛛	3
JBoss-server 4.2 [JBoss Application Server] /usr/java/jdk1.5.0_12/bin/java (Jul 11, 2007 4:31:14 PM)	
16:31:17,324 INFO [Server] Starting JBoss (MX MicroKernel)	-
16:31:17,370 INFO [Server] Release ID: JBoss [EAP] 4.2.0.GA (build: SVNTag=JBPAPP_4_2_0_GA d	
16:31:17,373 INFO [Server] Home Dir: /opt/work/rhds_beta/jboss-eap/jboss-as	
16:31:17,373 INFO [Server] Home URL: file:/opt/work/rhds_beta/jboss-eap/jboss-as/	
16:31:17,377 INFO [Server] Patch URL: null	
16:31:17,378 INFO [Server] Server Name: default	
16:31:17,379 INFO [Server] Server Home Dir: /opt/work/rhds_beta/jboss-eap/jboss-as/server/de	
16:31:17,381 INF0 [Server] Server Home URL: file:/opt/work/rhds_beta/jboss-eap/jboss-as/serv	
16:31:17,382 INFO [Server] Server Log Dir: /opt/work/rhds_beta/jboss-eap/jboss-as/server/def	
16:31:17,384 INF0 [Server] Server Temp Dir: /opt/work/rhds_beta/jboss-eap/jboss-as/server/de	
16:31:17,396 INF0 [Server] Root Deployment Filename: jboss-service.xml	
16:31:19,103 INFO [ServerInfo] Java version: 1.5.0_12,Sun Microsystems Inc.	
16:31:19,107 INFO [ServerInfo] Java VM: Java HotSpot(TM) Client VM 1.5.0_12-b04,Sun Microsys	-
16:31:19,110 INF0 [ServerInfo] 05-System: Linux 2.6.18-8.el5xen,i386	
16:31:20,559 INFO [Server] Core system initialized	
16:31:29,515 INFO [WebService] Using RMI server codebase: http://127.0.0.1:8083/	
16:31:29,534 INFO [Log4jService\$URLWatchTimerTask] Configuring from URL: resource:jboss-log4	
16:31:32,045 INF0 [TransactionManagerService] JBossTS Transaction Service (JTA version) - JB	
16:31:32,049 INF0 [TransactionManagerService] Setting up property manager MBean and JMX laye	
16:31:32,829 INF0 [TransactionManagerService] Starting recovery manager	
16:31:33,323 INF0 [TransactionManagerService] Recovery manager started	
16:31:33,325 INFO [TransactionManagerService] Binding TransactionManager JNDI Reference	
	-
	-

Figure 2.2. Console Output

When the server is started you should see *Started* in the square brackets right next its name in JBoss Server View.

😰 Problems 🕢 Tasks 🛞 Seam Components 😥 JBoss Server View	23				-	- 8
	殄	0	ø	₿D	Clean	~
🗢 🤯 JBoss EAP 4.3 Server [Started, Synchronized]						
🐻 JSFKickStart [Synchronized]						
🖳 Filesets						
D 🗁 Ports						

#### Figure 2.3. Server is Started

## 2.1.2. Stopping JBoss Server

To stop the server, click the *Stop* icon in JBoss Server View or right click the server name and press *Stop*.

🖹 Problems 🧔 Tasks 🛞 Seam Components 😳 JBoss Server View	3			- 8
	蓉	0	۵	🕑 Clean 🏹
🗢 🤯 JBoss EAP 4.3 Server [Started, Synchronized]				Stop the server
🐻 JSFKickStart [Synchronized]				
🗟 Filesets				
👂 🗁 Ports				

## Figure 2.4. Stopping Server

When the server is stopped you will see *Stopped* in the square brackets next to its name.

## 2.1.3. Server Container Preferences

You can control how JBoss Developer Studio interacts with server containers in the Server editor. Double-click the server to open it in the editor.

<ul><li>Publishing</li><li>Timeouts</li></ul>
Timeouts
, Inneours
▼ Server Polling
Startup Poller JMX Poller 🗘
Shutdown Poller Process Terminated Poller
- Server Ports
The ports entered here are which ports the tool will poll the server on. Changing these fields will not change the ports the server itself listen
JNDI Port 1099 Automatically detect Confi
Web Port 8080 🗹 Automatically detect Confi

#### Figure 2.5. Server Overview

Here you can specify some common settings: host name, server name, runtime as well as settings related to the publishing, timeouts and server ports.

# 2.2. How to Use Your Own JBoss AS Instance with JBDS

Although JBoss Developer Studio works closely with JBoss EAP 4.2 we do not ultimately tie you to any particular server for deployment. There are some servers that Studio supports directly (via the bundled Eclipse WTP plug-ins). In this section we discuss how to manage self-installed JBoss AS. Suppose you want to deploy the application to JBoss 4.2.3 server. First of all you need to install it.

## 2.2.1. JBoss AS Installation

 Download the binary package of JBoss 4.2.3 and save it on your computer: <u>http://</u> <u>labs.jboss.com/jbossas/downloads</u> It does not matter where on your system you install JBoss server.



## Note:

The installation of JBoss server into a directory that has a name containing spaces provokes problems in some situations with Sun-based VMs. Try to avoid using installation folders that have spaces in their names.

There is no requirement for root access to run JBoss Server on UNIX/Linux systems because none of the default ports are within the 0-1023 privileged port range.

• After you have the binary archive you want to install, use the JDK jar tool (or any other ZIP extraction tool) to extract the jboss-4.2.3.GA.zip archive contents into a location of your choice. The jboss-4.2.3.GA.tgz archive is a gzipped tar file that requires a gnutar compatible tar which can handle the long pathnames in the archive. The extraction process will create a jboss-4.2.3.GA directory.

## 2.2.2. Adding and Configuring JBoss Server

Now we should add just installed server into server manager in JBoss Developer Studio.

- Open the JBoss Server View by selecting *Window > Show View > Other > Server > JBoss Server View*
- Right click anywhere in this view and select New Server
- Select JBoss Community > JBoss 4.2 Server

😔 New Server	×
Define a New Server	
Choose the type of server to create	
Server's <u>h</u> ost name: localhost	
Download additional server adapters	2
Select the <u>s</u> erver type:	
type filter text	
D 🗁 IBM	
▽ 🗁 JBoss Community	
JBoss AS 3.2	
🖓 JBoss AS 4.0	
💱 jBoss AS 4.2	
🤪 JBoss AS 5.0	
JBoss Deploy-Only Server	
D 🦢 JBoss Enterprise Middleware	
D DijectWeb	5
JBoss Application Server 4.2	
Server name: JBoss AS 4.2 at localhost	
(2) < Back Next > Finish Cancel	
	J

## Figure 2.6. Selecting Server Type

$\bigcirc$	Note: Now in the New Server wizard there is a separation between the .org servers (the JBoss Community category) and product server that comes bundled with JBoss EAP (the JBoss Enterprise Middleware category).

- To create a new runtime, which Jboss AS 4.2 matches to, click Next
- In the next step make JBoss Developer Studio to know where you have installed the Server and define JRE.

😔 New Server 🗙
Create a new JBoss Runtime
JBoss Application Server 4.2
A JBoss Server runtime references a JBoss installation directory. It can be used to set up classpaths for projects which depend on this runtime, as well as by a "server" which will be able to start and stop instances of JBoss. Name
JBoss 4.2 Runtime
Home Directory
/opt/jboss-4.2.3.GA Browse
JRE
Default JRE 3
Configuration
🦏 all
🦉 default
ii) minimal
Image: Cancel       Image: Cancel

#### Figure 2.7. Defining JBoss Runtime



• In the next dialog verify the specified information and if something is unfair go back and correct it

😔 New Server 🗙
Create a new JBoss Server
JBoss Application Server 4.2
A JBoss Server manages starting and stopping instances of JBoss. It manages command line arguments and keeps track of which modules have been dep
Name
JBoss 4.2 Server
Runtime Information
If the runtime information below is incorrect, please press back, Installed Runtimes, and then Add to create a new runtime from a different location.
Home Directory /opt/jboss-4.2.3.GA
JRE /usr/lib/jvm/java-1.5.0-sun-1.5.0.15 (java-1.5.0-sun-1.5.0.15) Configuration default
?     < <u>Back</u> <u>Finish</u> Cancel

## Figure 2.8. Configuring Projects

• In the last wizard's dialog modify the projects that are configured on the server and click *Finish*.

9	New Server		×
Add and Remove Projects Modify the projects that are confi	gured on the server		
Move projects to the right to conf	igure them on the server		
<u>Available projects:</u>		Configured projects:	
🐻 JSFKickStart			
	Add >		
	< <u>R</u> emove		
	Add All >>		
	<< Re <u>m</u> ove All		
	]		
3	Rack Novta	Finish	Cancal
U	< Back Next :	Enish	Cancel

## Figure 2.9. Configuring Projects

A new JBoss Server should now appear in the JBoss Server view.

😰 Problems 🧔 Tasks 🛞 Seam Components 😳 JBoss Server View 🕴					-	• 8
	轸	0	ø	₹ <mark>D</mark>	Clean	~
マ 🤯 jBoss 4.2 Server [Stopped]						
强 Filesets						
✓ XML Configuration						
Ports						
JBoss EAP 4.3 Server [Stopped]						

## Figure 2.10. New JBoss Server

Now, we are ready to create the first web application.

# Write Your First Project with JBoss Developer Studio

This chapter is a set of hands-on labs. You get step-by-step information about how the JBoss Developer Studio can be used during the development process.

## 3.1. Create a Seam Application

In this section you get to know how to create a Seam project in JBDS, how to start the server and what a structure your project has after creating.

## 3.1.1. Start Development Database

Before opening the JBoss Developer studio you need to <u>download</u> and start a Workshop Database.

To start the database just run ./runDBServer.sh or runDBServer.bat from the database directory.

The end result should be a console window that looks like:

Terminal		IX
<u>File E</u> dit <u>V</u> iew <u>T</u> erminal Ta <u>b</u> s <u>H</u> elp		
Starting database engine		-
[Server@la758cb]: [Thread[main,5,main]]: checkRunning(false) en [Server@la758cb]: [Thread[main 5 main]]: checkRunning(false) ex	tered ited	
[Server@la758cb]: Startup sequence initiated from main() method		
[Server@la758cb]: Loaded properties from [/opt/work/database/da	tabase/server.pro	
perties] [Server@la758ch]: Initiating startup sequence		
[Server@1a758cb]: Server socket opened successfully in 19 ms.		
[Server@la758cb]: Database [index=0, id=0, db=file:employee, al	ias=] opened suce	
ssfully in 930 ms.		=
[Server@1a758cb]: Startup sequence completed in 964 ms. [Server@1a758cb]: 2007-12-29 15:55:32 311 HSOLDB server 1.8.0 1	s online	
[Server@1a758cb]: To close normally, connect and execute SHUTDO	WN SQL	
[Server@la758cb]: From command line, use [Ctrl]+[C] to abort ab	ruptly	
		-

#### Figure 3.1. Starting DataBase

## 3.1.2. Create and deploy Seam Web Project

Minimize the terminal window and run the JBoss Developer Studio from Applications Menu or from the desktop icon.

