JBoss Server Manager Reference Guide



Version: 2.1.0.GA

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Quick Start with JBoss Server

This chapter covers the basics of working with the JBoss Server.

1.1. Key Features of JBoss Server

For a start, we propose you to look through the table of main features of JBoss Server:

Table 1.1. Key Functionality for JBoss AS and Archive Tools

Feature	Benefit	Chapter
JBoss AS plugin	Using WTP, JBoss AS plugin allows working with the server in run or debug mode. You can easily install runtimes and servers, copy the existing runtime configuration or configure it up to your needs.	runtimes and servers
JBoss AS Perspective	It makes managing installed JBoss Server quite easy and includes the standard Console and Properties views, and specially added Project archives View and JBoss Server View for that purpose.	JBoss AS perspective
Modules Deployment	A number of ways, provided by WTP and JBoss Tools, to deploy either a project or a single file on the server.	deploying modules
TPTP Support	Test and Performance Tools Platform (TPTP) profiling.	TPTP support

If you already have installed JBoss server and runtime you can quickly learn how to configure, start, stop the server, to know deployment and archiving processes. How to install runtimes and servers read in the <u>Runtimes and Servers in the JBoss AS plugin</u> chapter.

To start working with JBoss AS, select a JBoss AS Perspective via *Window > Open Perspective > Other > JBoss AS*.

1.2. Starting JBoss Server

Starting JBoss Server is quite simple. You can control the server behaviour with the help of a special toolbar in the JBoss Server View where you could *start* it in a regular or debug mode, *stop* it or *restart* it and *publish* to the server.

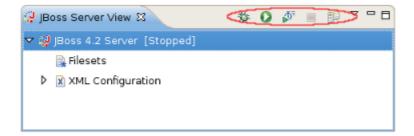


Figure 1.1. JBoss Server Toolbar

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.*

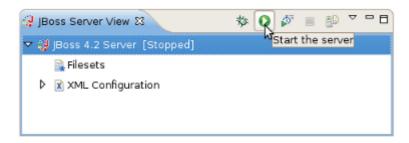


Figure 1.2. Start JBoss Server

1.3. Stopping JBoss Server

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

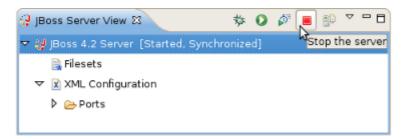


Figure 1.3. Stop JBoss Server

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

Learn more about the JBoss Server View here.

1.4. Project Archiving

JBoss Tools comes with our own archives tool. The Project Archives plugin consists primarily of a view to set up each packaging configuration (*Window* > *Show View* > *Other* > *JBoss Tools* > *Project archives*).

Right clicking in the Project archives view you can create War, EJB War, EAR or JAR archive.

ි Project archives ස		G - D
New Archive	💽 🗔 WAR	
	🗔 EJB JAR	
	🔁 EAR	
	📓 JAR	

Figure 1.4. Archive Creating

Using the context menu on the item you can initiate a *full build* on archive, *edit, delete* or *publish* it.

Project archives 🛙	
▽ 🗁 JSFDemo	
🕨 👼 JSFDemo.war [/jSFDemo	New Archive > New Folder > New Fileset > New User Library Fileset > Build Archive (Full) > Edit Archive > Delete Archive > Publish To Server > Edit publish settings >

Figure 1.5. Context Menu on the Item

If you wish, you can assign a hotkey for the Build Project Archive action. A key binding can be added by navigating to *Window > Preferences > General > Keys.*

E	Prefe	rences			X
type filter text	Keys				•
 ✓ General ▷ Appearance Capabilities 	Scheme: Default				
Compare/Patch	Command	Binding	When	Category Use	r
Content Types	Build All	Ctrl+B	In Windows	Project	-
▶ Editors	Build Automatically	carro	in windows	Project	
Keys	Build Clean			Project	
Network Connect =	Build Project			Project	
Perspectives Search	Build Project Archives	Shift+Tab	In Windows	Projects U	
Security	Change ASCII/Binary Property			CVS	
Service Policies	Change Function Signature	Shift+Alt+C	JavaScript View	Refactor - JavaScrip	
 Startup and Shu Web Browser Workspace 	Copy Command Unbind Comman	nd Restore Cor	nmand		
▶ Ant	Name: Build Project Archives Description: This will build the project	t orshives for	Conflicts:		
▶ BPEL	the selected project	t archives for	Command	When	
Data Management			Command	wnen	_
♦ Drools	Binding: Shift+Tab	•			
Drools Task					
FreeMarker Editor	When: In Windows	0	<	III	П
Guvnor					
▷ Help				Filters Export C	.sv
HQL editor				Restore Defaults App	ly
▶ Install/Update ▼	<	10.			>
?				Cancel OK	

Figure 1.6. Setting the Hotkey for Build Project Archive Action

To perform the building of the project archives, select the project in the Package Explorer view and execute the hotkey combination you assigned for this action.