First of all you get the Workspace Launcher. Change the default workspace location if it's needed. Click on Ok.

<b>@</b>	Workspace Launcher	
Select a wo	rkspace	
JBoss Develo workspace.	oper Studio stores your projects in a folder called a	
<u>W</u> orkspace:	/root/workspace	▼ <u>B</u> rowse
Use this a	as the default and do not ask again	Cancel

#### Figure 3.2. Workspace Launcher Dialog

After startup, you see the welcome page. You could read how to work with welcome pages in *previous* chapter. Now select Create New... icon and then press on Create Seam Project link.

The New Seam Project wizard is started. You need to enter a name (e.g., "workshop") and a location directory for your new project. The wizard has an option for selecting the actual Server (and not just WTP runtime) that will be used for the project. This allows the wizard to correctly identify where the needed datasource and driver libraries need to go.
New Seam Project	×
Seam Web Project	1 million
Create standalone Seam Web Project	
	0.00
Project name: workshop	
Contents	
☑ Use <u>d</u> efault	
Directory: //opt/workspace_jbds/workshop	Browse
Target Runtime	
JBoss EAP 4.3 Runtime	≎ N <u>e</u> w
Dynamic Web Module version	
2.5	0
Target Server	
JBoss EAP 4.3 Server	0 New
Configuration	
Dynamic Web Project with Seam 1.2	S Modify
Configures a Dynamic Web application to use Seam v1.2	
(?) < Back Next > Finish	Cancel

## Figure 3.3. New Seam Project Wizard

All settings are already specified here, you can just modify the Configuration. Click on the *Modify...* button to configure your custom facets pattern:

	Project Face	ts X
Project Facets Select the facets that should be ena	abled for this project.	
Configurations: Dynamic Web Proje	ct with Seam 1.2	\$ Save As Delete
Project Facet	Version	Details Runtimes
Axis2 Web Services		Axis2 Web Services
🗹 💑 Dynamic Web Module	2.5	Enables Web services generation
🗹 🚮 Java	5.0	through the Axis2 Web services engine.
🗌 ↔ Java Persistence	1.0	
🗌 📄 JavaScript Toolkit	1.0	
🗹 📄 JavaServer Faces	1.2	
🗌 📄 JBoss ESB	4.3	
🕨 🗌 📄 JBoss Portlets		
IBoss Web Services		
🗹 📄 Seam	1.2	
🗌 📄 WebDoclet (XDoclet)	1.2.3	
٢		OK Cancel

### Figure 3.4. Project Facets Specifying

On the whole the dialog allows to select the "features" you want to use in your project. Doing this JBoss Developer Studio setups the appropriate tooling for your project. Since JBoss Seam integrates all popular Java EE frameworks, you can select any combination of technologies from the list. Here, for the default configuration, Dynamic Web Module, Java, JavaServer Faces (JSF), and Seam Facet are already selected for a typical database-driven web application. The default project facets should suffice.

In the Project Facets form you can also bring up server runtimes panel by clicking Runtimes tab on the right corner. This panel shows available server runtimes.

	Project Fac	ets X
Project Facets Select the facets that should be en	abled for this project.	
Configurations: Dynamic Web Proje	ct with Seam 1.2	⇒ Save As Delete
Project Facet	Version	Details Runtimes
🕨 🔲 🗎 Axis2 Web Services		JBoss 4.2 Runtime
🗹 💑 Dynamic Web Module	2.5	
🗹 🛃 Java	5.0	
🗌 🚸 Java Persistence	1.0	
🗌 📄 JavaScript Toolkit	1.0	
🗹 📄 JavaServer Faces	1.2	
🗌 📄 JBoss ESB	4.3	
🕨 🗌 📄 JBoss Portlets		
🕨 🗌 📄 JBoss Web Services		
🗹 📄 Seam	1.2	
🗌 📄 WebDoclet (XDoclet)	1.2.3	
		Show all runtimes
		Make Primary New
		Runtime Composition:
		<no runtime="" selected=""></no>
0		OK Cancel

## Figure 3.5. Runtimes Selecting

Click on Ok and then Next to proceed further.

A dynamic web application contains both web pages and Java code. The wizard will ask you where you want to put those files. You can just leave the default values or choose another folder.

)	New Seam Project	t
Web Module		-0
Configure web module setting	js.	
Context Root:		
workshop		
Content Directory:		
WebContent		
Java Source Directory:		
src		

#### Figure 3.6. Web Module Settings

On the next form, you will be able to select where those library JARs come from. The easiest is just to select the JARs provided by the JBoss AS runtime associated with this project. That is why it is important to chose the right JBoss AS 4.2 runtime in the project setup window.

- Check Server Supplied JSF Implementation . We will use <u>JSF implementation</u> that comes with JBoss server
- Click Next

	New Seam Project 🛛 🗙
JSF Capabilities Add JSF capabilities to the	nis Web Project
JSF Libraries:	Server Supplied JSF Implementation
	Deploy Library Name
JSF <u>C</u> onfiguration File:	/WEB-INF/faces-config.xml
JSF <u>S</u> ervlet Name:	Faces Servlet
JSF Servlet Classname:	javax.faces.webapp.FacesServlet
<u>U</u> RL Mapping Patterns:	*.seam
0	< <u>Back</u> <u>Next</u> <u>Finish</u> Cancel

#### Figure 3.7. JSF Capabilities Adding

Next wizard step needs more settings that previous. Let's start with General section.

Leave the default Seam runtime and check a WAR deployment.

<b>8</b>	New Seam Project	×
Seam Facet		and the
Configure Seam l	Facet Settings	
General		
Seam Runtime:	Seam 1.2.AP	\$ Add
Deploy as:	WAR ○ EAR     EAR	

## Figure 3.8. Seam Facet Setting

Next Database section is a little tricky. The Connection Profile needs to be edited so that the new project works properly with the external HSQLDB server. By default the project wizard tries to use

the JBoss embedded HSQLDB, but the tutorial uses an external database to replicate a more real world development scenario. Click on Edit to modify the Connection Profile.

Database	
Database Type:	HSQL \$
Connection profile:	Default 🗘 Edit New
Database Schema Name:	
Database Catalog Name:	
DB Tables already exists in database:	
Recreate database tables and data on deploy:	

#### Figure 3.9. DataBase Setting

Select JDBC Connection Properties. Make sure the URL is set to *jdbc:hsqldb:hsql:// localhost:1701* 

8	Propert	ties for	×
type filter text	JDBC Conne	ection Properties	$(\neg + \neg +$
Common Default Schema Filter	Select a driv Hypersonic	er from the drop-down:	¢
Default Stored Procedure Filter Default Table Filter	Database:	SAMPLE	
JDBC Connection Properties	URL:	jdbc:hsqldb:hsql://localhost:1701	
Version	User name:	sa	
	Password:		
	Save Pas	sword	

#### Figure 3.10. JDBC Connection Properties

Try click on Test Connection button. It probably won't work. This happens if the hsql jdbc driver is not exactly the same. This can be worked around by modifying the HSQLDB database driver settings. To modify the settings, click the "..." next to the drop-down box.

The proper Driver JAR File should be listed under Driver File(s). Select the hsqldb.jar file found in the database/lib directory and click on Ok.

Bedit (	Driver Definition
Provide Driver Details	
Modify details in the fields below to provio set any available and applicable property	de a unique name, a list of required jars, and values.
Driver Name	
Hypersonic DB	
Driver Type:	
Hypersonic DB	
Driver File(s):	
/opt/work/jbds/jboss-eap/jboss-as/serve	r/default/lib/hsqldb.jar Add Jar/Zip
	Edit Jar/Zip
	Remove Jar/Zip
	Clear All
Properties:	
Property	Value
▼ General	
Connection URL	jdbc:hsqldb:MyDB
Database Name	SAMPLE
User ID	sa
·	Þ
0	OK Cancel

## Figure 3.11. Driver Details

Select Hypersonic DB and click on Ok. Again, this only happens if the selected hsqldb.jar is different from the running database.

B Driver Definitions		×
Available Driver Definitions		
Add, edit, or remove driver definitions to manage available driver definitions.		
マ 👒 Derby	-	Add
<b>G</b> 10.0		Edit
G 10.1		
G 10.2		Remove
👒 Generic JDBC Driver		Сору
🗢 🖼 Hypersonic DB		
▽ 🕞 1.8		
Hypersonic DB		
🗢 🖼 Informix		
<b>G</b> 10.0	=	
G 9.2		
Ga 9.3		
<b>9</b> .4		
▼ 🖼 MySQL		
iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii		
G 4.1		
Ga 5.0		
G 5.1		
▽ 🖼 Oracle		
Gg 10	•	
ОК		Cancel

## Figure 3.12. Hypersonic DB Selecting

Now, the Test Connection should succeed. After testing the connection, click on Ok.

( <del>)</del>	Propert	les for X
type filter text	JDBC Conne	ection Properties $(r \neq r)$
Common Default Schema Filter Default Stored Procedure Filter Default Table Filter JDBC Connection Properties Version	Select a driv Hypersonic Database: URL: User name: Password:	er from the drop-down: DB   SAMPLE  Jdbc:hsqldb:MyDB  sa  sword
	Save Pas	sword
Ping succee	ded!	dd Jp Jwn nove
		Clear All
		Test Connection
0		OK Cancel

## Figure 3.13. Connection Testing

You can leave the Code Generation section as is. It refers to Java packages in which the generated code will be placed.

Code Generation	
Session Bean Package Name:	org.domain.workshop.session
Entity Bean Package Name:	org.domain.workshop.entity
Test Package Name:	org.domain.workshop.test
0	< Back Next > Finish Cancel

#### Figure 3.14. Code Generation Setting

Click on Finish button. Now, there should be a new Seam project called "workshop" listed in Package Explorer view.



#### Figure 3.15. "worskhop" Project in the Package Explorer

### 3.1.3. Start JBoss Application Server

The complete information on how to manage JBoss AS from JBoss Developer Studio you can read in a *corresponding chapter*.

Now you just need to start the server by clicking on green circle/triangle icon in the JBoss Server View.