Learn more about the Project Archives View here.

1.5. Deploying an Application to a Server

There are two times to deploy your application:

- · While creating it
- · After it already exists

When you create a new project (Seam, JSF or Struts) with the New Project or Import Project wizards, the one of wizards steps has a *Target Runtime* and *Target Server* sections. You can deploy the application through the appropriate selection in these sections.

New Seam Project	×
Seam Web Project	A Com
Create standalone Seam Web Project	E
Project name: SeamProject	
Project contents:	
☑ Use <u>d</u> efault	
Directory; /root/workspace/SeamProject	Browse
- Target Runtime	
JBoss 4.2 Runtime	♦ New
Target Server	
JBoss 4.2 Server	\$ New
Configurations	
Default Configuration for JBoss 4.2 Runtime	\$
A good starting for working with JBoss 4.2 Runtime runtime. Additional facets can later be in add new functionality to the project.	stalled to
? Back Next >	Cancel

Figure 1.7. Runtime and Server Sections in the New Project Wizard

9	Import JSF Project	
Project Folders		
Select Project Fol	ders	C C C C C C C C C C C C C C C C C C C
Web Root:*	/root/workspace/jsfProject/WebContent	<u>C</u> hange
Source Folder	/root/workspace/jsfProject/JavaSource	<u>C</u> hange
Classes Folder	e/jsfProject/WebContent/WEB-INF/classes	<u>C</u> hange
Lib Folder	kspace/jsfProject/WebContent/WEB-INF/lib	<u>C</u> hange
	Add Libraries	
Environment	JSF 1.1.02 - Reference Implementation	\$
Servlet Version:	2.4	•
Context Path*	jsfProject	
Runtime:*	JBoss 4.2 Runtime	New
Target Server:	JBoss 4.2 Server	New
		Select All
		Deselect All
0	< <u>B</u> ack <u>N</u> ext > <u>F</u> inish	Cancel

Figure 1.8. Runtime and Server Sections in the Import Project Wizard

You can deploy an existing application to a server by right-clicking the target defined server in the JBoss Servers View and then selecting *Add and Remove Projects* from the context menu.

😳 JBoss Server View 🛿		🏇 🚺 🖉 🔳 😰	~ - 8
 ✓ ^(A) JBoss 4.2 Server [Starter ☐ Filesets ✓ ☑ XML Configuration ▷ ➢ Ports 	New Open Show In Copy Paste Delete Rename Restart in Debug Restart Restart in Profile Stop Publish Explore	> F3 Shift+Alt+W Ctrl+C Ctrl+V Delete F2	
	Add and Remove Pro Monitoring Properties	Alt+Enter	

Figure 1.9. Add and Remove Projects From the Context Menu.

If this application is not assigned to a server, it will be in the left-hand available projects list. Clicking on the Add > button will add it to the right-hand configured projects list and deploy the application to this server.

C Add	and Remove Projects 🛛 🗙
Add and Remove Project Modify the projects that are o	
Move projects to the right to o	configure them on the server
Available projects:	<u>C</u> onfigured projects:
🔊 seam	Add > < Bemove Add All >>
	<< Remove All
⑦ < <u>B</u> ack	Next > Finish Cancel

Figure 1.10. Modifying The Projects that are Configured on the Server

1.6. Publishing to JBoss Server

The publishing of all the modules added to a Server is performed automatically when starting a Server.

The automatic publish of the changes made to the workspace is turned on by default in order permanently the to keep the workspace in sync with publish folder. If you need to control when to publish the changes, just disable Server Editor and Publish to the automatic publish in Server use the the

(🏥

)

button which initiates an incremental publish.

Here, we have just performed the basic steps you should know to quick start with JBoss server. In fact, there are more functionalities which you can make use of. Further we will talk about them in detail.

1.7. Other relevant resources on the topic

All JBoss Developer Studio/JBoss Tools documentation you can find <u>on JBoss Tools release</u> <u>documentation page</u> [http://docs.jboss.org/tools/2.1.0.GA].

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

Find out the answers on the frequently asked questions about JBoss AS 5 usage in the <u>JBoss5FAQ</u> [http://www.jboss.org/community/wiki/jboss5faq].

The information on how to monitor a remote JBoss Server from Eclipse you can find in the following *wiki article* [http://www.jboss.org/community/wiki/MonitorARemoteJbossServerFromEclipse].

Runtimes and Servers in the JBoss AS plugin

In this chapter we will discuss how to install runtimes and servers.