🖹 Problems 🧔 Tasks 🛞 Seam Components 记 JBoss Server View 🛛							- 8				
						苓	00	E	€D	Clean	~
🗢 🤯 JBoss B	AP 4.3 Se	rver (Sto	pped]								
📑 Files	ets										
🗢 🖹 XML	Configura	tion									
Þ 🗁 P	orts										

## Figure 3.16. Starting the Server

Then run the project by selecting the project and use *Run As... > Run on Server*.

Your project looks like this:

🥹 v	vorksl	hop ۵	3			- 0		
$\diamond$			s (	http://localhost:8080/workshop/home.seam	) 🕨	۲		
wo	workshop: Home Login							
	Welc	ome!						
	This	<ul> <li>empty</li> <li>An</li> <li>De</li> <li>Int</li> <li>EJ</li> <li>Te</li> <li>HS</li> <li>De</li> <li>Int</li> </ul>	shell ployn egrati B 3.0 mplat GQL (o fault ( ernati	I application includes: d script nent to JBoss AS ion testing using TestNG and JBoss Embeddable EJB3 ·Seam components ted Facelets views or MySQL) Datasource CSS stylesheet ionalization support				
				Powered by Seam. Generated by seam-gen.				

Figure 3.17. "workshop" Project Started

## 3.1.4. Workshop Project Code Overview

Now let's examine the project and its structure. Go back to the Package Explorer view in JBoss Developer Studio.

It seems like it's not much for project but this shell application contains a login screen with default login logic, a menu template that can be further modified, and other layout templates.

It's important to note that the business logic will reside in the *src/hot* folder, by default. And, the package naming conventions that were used in New Seam project wizard could have been changed to something different from *org.domain.workshop.session*. Also, notice that there is a default Authenticator. java file. This is where custom security logic can be added. Seam has a nice declarative security model that we will explore in a bit more detail later on. The *src/main* folder is a model directory. It stores the project's JPA entity beans.



### Figure 3.18. Project Structure

The view tier of the application is also important. Seam uses facelets and there is a built-in facelets GUI editor that has some nice WYSIWYG and component drag/drop functionality. Try this out by opening home.xhtml from WebContent folder.



#### Figure 3.19. Facelets GUI Editor

Notice that the templates reside in the *WebContent/layout* folder. There is a stylesheet in the *WebContent/stylesheet* folder. There is also a login and default error page. The Facelet editor will be explored in more detail later in the lab.

The project already has a datasource that was created per the Seam project wizard database settings. And, obviously all of the Seam specific configuration files and JAR dependencies are included and placed in the proper locations. On last noteworthy line item is related to the build script. There isn't a build script because the Eclipse WTP(Web Tools Project) plugin is used to publish web application changes. As you can see, JBoss Developer Studio is removing a great deal of complexity from the enterprise Java project setup/deployment process. The end result is a developer that is writing code, not spending days/weeks trying to figure out how to get a decent development environment and project build process.

# 3.2. Seam Action Development

Now, it's time to write some code. The good news is that JBoss Developer Studio can also help out in this respect. In this section, we will create a new Seam Action POJO and facelet with some custom business logic and some GUI changes.

## 3.2.1. Create a New Seam Action

Go to main menu bar and click on *File > New > New Seam Action* to start the New Seam Action wizard.

Specify a Seam component name (e.g., "myAction"). The other properties will be auto-completed for you so there is no need to change them. Click on Finish.

<b>9</b>	New Seam Action
Seam Action	
Create a new Seam action	
Seam Project:	workshop Browse Settings
Seam component name:	myAction
POJO class name:	MyAction
Bean name:	MyActionBean
Method name:	myAction
Page name:	myAction
Package name:	org.domain.workshop.session Browse
0	<u>F</u> inish Cancel

#### Figure 3.20. New Seam Action Wizard

Now, open the MyAction.java file and replace the "myAction" method with this logic:

public void myAction() {
Calendar cal = Calendar.getInstance();
log.info("myAction.myAction() action called");
facesMessages.add("MyAction Executed on:" + cal.getTime());
}

You also need to import the java.util.Calendar class by clicking CTRL + Shift + O.

## 3.2.2. Test Seam Action

The new action can be tested by browsing the workshop-test project. JBoss Developer Studio has already created a TestNG test case for you.



### Figure 3.21. "workshop-test" Project

The test case simulates a Seam component/method execution for the MyAction.myAction() logic.

To run the test case, right click on MyActionTest.xml and click *Run As > TestNG Suite* or use the Run As... toolbar shortcut as shown below.



### Figure 3.22. TestNG Running

With any luck, the test case will pass. Look at the TestNG view.



#### Figure 3.23. TestNG Results

Now, it's safe to test the new Seam Action in a web browser. The fastest way to do that is to right click on myAction.xhtml and use *Run As... > Run On Server* which will show the appropriate url in the browser. Alternatively you can manually enter *http://localhost:8080/workshop/myAction.seam* into a browser.



Figure 3.24. Seam Action in a Web Browser

## 3.2.3. Modify Seam Action User Interface

Browse to *http://localhost:8080/workshop/myAction.seam* and click on myAction. This executes the "myAction" method. This looks pretty good, but we could make this page look a little better.

Open *WebContent/myAction.xhtml* in JBoss Developer Studio to use the nice facelets editor.

nyAction.xhtml 🕱	- 8						
<pre><!DOCTYPE composition PUBLIC *-//W3C//DTD XHTML 1.0 Transitional//EN*</td>    </pre>							
(4							
▼	Normal 🗘 B I 🗓 🦾 A						
#{projectName}: Home	Welcome, #{identity.username} Login Logout						
Error Messages myAction	=						
myAction!							
	<b>v</b>						
	X						

### Figure 3.25. Open Seam Action with Editor

Right click on the "myAction!" button in the visual part of editor and select <h:commandButton> Attributes.

-	¢ Nor	mal	+ Norm	nal 🛊	B	I	<u>u</u>	<u>/</u> A			
×	#{projectName}:	lome		We	lcome,	#{ider	ntity.u	username)	Login	Logout	-
à	Error Messages										_
	myAction										
	myAction	P <h:commandbutton> A</h:commandbutton>	Attributes								_
		Parent Tag	•								-
ui:co Visua	omposition ui:defin al/Source Preview	Insert Around Insert Before Insert After	• •	ndButto	'n						×
		Cut Copy Paste									
		Re <u>m</u> ove									

## Figure 3.26. Seam Action Editing

Change the value of the button to something different. If desired, you can change any other text on the page. Then, type CTRL + S to save the facelet.

•	Attributes	
<h:commandb< th=""><th>utton&gt;</th><th></th></h:commandb<>	utton>	
name	value	<b>•</b>
rendered		
style		
styleClass		
tabindex		
title		
type		=
value	Click on My Action Button	
		Close

#### Figure 3.27. Attributes Dialog

Refresh http://localhost:8080/workshop/myAction.seam and now you should see your changes.

Notice that you did not have to publish the application. JBoss Developer Studio auto-published it for you.

in myAction.xhtml ☎		- 0
#{projectName}: <u>Home</u>	Welcome, #{identity.username} Login	Logout
Error Messages myAction Click on My Action Button		
	Powered by <u>Seam</u> . Generated by seam-gen.	
Visual/Source Preview		

#### Figure 3.28. Seam Action Is Modified

## 3.3. Declarative Security

In this section you will see how it's easy to secure the facelets and facelet components in Seam. Let's go ahead and secure the action button, then we will secure the entire page.

## 3.3.1. Edit Login Authentication Logic

There is a class called Authenticator.java. The login page will execute the Authenticator.authenticate() method by default, so we'll start by adding some custom login logic.

Open Authenticator.java in JBoss Developer Studio and replace the authenticate() method with this code:

```
public boolean authenticate() {
  if (identity.getUsername().equals("admin")
  && identity.getPassword().equals("password")) {
    identity.addRole("admin");
    return true;
  }
  else
  return true;
}
```

## 3.3.2. Secure Seam Page Component

Open myAction.xhtml and add a new secured command button:

<h:commandButton id="myActionSecured" value="Secured Action Button" action="#{myAction.myAction}" rendered="#{s:hasRole('admin')}"/>

Refresh *http://localhost:8080/workshop/myAction.seam* If you are not logged in you will only see one button. If you are logged in, there will be two buttons.

<b>]</b> A	uthe	ntica	ator.ja	iva	💼 myActi	on.xhtml	🎯 worksho	р 🛙		c	- 0
¢			Ŷ	http://	localhost:8	080/worksh	nop/myAction.	seam	•		Ð
wor	kshop	:	Home						Ļ	.ogin	_
	myA	ction								_	
	(	Click	on My	Action B	utton						
						Powered by Sear	. Generated by sear	n-gen.			

### Figure 3.29. One Button on a Page

The secured button is not visible because the user isn't logged in as "admin".

Authenticator.java	a 🙀 myAction.xhtml	🥥 workshop 🕴		- 8
🗢 🗢 🔳 🤣 🖿	ttp://localhost:8080/worksh	op/myAction.seam	-	▶ 🄮
workshop: <u>Home</u>			Welcome, admin	Logout
myAction				
Click on My Act	tion Button Secured Action Bu	utton		
	Powered by Sear	n, Generated by seam-gen.		

#### Figure 3.30. Secured Button is Visible

The user is logged in as "admin". Securing components is easy but securing pages is pretty simple as well.

Open *WebContent/WEB-INF/pages.xml*. Then add this markup directly underneath the <pages> element:

<page view-id="/myAction.xhtml" login-required="true"/>

Refresh *http://localhost:8080/workshop/myAction.seam* If you are not logged in you will get bounced back to the login page.

Authenticator.java	amyAction.xhtml	🞯 workshop 🕴 🧰 pages.xml	- 8						
🗢 🗢 🔳 🖑 http://	localhost:8080/worksh	op/login.seam?cid=62&clr=true	🔹 🕨 🋐						
workshop: Home	workshop: Home								
<ul> <li>Please log in first</li> </ul>									
Login									
Please login using any u	sername and password								
Username		]							
Password		]							
Remember me	2								
Login									
	Powered by Seam	, Generated by seam-gen.							

#### Figure 3.31. Login Page

Thus, if you enter login credentials for the "admin" user, you will be re-directed to the secured page and secured component. If you enter different login credentials, page access will be granted, but the secured component will not be displayed.

Congratulations! You have secured your new action both at the facelet component and page level. You also added custom authentication logic to the login action.

## 3.4. Browsing Workshop Database

In this section you get to know how to use the workshop database that was started at the beginning of the lab.

## 3.4.1. Database Connectivity Setup

The workshop data can be browsed inside of JBoss Developer Studio.

To open the Data Source Explorer, click on *Window > Open Perspective > Other > Database Development.* 

In the Data Source Explorer, expand a Databases node and select a Default database. Right click on it, select Connect from the context menu.