First of all it's necessary to mention that the JBoss AS plugin makes use of WTP. This includes starting and stopping servers in run or debug mode. It also includes targeting WTP projects, such as Dynamic Web Projects, to certain server runtimes in order to ensure that the proper jars from a specific server are added to the project's classpath properly.

In order to get started creating, running, and debugging J2EE applications, we should create our runtime and server instances.

2.1. Runtimes

In JBoss Tools, the main purpose of Server Runtimes is to point to a server installation somewhere on disk. In our case, this will be a JBoss installation, and it can then be used for two primary purposes:

- it provides classpath additions to WTP projects that require them.
- for JBoss server at least, it provides information necessary for the starting and stopping of the server, it tells which jars to run and which configuration to use.

2.1.1. Installing a New Runtime

You can install runtimes into eclipse from the *Window > Preferences* menu, and then select *Server > Runtime Environments* from the categories available on the left.

Chapter 2. Runtimes and Servers in the JBoss AS plugin

E		F	Preferences		×
ty	pe filter text	Server Runtime Envir	onments		⇔
	Data Management 🔺 FreeMarker Editor Help	Add, remove, or edit ser Server runtime e <u>n</u> vironn	ver runtime environments. nents:		
ľ	HQL editor	Name	Туре		<u>A</u> dd
⊳	Install/Update	🤪 JBoss 4.2 Runtime	JBoss 4.2 Runtime		Edit
	Java				
	Java EE				Bemove
⊳	JBoss jBPM				Search
⊳	JBoss Tools				
⊳	Plug-in Developmer				
⊳	Profiling and Loggin				
	Project Archives				
⊳	Report Design				
⊳	Run/Debug 🗧				
▽	Server				
	Audio				
	Default Filesets				
	Launching				
	Profilers				
	Runtime Environ				
	SWTBot Preference:				
	Team				
P	Test				
	Validation				
	Web Web Services —				
	web services				
	_				
(?			Cancel	ок

Figure 2.1. Installed Runtimes

From this preference page you can see all declared runtimes and their types as well. Here, it's possible to edit or remove existing runtimes as well as add a new one.

To create a JBoss runtime click *Add* button and choose a necessary type of runtime from the *JBoss Community* category.

Chapter 2. Runtimes and Servers in the JBoss AS plugin

	New Server		-[
efine a New Server			
Choose the type of server to	o create		
Server's <u>h</u> ost name: localh	ost		
		Download additional server adapt	er
Select the <u>s</u> erver type:			
type filter text			
👂 🗁 Basic			6
🕨 🗁 IBM			
🕨 🗁 JBoss			
🗢 📴 JBoss Community			
🤪 JBoss AS 3.2			
🤪 JBoss AS 4.0			
🤯 JBoss AS 4.2			
🤪 JBoss AS 5.0			
🤪 JBoss Deploy-Only			
Boss Enterprise Midd	leware		
Boss Application Server 4.2			
Server name:	JBoss AS 4.2 at localho	ost	
	(
0	< <u>B</u> ack N	lext > <u>F</u> inish Cancel	

Figure 2.2. Adding a Runtime

ſi	Note:
	Now there is a separation between .org servers (the <i>JBoss Community</i> category) and product server that comes with JBoss EAP in JBDS (the <i>JBoss Enterprise Middleware</i> category).

As you can see, JBoss Tools provide its own adapters such as JBoss 3.2, 4.0, 4.2 and 5.0 as well. The last one comes with its own new feature, that is a safer incremental deployment, which prevents partial deployments to be picked up by the server. It means that scanning for autodeployment is suspended while files are being copied to the deployment location and resumed when the copy is completed.



Note:

Currently we recommend you to use a fully supported JBoss 4.2 server adapter.

You'll also note a Deploy-Only Runtime type. This type provides no classpath for WTP projects. It is used solely by its server type for the purpose of setting up a deploy directory for users who don't wish to make use of starting, stopping, or debugging their projects inside eclipse.

New Server Runtime Environment	×
Edit a JBoss Runtime	
JBoss Application Server 4.2	by Red Hat
A JBoss Server runtime references a JBoss installation directory. It can be used to set up classpaths for projects which depend on as well as by a "server" which will be able to start and stop instan Name	
Boss 4.2 Runtime	
Home Directory	
/opt/jboss-4.2.3.GA	Browse
JRE	
Default JRE	≎ JRE
Configuration	
Directory: server	Browse
🏐 all	Copy
🧃 default	Delete
🏐 minimal	
<a>Back <a>Mext > Cancel	Einish

Figure 2.3. Adding a JBoss 4.2 Runtime

The following table describes all the available options of the currant wizard page.