Figure 3.32. Data Source Explorer

## 3.4.2. Browse Workshop Database

Then in the current view, drill down to the CUSTOMERS table.



## Figure 3.33. "CUSTOMERS" Table

Right click on CUSTOMERS, select *Data > Sample Contents* to view the data in the table.

There should be a SQL Results view on the workbench, but it could be hidden. Click on the "Result1" tab in the right side and you should see the data in the CUSTOMERS table.

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Type query expression here			Status Result1							
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			5	144	Volvo Model Repli	Berglund	Christina	0921-1	Berguvsv\u005	۲
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		7	141	Euro+ Shopping C	Freyre	Diego	(91) 55	C/ Moralzarzal,		
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		9	201	UK Collectables, L	Devon	Elizabeth	(171) 5?	12, Berkeley Ga	•	
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			14	169	Porto Imports Co.	de Castro	Isabel	(1) 356	Estrada da sa\u	r I
			15	119	La Rochelle Gifts	Labrune	Janine	40.67.8	67, rue des Cin	c 🛛
			16	112	Signal Gift Stores	King	Jean	702555	8489 Strong St.	
				50 records s	hown					_

Figure 3.34. SQL Results View



Congratulations! You just connected to the workshop database and queried the content using Database Explorer tools.

# **3.5. Database Programming**

Now, it's time to reverse engineer the workshop database into a fully functioning Seam CRUD(Create Read Update Delete) application.

## 3.5.1. Reverse Engineer CRUD from a Running Database

In JBoss Developer Studio, switch to Seam perspective, and then right-click the project and select New > Seam Generate Entities.

"workshop" project in the Seam Generate Entities wizard will be selected automatically. There is no need to change something more, click *Next* to proceed further.

# Reverse Engineer CRUD from a Running

Database

	Generate Seam Entities	×
Generate Seam Entities		
Seam Project: Hibernate Console Configurati Generation Mode	workshop on: workshop  ≎ database	Browse Settings
0	< Back Next >	<u>F</u> inish Cancel

## Figure 3.35. Generate Seam Entities

On the next page use the *Include* button to include all the tables from the database and click *Finish*.

<b>9</b> —	Gen	erate Seam E	ntities		×
Generate Seam Entities Select Tables					
Database schema: ▼ ③ <default catalog=""> ▼ ⑦ PUBLIC ■ CUSTOMERS ■ OFFICES ■ OFFICES ■ ORDERDETAILS ■ ORDERS ■ PAYMENTS ■ PRODUCTLINES ■ PRODUCTS Refresh</default>	Include Exclude Up Down Remove Remove All	Table filters:	Schema PUBLIC PUBLIC PUBLIC PUBLIC PUBLIC PUBLIC PUBLIC	Table         CUSTOMERS         EMPLOYEES         OFFICES         ORDERDETAILS         ORDERS         PAYMENTS         PRODUCTLINES         PRODUCTS	
0		<	Back Next	> <u>F</u> inish	Cancel

## Figure 3.36. Selecting Tables

After running the Generate Entities action, you will see new *org.domain.workshop.entity* classes. These classes represent insert/update/delete/query logic.

## Reverse Engineer CRUD from a Running





## Figure 3.37. org.domain.workshop.entity Classes

There are also *org.domain.workshop.entity* package that contains the JPA classes. These are the entity beans that are mapped to database tables.

Last, but not least, there are facelets for all of the CRUD screens. The best way to get a feel for the generated code is to open a browser and play around with the application. Go to *http://localhost:8080/workshop* and insert/update/delete/query a few records. There is quite a bit of AJAX in this application, but which we will explore further later on in the lab. For now, take note of the page tabs, required field logic and data table sorting in the list pages.

{projectName}: Home	Offices List	Customers List	Employees List	Products List	Orderdet
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addressline2	#{customersLis	st.customer			
city	#{customersLis	st.customer			
state	#{customersLis	st.customer			
postalcode	#{customersLis	st.customer			
country	#{customersLis	st.customer			
Search					
Customers search results					
No customers exists					
III					

## Figure 3.38. CustomersList.xhtml in the Editor

Congratulations! You now have a fully functioning CRUD application that is already AJAX enabled.

## 3.5.2. Use Hibernate Tools to Query Data via JPA

Now, it's time to write some JPA queries using the Hibernate perspective in JBoss Developer Studio.

In the upper right corner of the workbench there is a small icon (see the figure below), click on it and choose Hibernate.



## Figure 3.39. Hibernate Perspective

Look at the Hibernate Configurations view. In the "workshop" project, drill down on the Session Factory and notice that the JPA entities/attributes are listed in a nice tree view.



#### Figure 3.40. Hibernate Configurations View

Right click on the Session Factory and select HQL Editor. This will open a JPA query scratch pad window.

Write your query and click on the "Hibernate Dynamic SQL Preview" tab. You should see the SQL that will be executed if this JPA query is run.



### Figure 3.41. JPA Query Editor

Run the query by clicking on the green run icon.

The results are listed in the "Hibernate Query Result" tab. There is a "Properties" tab in the workbench that can be used to see a specific JPA result. These results represent the JPA objects because our query did not specify column names.

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⊳	orderses		org.	domain.workshop.entity.Customers@1038048	
Þ	paymentses		org.	domain.workshop.entity.Customers@db0d07	
	phone	40.32.2555	org.	domain.workshop.entity.Customers@134817a	
	postalcode	44000	org.	domain.workshop.entity.Customers@207655	
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4		Þ	select	t c from Custom select c from Custom select c from Custom 🕴 "9	

## Figure 3.42. Hibernate Query Result View

The query can be refined, and take note that there is nice code completion in the JPA query editor.

्य *workshop ध	- 8					
workshop  Max results: 10						
Secert C. Customer Hame, C. emptoyees.       Hom Customer's C         * customerses - Employees       email - Employees         • email - Employees       • employeenumber - Employees						
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org.domain.workshop.entity.Customers@841423 org.domain.workshop.entity.Customers@1463027 org.domain.workshop.entity.Customers@1038048 org.domain.workshop.entity.Customers@db0d07 select c from Custom_select c from Custom						
Writable Insert 1:36						

## Figure 3.43. Code Completion

A refined query will return results that are more ResultSet oriented. Notice the join logic that JPA supports.

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🕨 workshop 🗘 Max r	esults: 10 💌				
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Australian Collectors, Co.	×101				
La Rochelle Gifts	x2028				
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Mini Gifts Distributors Ltd.	x3291				
Blauer See Auto, Co.	×102				
Mini Wheels Co.	x3291				
Land of Toys Inc.	x4102				
Euro+ Shopping Channel	x2028				
select c from Custom sele	ct c from Custom select c.customernam 🕴 "10				

## Figure 3.44. The Results

There was no need to specify an Employees table in the from part of the JPA query because JPA supports reference traversal via Java class attribute references. Not only are JPA and HQL queries fully supported, but Criteria based queries can also be written in the Criteria Editor. You should spend some time tinkering with different queries and possibly Criteria based queries, even though the instructions are not provided in this lab.



### Figure 3.45. Criteria Editor

## 3.5.3. Use Hibernate Tools to visualize the Data Model

Now, it's time to view the data model for the workshop database.

In the Hibernate Configurations view, select "workshop" project and expand the Configuration node. Select the Customers entity, right click on it, choose Open Mapping Diagram.



## Figure 3.46. Mapping Diagram Opening

You see a Diagram tab for the CUSTOMERS table and any tables that have FK references. This is a handy way to view the data model and JPA mappings. Now, you've got access to something that the Erwin Data Modeler can't do.



### Figure 3.47. Diagram Tab

# 3.6. Rich Components

This lab will conclude with one last AJAX twist. In this section we add a RichFaces inputNumberSlider to the Order Details edit screen.

## **3.6.1. Add a Richfaces component to the CRUD Application**

Switch to Seam perspective, open *WebContent/OrderdetailsEdit.xhtml* in JBoss Developer Studio.

Change the form field values using the visual editor. Seam has generated the form field names that match the database column names. This is not ideal for business users.



### Figure 3.48. Form Fields Editing

Also, replace the QTY Ordered input field with a inputNumberSlider. You can use the JBoss Developer Studio palette or right click on the form and insert the RichFaces component.
#### Add a Richfaces component to the CRUD Application

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Visual/S	ource Preview							<rich:panelmenu></rich:panelmenu>

## Figure 3.49. RichFaces Component Inserting

One the last option is to use the source view and manually copy the inputNumberSlider markup listed below:

```
<rich:inputNumberSlider id="quantityOrdered" required="true"
value="#{orderdetailsHome.instance.quantityordered}"/>
```



## Figure 3.50. Adding the Source

The end result is an edit page that has better form labels and a new RichFaces control.

#### Add a Richfaces component to the CRUD

Application

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S18_1749	Vintage Cars	1917 Grand Touring Sedan	1:18	Welly Diecast Productions	This 1:18 scale replica of the 1917 Grand Touring car has all the features you would expect from museum quality reproductions four doors and bi-fold hood opening, detaile engine and instrument panel, chrome-look and tufted upholstery, all topped off with a factory baked-ename! finish.	:: all sd 2724 trim,	86.7	170.0	View

# Figure 3.51. The Result Page

Congratulations! You have completed the JBoss Developer Studio lab.

# Developing a simple JSP web application



#### Note:

We highly recommend developing in Seam. This chapter is for users who for some reason cannot use Seam.

In this chapter you'll find out how to create a simple <u>JSP</u> application using the JBoss Developer Studio. The application will show a classic "Hello World!" on the page.

We'll assume that you have already launched JBoss Developer Studio and also that the Web Development perspective is the current perspective. If not, make it active by selecting *Window* > *Open Perspective* > *Web Development* from the menu bar or by selecting *Window* > *Open Perspective* > *Other...* from the menu bar and then selecting Web Development from the Select Perspective dialog box.

# 4.1. Setting Up the Project

We are going to start with the creating a Dynamic Web Project with a minimal structure, i.e. with just required facets. Thus this section will perform you all necessary steps on how to do this.

- Go to the menu bar and select File > New > Other ....
- Select Web > Dynamic Web Project in the New Project dialog box
- Click Next
- Enter "jspHello" as a project name
- Then select Minimal Configuration from the list of possible configurations and click Finish

)	New Dynamic Web Project	
ynamic Web Project		2
Create a standalone Dynamic Web Application.	project or add it to a new or existing Enterprise	
Project name. Jspriello		
Project contents:		
✓ Use <u>d</u> efault		
Directory; //home/ochikvina/java/	eclipse-tools/eclipse/workspace2/jspHello	Browse
Target Runtime		
JBoss 4.2 Runtime		\$ N <u>e</u> w
Dynamic Web Module version		
2.5		\$
Configuration		
Minimal Configuration		> Modify
The most conservative starting p can later be installed to add new	oint. Only the required facets are installed. Addition functionality to the project.	nal facets
EAR Membership		
Add project to an EAR		
EAR Project Name: EAR		✓ <u>N</u> ew
(?)	< Back Next > Finish	Cancel

# Figure 4.1. Create New Web Project

The *jspHello* node should appear in the upper-left Package Explorer view.



## Figure 4.2. New Web Project

# 4.2. Creating JSP Page

This section covers all the points how to create, edit and then preview JSP page.

In our simple application we need to create only one JSP page which displays a "Hello World!" message.

- Right click *WebContent* > *New* > *JSP*.
- Type "hello.jsp" for a file name and click the *Next* button.

In the next window you can choose a template for your jsp page and see its preview.

• Select New JSP File (xhtml) template and click Finish button.

New J	avaServer Page
Select JSP Template Select a template as initial content in the JSP page	e. 🕥
🗹 Use JSP Template	
Templates are 'New JSP' templates found in the JS	P Templates preference page.
Name	Description
New JSP File (html)	JSP with html markup
New JSP File (xhtml)	JSP with xhtml markup
New JSP File (xhtml, xml syntax)	JSP with xhtml markup and xml style syntax
<pre><?xml version="1.0" encoding="\${encoding="}</pre></pre>	a)* ?>
review	
<pre><?xml version="1.0" encoding="\${encodin %@ page language="java" contentType="t pageEncoding="\${encoding}"%&gt; <!DOCTYPE html PUBLIC "-//W3C//DTD XHTM     <html content-type"="" content<br="" xmlns="http://www.w3.org/1999/xht&lt;br&gt;&lt;head&gt;&lt;br&gt;&lt;meta http-equiv="><title>Insert title here</title></html></pre>	<pre>g}" ?&gt; ext/html; charset=\${encoding}" L 1.0 Transitional//EN" "http://www.w3.org/TR/x ml"&gt; :="text/html; charset=\${encoding}" /&gt;</pre>
4	

## Figure 4.3. Create JSP Page

Our *hello.jsp* page will now appear in Project Explorer.

# 4.2.1. Editing a JSP Page

Let's now make a little change so that a jsp page displays "Hello World!" message.

• Insert this line inside the <body> </body> tag:

<% System.out.println("Hello World!"); %>

Notice that content assist functionality is always available when you are typing:



## Figure 4.4. Content Assist in JSP Page

After changes made your *hello.jsp* page should look like this:



## Figure 4.5. Hello.jsp Page

This line will actually output "Hello World!" message in the Console. To make the message displayed in the Browser, just replace this line with the simple Hello World!.

## 4.2.2. web.xml file

When you are creating web project the wizard creates the *web.xml* for you automatically. The web.xml file editor provided by JBoss Developer Studio is available in two modes: Tree and Source.

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Web XML Editor			
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Mime May Xml	<pre>lns="http://java.sun.com/&gt; lns:web="http://java.sun.</pre>	xml/ns/javaee" com/xml/ns/javaee/web-app_2_5.xsd"	
▷ 🔊 welcome	i:schemaLocation="http:// <display-name>ispHello<th><pre>java.sun.com/xml/ns/javaee http:// isplav-name&gt;</pre></th><th>java.sun.com/xml/</th></display-name>	<pre>java.sun.com/xml/ns/javaee http:// isplav-name&gt;</pre>	java.sun.com/xml/
😂 Error Pagi	<pre><welcome-file-list></welcome-file-list></pre>		
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a Security	<pre><welcome-file>index.jsp </welcome-file></pre>		
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Security I	<pre><welcome-file>default.j: /welcome-file-list&gt;</welcome-file></pre>	<pre>sp</pre>	
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## Figure 4.6. Web.xml in Design and Source Mode

Both modes are fully synchronized. Let's add mapping to our *hello.jsp* page in *web.xml* file.

- Switch to Source tab.
- Add the next code into <welcome-file-list> :

<welcome-file>hello.jsp</welcome-file>

If you come back to Tree mode you will see that the changes made are automatically reflected in that mode.

Actually you don't really need to do any configurations right now.

## 4.2.3. Deploying the project

While creating any web project you could experience a pain writing ant scripts and managing the packaging even when writing the most trivial web applications. With JBoss Developer Studio you are saved from such a pain. All you need is to start JBoss Server and launch your application in your favorite browser.

You can also create a war archive with <u>JBDS's Archive Tools</u> and export it to any web server.

## 4.2.3.1. WAR Config

Project archives managing is available through *Project Archives view*.

- Select Window > Show view > Other > JBoss Tools > Project archives from menu bar
- Select a project in Package Explorer you want to be archived

In Project Archives you will see available archive types for the project:



## Figure 4.7. Project Archives

• Click, for example, WAR option to create war archive

In the New WAR dialog you can see automatically selected default values.

<b>9</b>	New WAR	×
Create a new a	archive	
Create a new ar	chive consisting of filesets in the workspace.	
Archive informa	ation	
Archive name:	🖸 jspHello.war	
Destination:	SpHello Workspace Filesystem	
Archive type		
Standard are	chive using zip compression	
<ul> <li>Exploded an</li> </ul>	chive resulting in a folder (no compression)	
0	< <u>Back</u> Next > Enish Cancel	

Figure 4.8. New WAR Archive

• Click *Next* to see a stub archive configuration for your project:

😌 New WAR	×
WAR Archive Stub	
Below is a stub archive configuration for your project. You can customize this structure further after pressing finish.	
Preview	
🗢 🦲 jspHello.war	
VEB-INF	
a 🔁 🔁 lib	
🔜 **/*.jar: jspHello	=
▽ 🗁 classes	
🗟 **/*: classes	
🗟 **/*: WebContent	<b>v</b>
Image: Section of the section of t	Cancel

## Figure 4.9. Stub Archive Configuration

• Click *Finish.* The *.war* file will appear in Package Explorer and also in Project Archives view as structure tree:



Figure 4.10. Archive is Created

🗍 Project archives 🛿 🖉 Tasks	🤪 JBoss Server View	📮 Console	🔂 🗆 🖸
🗢 📋 jspHello.war			
INF			
🕨 🗁 lib			
🗢 🗁 classes			
🗟 **/*: classes			
🗎 **/*: WebContent			

## Figure 4.11. Archive in Project Archives View

Via Project Archives view you could now edit your archive, add new folders, publish to server, and so on:



## Figure 4.12. Configure Archive

## 4.2.3.2. Auto redeploy

When you are creating a web application and register it on JBoss Server it is automatically deployed into */deploy* directory of the server. JBDS comes with the feature of auto-redeploy. It means that you don't need to restart JBoss Server. Any changes made in the application in exploded format will trigger a redeployment on the server.

## 4.2.4. JSP Page Preview

JBDS comes with JSP design-time preview features. When designing JSP pages you can easily preview how they will look during runtime. You can even <u>attach your stylesheet to the Preview</u>.

• Make a little change to *hello.jsp* page, e.g. put this code snippet:

<%= new java.util.Date() %>

• Click Save button.

• Switch to Preview page by clicking Preview tab at the bottom of the page. You will see how the page will look at runtime.

# 4.2.5. Launch JSP Project

Let's now launch our project on server. We'll use JBoss Server that is shipped with JBoss Developer Studio. You can do it by performing one of the following actions:

• Start JBoss Server from <u>JBoss Server view</u> by clicking the Start icon.

😲 JBoss Server View 🛿	*05	Ð	- 8

## Figure 4.13. Starting Server

Click the Run icon or right click your project folder and select Run As > Run on Server. If you
haven't made any changes in web.xml file or cleared it out you can launch the application by
right clicking the hello.jsp page and selecting Run on the Server.



## Figure 4.14. Run Project

You should see the next page in a Browser :



## Figure 4.15. Running Project

Thus with the help of this chapter you've learnt how to organize a Dynamic Web Project with a minimal configuration, add any staff to it (in our case it's just one jsp page) and deploy and run it on the JBoss Server shipped with JBDS.

# RAD development of a simple JSF application



#### Note:

We highly recommend developing in Seam. This chapter is for users who for some reason cannot use Seam.

In this chapter you will see how to create a simple JSF application being based on "RAD" philosophy. We will create the familiar Guess Number application. The scenario is the following. You are asked to guess a number between 0 and 100. If the guess is correct, a success page is displayed with a link to play again. If the guess is incorrect, a message is printed notifying that a smaller or a larger number should be entered and the game continues.

We'll show you how to create such an application from scratch, along the way demonstrating powerful features of JBoss Developer Studio such as project templating, Visual Page Editor, code completion and others. You will design the JSF application and then run the application from inside JBoss Developer Studio using the bundled JBoss server.

# 5.1. Setting up the project

First, you should create a JSF 1.2 project using an integrated JBDS's new project wizard and predefined templates. Follow the next steps:

 In Web Projects View (if it is not open select Window > Show View > Others > JBoss Tools Web > Web Projects View) click Create New JSF Project button.



## Figure 5.1. Create New JSF Project

- Put GuessNumber as a project name, in JSF Environment drop down list choose JSF 1.2
- Leave everything else as it is and click Finish

Our project will appear in Project Explorer and Web Projects Views. As you can see JBoss Developer Studio has created for us the whole skeleton for the project with all needed libraries, faces-config.xml and web.xml files.



## Figure 5.2. New JSF Project

As the project has been set up, new JSP pages should be created now.

# 5.2. Creating JSP Pages

Here, we are going to add two pages to our application. The first page is inputnumber.jsp. It prompts you to enter a number. If the guess is incorrect, the same page will be redisplayed with a message indicating whether a smaller or a larger number should be tried. The second page is success.jsp. This page will be shown after you guess the number correctly. From this page you also have the option to play the game again.

Now, we will guide you through the steps on how to do this.

- Open faces-config.xml file
- Right click anywhere on the diagram mode
- From the context menu select New View

iaces-config.xml ⊠	- B
<u> </u>	
New Viet	v
Auto Lay Select El	ement
😌 Verify	
Paste	Ctrl + V
Input Me	hods
Diagram Tree Source	

## Figure 5.3. Create New View

- Type pages/inputnumber as the value for From-view-id
- Leave everything else as is and click *Finish*
- In the same way create another jsf view. Type pages/success as the value for From-view-id
- Select File > Save

On the diagram you will see two created views.

faces-config.xml	8	
	/pages/inputnumber.jsp	
	/pages/success.	sp

#### Figure 5.4. New Views

# 5.3. Creating Transition between two views

Then, we should create connection between jsp pages.

• In the diagram, select the *Create New Connection* icon third from the top along the upper left side of the diagram to get an arrow cursor with a two-pronged plug at the arrow's bottom

3	/pages/inputnumber.jsp
<b>b</b>	
3	
Create New	

#### Figure 5.5. Create Connection

• Click on the pages/inputnumber page icon and then click on the pages/success page icon

A transition should appear between the two icons of views.

🔊 faces-config.xml 🛙	
	/pages/inputnumber.jsp success
	/pages/success.jsp

#### **Figure 5.6. Created Connection**

• Select File > Save from the menu bar

# 5.4. Creating Resource File

A resource file is just a file with a *.properties* extension for collecting text messages in one central place. JBoss Developer Studio allows you to create quickly a resource file. The messages stored in resource file can be displayed to you on a Web page during application execution.

With resource file first, you don't hard code anything into the JSP pages. And second, it makes it easier to translate your application to other languages. All you have to do is to translate all your messages to the other language and save them in a new properties file with a name that ends with the appropriate ISO-639 language code.

It is a good idea to keep your resources inside the *JavaSource* folder, where you keep your .java files. Every time you build the project, all *.properties* files will then be copied to the *classes* folder by default.

- Right click JavaSource folder and select New > Folder
- Type game for Folder name and click Finish

Your resource file and java bean will be stored in this folder.

- Right click on game folder and select New > Properties File
- Type messages as the value for "name" attribute and click Finish

JBoss Developer Studio will automatically open messages.properties file for editing.

🔲 Messag	es.prope	rties 🛙					٥
Messages.	propertie	s					
name		v	alue	 	 	 Add	
						Edit	
						Delete	
						Цр	
						Do <u>w</u> n	
Properties	Source						

#### Figure 5.7. Messages.properties File

- Click Add button for adding new attribute to your resource file
- Type how\_to\_play for "name" and Please pick a number between 0 and 100. for value
- Click Finish
- In such a way add the next properties:

makeguess\_button=Make Guess trayagain\_button=Play Again? success\_text=How cool.. You have guessed the number, {0} is correct! tryagain\_smaller=Oops..incorrect guess. Please **try** a smaller number. tryagain\_bigger=Oops..incorrect guess. Please **try** a bigger number.

• Click *File > Save* from the menu bar

Your .properties file should now look like follows:

🔊 faces-config.xml 🛛 🔞 inp	utnumber.jsp 🔄 messages.properties 🛛	- 0
messages.properties		
name	value	bbA
how_to_play	Please pick a number between a 0 and 100.	
makeguess_button	Make Guess	Edit
tryagain_button	Play Again?	Delete
success_text	How cool You have guessed the number, {0} is correct!	
tryagain_smaller	Oops incorrect guess. Please try a smaller number.	
tryagain_bigger	Oops incorrect guess. Please try a bigger number.	Down
Properties Source		

## Figure 5.8. Properties are Added

*Up* and *Down* buttons allow you to move you attribute on the list. For delete the attribute, choose it and press *Delete* button.

If you want to change a value or a name of your attribute, click on it and than on *Edit* button.

# 5.5. Creating Java Bean

In this section you'll see how to create a Java bean that will hold business logic of our application.

- Right click game folder
- Select New > Class
- Type NumberBean for bean name

A java bean is created.

• Declare the variable of your entered number:

Integer userNumber;

JBDS allows to quickly generate getters and setters for java bean.

• Right click NumberBean.java in Package Explorer

- Select Source > Generate Getters and Setters...
- Check userNumber box and click OK

Generate Getters and Setters	×
Select getters and setters to create:	
🗢 🖬 🔹 userNumber Sele	ct <u>A</u> ll
	ect All
✓ • setUserNumber(Integer)	Cottors
Seece	Getters
Select	Setters
Allow setters for final fields (remove 'final' modifier from fields if necessary)	
Insertion point:	
Last method	\$
Sort by:	
Fields in getter/setter pairs	\$
Access modifier	
● <u>public</u> ○ protected ○ default ○ private	
□ <u>f</u> inal □ synchronized	
Generate method <u>c</u> omments	
The format of the getters/setters may be configured on the <u>Code Templates</u> preference	e page.
i 2 of 2 selected.	

## Figure 5.9. Generate Getters and Setters

• Add the declaration of the second variable

int randomNumber;

• .. other bean methods:

```
public NumberBean ()
{
  randomNumber = (int)(Math.random()*100);
  System.out.println ( "Random number: "+randomNumber);
 }
 public String playagain ()
 {
  FacesContext context = FacesContext.getCurrentInstance();
  HttpSession session =
     (HttpSession) context.getExternalContext().getSession(false);
  session.invalidate();
  return "playagain";
 }
 public String checkGuess ()
 {
  // if guessed, return 'success' for navigation
  if ( userNumber.intValue() == randomNumber )
  {
   return "success";
  }
else
 {
   FacesContext context = FacesContext.getCurrentInstance();
   ResourceBundle bundle = ResourceBundle.getBundle("game.messages",
   context.getViewRoot().getLocale());
   String msg = "";
   // if number bigger, get appropriate message
   if ( userNumber.intValue() > randomNumber )
     msg = bundle.getString("tryagain_smaller");
   else // if number smaller, get appropriate message
     msg = bundle.getString("tryagain_bigger");
   // add message to be displayed on the page via <h:messages> tag
   context.addMessage (null, new FacesMessage(msg));
   // return 'tryagain' for navigation
   return "tryagain";
  }
 }
```

And the import declarations:

import javax.faces.context.FacesContext;

import javax.servlet.http.HttpSession; import javax.faces.application.FacesMessage; import java.util.Locale; import java.util.ResourceBundle;

The whole java bean should look as follows:

```
import javax.faces.context.FacesContext;
import javax.servlet.http.HttpSession;
import javax.faces.application.FacesMessage;
import java.util.Locale;
import java.util.ResourceBundle;
public class NumberBean
{
 Integer userNumber;
 int randomNumber; // random number generated by application
public Integer getUserNumber ()
 {
  return userNumber;
 }
 public void setUserNumber (Integer value)
 {
  this.userNumber = value;
 }
 // constructor, generates random number
 public NumberBean ()
 {
  randomNumber = (int)(Math.random()*100);
  System.out.println (
 "Random number: " + randomNumber);
}
 public String playagain ()
 {
  FacesContext context = FacesContext.getCurrentInstance();
  HttpSession session =
     (HttpSession) context.getExternalContext().getSession(false);
  session.invalidate();
  return "playagain";
 }
```

```
// check if user guessed the number
 public String checkGuess ()
 {
  // if guessed, return 'success' for navigation
  if ( userNumber.intValue() == randomNumber )
  {
   return "success";
  }
  // incorrect guess
  else
  {
    // get a reference to properties file to retrieve messages
    FacesContext context = FacesContext.getCurrentInstance();
    ResourceBundle bundle =
      ResourceBundle.getBundle("game.messages",
      context.getViewRoot().getLocale());
    String msg = "";
    // if number is bigger, get appropriate message
    if ( userNumber.intValue() > randomNumber )
     msg = bundle.getString("tryagain_smaller");
    else // if number smaller, get appropriate message
     msg = bundle.getString("tryagain_bigger");
   // add message to be displayed on the page via <h:messages> tag
    context.addMessage (null, new FacesMessage(msg));
   // return 'tryagain' for navigation
    return "tryagain";
  }
 }
}
```

# 5.6. Editing faces-config.xml File

In this section you know about faces-config.xml file.

This file holds two navigation rules and defines the backing bean used.

- · Open faces-config.xml file in a source mode
- Add here one more navigation rule and a managed bean declarations that the content of the file looks like this:

```
<?xml version="1.0" encoding="UTF-8"?>
<faces-config version="1.2" xmlns="http://java.sun.com/xml/ns/javaee
```

```
xmlns:xi="http://www.w3.org/2001/XInclude"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
    http://java.sun.com/xml/ns/javaee/web-facesconfig_1_2_.xsd">
 <navigation-rule>
  <from-view-id>*</from-view-id>
  <navigation-case>
   <from-outcome>playagain</from-outcome>
   <to-view-id>/pages/inputnumber.jsp</to-view-id>
  </navigation-case>
 </navigation-rule>
 <navigation-rule>
  <from-view-id>/pages/inputnumber.jsp</from-view-id>
  <navigation-case>
   <from-outcome>success</from-outcome>
   <to-view-id>/pages/success.jsp</to-view-id>
  </navigation-case>
 </navigation-rule>
 <managed-bean>
  <managed-bean-name>NumberBean</managed-bean-name>
  <managed-bean-class>game.NumberBean</managed-bean-class>
  <managed-bean-scope>session</managed-bean-scope>
 </managed-bean>
</faces-config>
```

The first navigation rule states that from any page (\* stands for any page) an outcome of playagain will take you to */pages/inputnumber.jsp*. Outcome values are returned from backing bean methods in this example. The second navigation rule states that if you are at the page */pages/inputnumber.jsp*, and the outcome is success, then navigate to the */pages/success.jsp* page.

# 5.7. Editing the JSP View Files

Now, we will continue editing the JSP files for our two "views" using Visual Page Editor.

# 5.7.1. Editing inputnumber.jsp page

First, let's dwell on how to edit inputnumber.jsp.

On this page we will have an output text component displaying a message, a text field for user's number entering and a button for input submission.

• Open inputnumber.jsp by double-clicking on the /pages/inputnumber.jsp icon

The Visual Page Editor will open in a screen split between source code along the top and a WYSIWIG view along the bottom. You can see that some JSF code will be already generated as we choose a template when creating the page.

At the beginning it's necessary to create a <h:form> component where all others components are put.

- Place the mouse cursor inside <f:view> </f:view>
- · Go to JBoss Tools Palette and expand JSF HTML folder by selecting it
- Click on <h:form> tag

🚿 JBoss Tools Palette 🛛 📃 🗖
🛠 🗟 🛇
🗁 JBoss Ajax4jsf
➢ JBoss RichFaces
🕞 JBoss Seam
🕞 JSF HTML 🔹
🐼 JSF HTML taglib
column
commandButton
ee commandLink
🖽 dataTable
5! form
🖻 graphicImage
🕅 inputHidden
🕶 inputSecret
ab inputText
🔢 inputTextarea
🖆 message
🖆 messages
outputFormat
🖉 outputLabel
🖞 outputLink
🖉 outputText
📰 panelGrid
panelGroup
selectBooleanCheckbox
🗄 selectManyCheckbox
selectManyListbox
= selectManvMenu

#### Figure 5.10. Insert h:form

• In the dialog Insert Tag select *id* and click on this line below the value header. A blinking cursor will appear in a input text field inviting to enter a value of id

Attribute name       Value         accept       value         acceptcharset       value         binding       value         dir       value	
Attribute name Value accept acceptcharset binding dir	
accept acceptcharset binding dir	
acceptcharset binding dir	
binding dir	
dir	
enctype	
id .	
lang	
onclick	
ondblclick	
onkeydown	
onkeypress	

## Figure 5.11. Define Id of Form

• Type inputNumbers and click Finish

In source view you can see the declaration of a form.



## Figure 5.12. Created Form

First let's declare the properties file in inputnumber.jsp page using the loadBundle JSF tag.

selectManyMenu

selectOneMenu selectOneRadio

×

• Put this declaration on the top of a page, right after the first two lines:

<f:loadbundle <b="">basename="game.messages" va</f:loadbundle>	ır="msg"/>
As always JBDS provides code assist:	
🔊 faces-config.xml 🛛 😥 🎲 inputnumber.jsp 🕄 🖉 messages.pm	operties 🛛 🐨 🖉 JBoss Tools Palette 🕱 🖓 🗖
<pre>de taglib uri="http://java.sun.com/jsf/html" prefix de taglib uri="http://java.sun.com/jsf/core" prefix cf:ll Stor f:loadBundle </pre>	The second se
	<ul> <li>✓ outputLabel</li> <li>☆ outputLink</li> <li>✓ outputText</li> <li>ImpanelGrid</li> <li>◇&gt; panelGroup</li> <li>✓ selectBooleanCheckbox</li> <li>SelectManyCheckbox</li> </ul>

## Figure 5.13. Code Assist

Visual/Source Visual Source Preview

f:I

- Switch to Visual tab, so it could be possible to work with the editor completely in its WYSIWYG mode
- Click on *outputText*, drag the cursor over to the editor, and drop it inside the blue box in the editor
- Select *value* and click on this line below "value" header
- Click ... button next to the value field

JBDS will nicely propose you to choose within available values:

<b>9</b>	Edit Value	×
<h:outputtext></h:outputtext>		
🍓 Managed Beans		
Resource Bundles		
ISF Variables		
	[	Ok Cancel

# Figure 5.14. Choose Value

- Expand Resource Bundles > msg
- Select *how\_to\_play* value and click *Ok*. Then click *Finish*

<b>9</b>	Edit Value	2
<h:outputtext></h:outputtext>		
🗟 Managed Beans	F	7
🗢 偏 Resource Bundles		
🗢 🛅 msg		
how_to_play		
makeguess_button		
o success_text		
<ul> <li>tryagain_bigger</li> </ul>		
<ul> <li>tryagain_button</li> </ul>		
tryagain smaller		•
	Ok Cancel	

## Figure 5.15. Selecting Value

The text will appear on the page:

1 🔝	ces-config.xml 🔯 *inputnumber.jsp 🛿 🔲 messages.properties	- 8
•	¢ B I U A	
× ŵ	Please pick a number between a 0 and 100.	
è.		
html	body f:view h:form	×
Visua	al/Source Visual Source Preview	

## Figure 5.16. Created OutputText Component

- Switch to Source mode and insert <br/> tag after <h:outputText> component to make a new line.
- Click Save button.
- On the Palette click on *inputText,* drag the cursor over to the editor, and drop it inside the editor after the text.
- Switch to a Source mode and insert <br/> tag after <h:outputText> component to make a new line
- Click Save button
- On the Palette click on *inputText,* drag the cursor over to the editor, and drop it inside the editor after the text
- Select *value* and click on this line below "value" header
- Click ... button next to the value field
- Expand Managed Beans > NumberBean
- Select userNumber value and click Ok
- Switch Advanced tab
- Select id and click on this line below "value" header
- Type userNumber in text field

- Select required and click on this line below "value" header
- Click ... button next to the value field
- Expand Enumeration and select true as a value

9	Edit Required	×
<h:inputtext></h:inputtext>		<b>I</b>
▽ 🗁 Enumeration		
🗢 false		
– true		
👂 🍓 Managed Beans		
Resource Bundles		
👂 🗁 JSF Variables		
	Ok	Cancel

#### Figure 5.17. Add "required" Attribute

- Click Ok, then click Finish
- · Go to Source mode
- Add the validation attribute to <f:validateLongRange> for user input validation

<h:inputText id="userNumber" value="#{NumberBean.userNumber}" required="true"> <f:validateLongRange minimum="0" maximum="100"/>

</h:inputText>

- Click Save button
- Again select Visual mode
- On the Palette, click on *commandButton*, drag the cursor over to the editor, and drop it inside the editor after the inputText component.
- In the editing dialog select value and click on this line below "value" header
- Click ... button next to the value field
- Expand Resource Bundles > msg and select makeguess\_button as a value

- Click Ok
- Select action and click on this line below "value" header
- Type NumberBean.checkGuess in text field
- Click Finish
- In Source mode add <br/>tags between <outputText> , <inputText> and
   commandButton> components to place them on different lines

inputnumber.jsp page should look like this:

```
<%@ taglib uri="http://java.sun.com/jsf/html" prefix="h" %>
<%@ taglib uri="http://java.sun.com/jsf/core" prefix="f" %>
<f:loadBundle basename="game.messages" var="msg"/>
<html>
<f:view>
  <h:form id="inputNumbers">
   <h:outputText value="#{msg.how_to_play}"/>
   <br/>br/>
   <h:messages style="color: blue"/>
   <br/>br/>
   <h:inputText id="userNumber" value="#{NumberBean.userNumber}" required="true">
      <f:validateLongRange minimum="0" maximum="100"/>
   </h:inputText>
   <br/><br/>
   <h:commandButton value=
       "#{msg.makeguess_button}" action="#{NumberBean.checkGuess}"/>
 </h:form>
</f:view>
</html>
```

## 5.7.2. Editing success.jsp page

In the same way like inputnumber.jsp, edit success.jsp page. Its whole source should be the next:

```
<%@ taglib uri="http://java.sun.com/jsf/html" prefix="h" %>
<%@ taglib uri="http://java.sun.com/jsf/core" prefix="f" %>
<f:loadBundle basename="game.messages" var="msg"/>
<html>
<f:view>
```

<h:form id="result"></h:form>
<h:outputformat value="#{msg.success_text}"></h:outputformat>
<f:param value="#{NumberBean.userNumber}"></f:param>
<h:commandbutton value="&lt;/td"></h:commandbutton>
"#{msg.trayagain_button}" action="#{NumberBean.playagain}"/>

Again you can use code assist provided by JBDS when editing jsp page:

👜 faces-config.xml 🛛 👜 inputnumber.jsp	🗉 messages.properties 🛛 😥 *success.jsp 😂 👋 🦹	- 8	🎾 JBoss Tools Palette 😫 📃 🗖
<pre></pre>			<b>%</b> 🗟 🛇
<pre><li>taglib uri="http://java.sun.com/jsf/core" prefix="f" %&gt;</li></pre>		Boss Aiax4isf	
<pre><r: <html="" basename="game.messages" coadbundle=""></r:></pre>	var=msg <sup>*</sup> />		CalBoss BichEacos
<head></head>			C IPorc Soom
<title></title>			
<body></body>			SF HIML taglib
<t: view=""></t:>			column
<h:outputformat td="" value<=""><td>="#{msg.success text}"&gt;</td><td></td><td> commandButton</td></h:outputformat>	="#{msg.success text}">		commandButton
f:param_value="#	edt.		e commandLink
	(i) msg	-	data lable
4	0 NumberBean		graphic mage
		-	g graphicinage
▼ [	(a) applicationScope		the input Cogret
X Hannah Van barrand the	(a) cookie		ah inputText
w How cool You have quessed the	n ③ facesContext		目 input lext
D.	(a) header		message
201	(i) headerValues		messages
			🐼 outputFormat
	l initraram		/ outputLabel
	(a) param		🖞 outputLink
	③ paramValues		/ outputText
	@ requestScope	t	panelGrid
			opanelGroup
			selectBooleanCheckbox
html body f:view h:form h:outputFormat f:	param	×	8 selectManyCheckbox
Visual/Source Visual Source Preview			selectManyListbox

## Figure 5.18. Code Assist for <f:param>

This page, success.jsp, is shown if you correctly guessed the number. The <h:outputFormat> tag will get the value of success\_text from the properties file. The {0} in success\_text will be substituted for by the value of the value attribute within the <f:param> tag during runtime.

At the end, you have a button which allows you to replay the game. The action value references a backing bean method. In this case, the method only terminates the current session so that when you are shown the first page, the input text box is clear and a new random number is generated.

• Switch to Preview mode to see how this page will look in a browser:
🔊 faces-config.xml	🗟 inputnumber.jsp 🛛 🔲 mess	ages.properties	📾 success.jsp	"1	- 0
Please pick a nun #{NumberBean.user	ıber between a 0 and 100. <sub>Numb€</sub>				
					]
Visual/Source Visual S	ource Preview				

### Figure 5.19. Success.jsp in Preview Mode

### 5.8. Creating index.jsp page

Now you know how to create index.jsp page.

The index.jsp page is the entry point of our application. It's just forwarding to inputnumber.jsp page.

- Right click WebContent > New > JSP File
- Type *index* for name field and choose *JSPRedirect* as a template
- Click Finish
- The source for this page should be like the following:

```
<!doctype html public "-//w3c//dtd html 4.0 transitional//en">
<html>
<body>
<jsp:forward page="/pages/inputnumber.jsf" />
</body>
</html>
```

Note the *.jsf* extension of a page. It means that we trigger the JSF controller servlet to handle the page according the servlet mapping in the faces-config.xml file.

### 5.9. Running the Application

Finally, we have all the pieces needed to run the application.

- Start up JBoss server by clicking on the *Start* icon in JBoss Server view. (If JBoss is already running, stop it by clicking on the red icon and then start it again. After the messages in the Console tabbed view stop scrolling, JBoss is available)
- Right-click on project Run AS > Run on Server
- Play with the application by entering correct as well as incorrect values

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Please pick a number between a 0 and 100.	
Make Guess	
Done	

### Figure 5.20. You are Asked to Enter a Number Between 0 and 100

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Ele Edit View Go Bookmarks Tools Help
🖕 🗣 🖓 😒 🕎 🤇 http://localhost:8080/GuessNumber/pages/inputnumber.jsf 💌 💿 Go 💽
Please pick a number between a 0 and 100.
• inputNumbers:userNumber: Validation Error: Specified attribute is not between the expected values of 0 and 100.
-6
Make Guess
Done

Figure 5.21. Your Input is Validated and an Error Message is Displayed if Invalid Input was Entered

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🖕 🗣 🚽 🧭 😢 😭 🏹 🕻 http://localhost:8080/GuessNumber/pages/inputnumber.jsf 💌 📀 G	•
Please pick a number between a 0 and 100.	
• Oops., incorrect guess. Please try a smaller number.	
45	
Make Guess	
Plake Guess	
Done	

Figure 5.22. After You Enter a Guess, the Application Tells You Whether a Smaller or a Larger Number Should be Tried

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🖕 🔹 🧼 - 🥰 💿 🏠 🛴 http://localhost:8080/GuessNumber/pages/inputnumber.jsf	🔽 🔘 Go	G.
How cool You have guessed the number, 32 is correct! Play Again?		
Done		

Figure 5.23. Your Guess is Correct

### **Project Examples**

*JBoss Developer Studio* provides an option to download and import a ready-made project that you can explore and derive some useful technology implementation lessons.

### 6.1. Downloading a Project Example

To download a project example and start working with it you need to take a few steps:

- Go to the menu bar and select File > New > Other ....
- Select Jboss Tools > Project Examples(You can also call the Project Examples from menu bar: Help > Project Examples...)

<b>1</b>	New Pro	oject Example		×
Project Example				
Import Project Examp	le			
Projects:				
type filter text				
Þ Seam				
▷ Portlet				
▶ ESB				
▶ RichFaces				
▷ Other				
Descriptions				
Description:				
Project name:				
Project size:				
URL:				
Show the Ouick Fi	< dialog			
(?)	< Back	Next >	Finish	Cancel

### Figure 6.1. Project Examples

• Now in the New Project Example dialog you can select a project you would like to explore

Project Examples Wizard provides a filter field to more easily locate the project examples you want, so you can type in the project you would like to explore in the field.

8	New Project Example
Project Examp	ble 🛁 🔶
Import Project I	Example
Projects:	
type filter text	
▽ Seam	A
Seam D	/D Store Example - EAR
Seam Bo	ooking Example - EAR
Seam Bo	ooking Example - EAR mavenized
Seam Bo	ooking Example - WAR Standalone
▷ Portlet	
Description:	
This example d Transaction and This example c	emonstrates the use of Seam in a Java EE 5 environment. I persistence context management is handled by the EJB container. an also run in Tomcat with JBoss Embedded.
Project name:	jboss-seam-jpa
Project size:	5.24M
URL:	http://anonsvn.iboss.org/repos/ibosstools/workspace/snieza/seam-exampl
C Show the O	uick Fix dialog
M Show the Q	uick fix dialog
0	< <u>B</u> ack Next > <u>F</u> inish Cancel

### Figure 6.2. Selecting a Project Example

$\bigcirc$	Note:
	The Show the Quick Fix Dialog option is described in the Quick Fixes section.

• Press Finish to start downloading the project from the repository

When downloading is finished the project will be imported automatically and you will be able to see it in the Package Explorer.

Now you can run the application on the server.



### Figure 6.3. Seam Demo Application run on the Server

### 6.2. Quick Fixes

Project Examples Wizard has an option for making quick fixes for the imported project to easily fix possible issues like missing servers, Seam runtimes etc.

To enable quick fixing option you need to check the *Show the Quick Fix dialog* while choosing the *Project Example*.

When the project you selected is downloaded it will be checked for missing dependences and if there are some you will see a dialog listing the problems.

8	Quick Fix		×
Quick Fix Select a marker and click the C	Quick Fix button.		0
Markers:			
Description	Resource	Туре	
Seam Runtime "Seam 2.0.FP"	booking	Seam Project Problem	
Unbound classpath container:	booking-ejb	Build Path Problem	
The project cannot be built unt	booking-ejb	Java Problem	
0		Quick Fix	inish

### Figure 6.4. Quick Fix Dialog box

To fix the problem you need to:

- Select the problem from the list
- Click Quick Fix button

You will be offered a solution or a number of solutions to the problem.

<b>19</b>	Quick Fix	×
Quick Fix Select the fix for 'Seam Runtime "Seam 2.	0.FP" specified for Seam project "booking" does no	ot exist.
Select a fix:		
Problems:		
Resource	Location Unknown	Select <u>A</u> ll
0	Einish	Cancel

### Figure 6.5. Quick Fix Dialog box: Selecting a Fix

In this case(see the image above), when the *Finish* button is pressed, Seam Settings dialog box will be displayed where you need to provide a path to the Seam environment to fix the issue.

When the problem is fixed you will be returned to the Quick Fix dialog box with the remaining problems to be fixed.

## FAQ

For more information on JBoss Developer Studio features, refer to the following FAQ to get the answers on the most "popular" questions.

# 7.1. What should I do if Visual Page Editor does not start under Linux

Linux users may need to do the following to get the Visual Page Editor to work correctly on their machines.

1. On Red Hat based Linux distributions install the xpLib.i386 package

2. Type

In -s libstdc++.so.5.0.7 libstdc++.so.5

3. and/or use

yum install libXp

- 4. Open the JBDS perspective. If you see the Help view open, close it and restart JBDS
- 5. If none of these work, do the following:
  - Clear the Eclipse log file, <workspace>\.metadata\.log
  - Start Eclipse with the -debug option:

eclipse -debug

• Post the Eclipse log file (<workspace>\.metadata\.log) on the forums.

# 7.2. Do I need to have JBoss Server installed to run JBoss Developer Studio?

No. JBoss Developer Studio already comes bundled with JBoss Server. We bundle it together so that you don't need to download any additional software and can test your application in a Web browser right away.

If you want to use a different JBoss server installation, after JBoss Developer Studio is installed open Servers View (select *Window > Show View > Others > Server > Servers*), then right click on this *view > New > Server* and follow the wizards steps to point to another Jboss Server installation.

JBoss Developer Studio works with any servlet container, not just JBoss. For more information on deployment, please see the Deploying Your Application section.

### 7.3. I have an existing Seam 1.2.1 project. Can I migrate/ import the project to a JBDS Seam project?

We highly recommend you to create Seam 1.2.1 project using the JBDS. In other case try to do manually:

· Create a Seam Web project to get the JBoss tools structure

Then from your Seam 1.2.1 seam-gen project start doing the following:

- Copy src to src
- Copy view to Web content
- · Copy resources individual files to where they are in the seam web project etc.

## 7.4. I have an existing Struts or JSF project. Can I open the project in JBDS?

Yes. From main menu select *File > Import > Other > JSF Project (or Struts Project)* and follow wizards steps.

### 7.5. Can I import a .war file?

Yes. Select *File > Import > Web > WAR file,* then follow importing steps.

## 7.6. Is it possible to increase the performance of Eclipse after installing your product?

JBoss Developer Studio preconfigures eclipse via the eclipse.ini file to allocate extra memory, but if you for some reason need more memory then by default, you can manually make adjustments in this file. For example:

-vmargs -Xms128m -Xmx512m -XX:MaxPermSize=128m

# 7.7. How can I add my own tag library to the JBoss Tools Palette?

See <u>Adding Tag Libraries</u> in Visual Web Tools Guide.

# 7.8. How to get Code Assist for Seam specific resources in an externally generated project?

To get Code Assist for Seam specific resources in an externally generated project, you should enable Seam features in Project Preferences. Right click an imported project and navigate *Properties > Seam Settings*. Check *Seam support* box to enable all available <u>Seam Settings</u>.

# 7.9. How to import an example Seam project from jboss-eap directory?

To import an example Seam project from *jboss-eap* into your working directory, you should perform the following steps:

- Go to New > Other > Java Project from Existing Buildfile
- Point to the *build.xml* of any chosen project by pressing *Browse* button
- Hit *Finish* to open the project

As these seam examples are non WTP projects, next you should enable Seam support for them. To do that, right click the project and go to *Properties > Seam Settings*.

# 7.10. Is a cross-platform project import possible for JBDS?

Yes. You can easily import created in Linux JSF, Struts or Seam project to Windows and vice versa.

To do the transferring JSF, Struts or Seam project, go to *Menu > Import > General > Existing Projects into Workspace,* select the folder where your project stored and press *Finish.* 

### **Further Reading**

### JSF Tools Reference Guide (html)

From this guide you'll discover all peculiarities of work at a JSF project. You'll learn all shades that cover the process of project creation and take a closer look at the JSF configuration file. Also you'll get to know managed beans and how to work with them and find out, how to create and register a custom converter, custom validator and referenced beans in a JSF project.

### • JSF Tools Tutorial (html)

This tutorial will describe how to deal with classic/old style of JSF development and how to create a simple JSF application using the JBoss Developer Studio.

### • Struts Tools Reference Guide (html)

In Struts Tools Reference Guide you will learn how to create and work with a new struts project. This guide also provides information about graphical editor for struts configuration files, tiles files, and struts validation files.

### • Struts Tools Tutorial (html)

This tutorial will describe the classical style of Struts development, and will step-by-step show you how to create a simple Struts application in JBoss Developer Studio.

#### Seam Dev Tools Reference Guide (html)

This guide helps you to understand what Seam is and how to install Seam plug-in into Eclipse. It tells you the necessary steps to start working with Seam Framework and assists in a simple Seam Project creation. Also you will learn how to create and run the CRUD Database Application with Seam as well as find out what Seam Editors Features and Seam Components are.

• Visual Web Tools Reference Guide (html)

### JBoss Server Manager Reference Guide (html)

This guide covers the basics of working with the JBoss server manager. You will read how to install runtimes and servers and quickly learn how to configure, start, stop the server and know how deployment and archiving process. You will find out how to manage installed JBoss Servers via JBoss AS Perspective. You will also read how to deploy modules onto the server.

### • jBPM Tools Reference Guide (html)

With jBPM Tools Reference Guide we'll help you to facilitate a cross-product learning and know how you can speed your development using special editors and visual designers. We'll also guide you through the steps on how to create a simple process and test it within jBPM jPDL perspective.

#### • Hibernate Tools Reference Guide (html)

Throughout this guide you will learn how to install and use Hibernate Tools bath via Ant and through Eclipse. We'll supply you with the information on how to create mapping files, configuration file as well as a file for controlling reverse engineering by using specific wizards that Hibernate tooling provides. Also you will know about Code Generation and peculiarities of work within Hibernate Console Perspective.

### • ESB Editor Reference Guide (html)

This guide provides you with the information on ESB Editor which allows you to develop ESB file.

### • JBoss Portal Tools Reference Guide (html)

The guide gives a detail look at how you can easily build a Portlet Web Application with JBoss Tools and deploy it onto JBoss Portal.

### • JBoss WS User Guide (html)

This guide gives you practical help on JBossWS usage.

### • Exadel Studio Migration Guide (html)

This document is intended to help you to migrate an existing Exadel JSF or Struts projects from Exadel Studio into JBoss Developer Studio.