Table 2.1. Server Runtime Wizard Parameters

Name	Description
Name	The name of a new Runtime for a chosen server. We suggest that you don't leave a default value. It's better to give descriptive names that will help to distinguish one runtime from another.

Chapter 2. Runtimes and Servers in the JBoss AS plugin

Name	Description
Home directory	The path to a directory where the runtime is installed.
JRE	The proper Java Runtime Environment. Because of the open-source nature of JBoss, a user is likely to want to modify and repackage some of the configuration-specific jboss jars and create their own configuration. Thus, rather than forcing you to copy his entire JBoss installation, the structure of the wizard allows to create only a new configuration instead.
Directory	The path to a directory where the configurations are installed.
Configuration	The list of configurations (all, default, minimal) that is updated as soon as you browse to a valid runtime installation folder.

As a result of having each runtime represent a specific configuration rather than the server installation as a whole, it is very likely you'll create several different runtimes to test each of your configurations. It becomes important to ensure your runtimes, and later your servers, are given descriptive names that help you to remember which is which.

Press Finish to see your new runtime in the list.



Note:

If you edit the configuration of a runtime, the changes don't affect the settings of the servers that currently use the runtime. To apply the changes to them also,you should double right click the server, *Overview>Runtime Environment*, make sure that necessary configuration is chosen, click *Finish* and then *Save* button.

2.1.2. Copying the existing runtime configuration

While installing a new runtime you can copy the configuration from the existing one. To do this you should perform all the steps in the *previous* section except pressing *Finish* in the New Server Runtime Environment menu.

Make sure that you browse to a valid runtime folder and can see the list of configurations (all, default, minimal) in the Configuration section . Then choose necessary Configuration from the list and click *Copy*. The next dialog should appear.

Chapter 2. Runtimes and Servers in the JBoss AS plugin

E	Copy a Configuration	×
Copy config	juration "default" to a new destination from "server".	
Name	default_copy]
Destination	server Browse]
?	Cancel OK	

Figure 2.4. Copy the existing configuration

Change the name Click on *Browse* and select your configuration location or leave as it's if you want it to be located together with other runtime configurations.

Copy a Configuration 🗙				
Copy config	juration "default" to a new destination from "server".			
Name	default_copy			
Destination	/home/vchukhutsina/Desktop Browse			
?	Cancel			

Figure 2.5. Copy the existing configuration

Click Ok and you should see the next wizard with the just added copied configuration.

Edit Server Runtime Environment	×
Edit a JBoss Runtime	Boos
JBoss Application Server 4.2	by Red Hat
A JBoss Server runtime references a JBoss installation directory. It can be used to set up classpaths for projects which depend on as well as by a "server" which will be able to start and stop instan	
Name	
JBoss 4.2 Runtime	
Home Directory	
/opt/jboss-4.2.3.GA	Browse
JRE	
Default JRE	≎ JRE
Configuration	
Directory: /home/vchukhutsina/Desktop	Browse
🏽 default_copy	Copy
	Delete
(?) < Back Next > Cancel	Einish

Figure 2.6. Runtime with copied configuration

Press Finish and you will see your new runtime in the list.

You can also change a configuration of existing runtime to a copied one in the same way from the *Window > Preferences* menu *Server > Runtime Environments* and clicking *Edit*.

2.2. Servers

WTP servers are eclipse-representations of a backing server installation. They are used to start or stop servers, deploy to servers, or debug code that will run on the server. They keep track of the modules (jars, wars, etc) you deploy to the server and also allow you to undeploy those modules (see <u>Deploying with Run On Server Wizard</u> section).

Servers can be started or stopped with different <u>command-line arguments</u> [35]. They are often backed by a runtime object representing that server's location.

2.2.1. Creating a New Server

There are many ways to get to the new server wizard. One way is to use the old standard *File > New > Other...* and then *Server*. This should show the wizard like below.

Chapter 2. Runtimes and Servers in the JBoss AS plugin

1	New Server
Define a New Server	
Choose the type of server to	o create
Server's <u>h</u> ost name: localh	ost
	Download additional server adapters
Select the <u>s</u> erver type:	
type filter text	
🕨 🗁 IBM	
JBoss	
🗢 🗁 JBoss Community	
JBoss AS 3.2	
JBoss AS 4.0	
🤯 JBoss AS 4.2	■
JBoss AS 5.0	
🤪 JBoss Deploy-Only	Server
👂 🗁 JBoss Enterprise Midd	lleware
ObjectWeb	~
JBoss Application Server 4.2	2
Server name:	JBoss AS 4.2 at localhost
_	
Server runtime environment	t: JBoss 4.2 Runtime 🌣 Add
	Configure runtime environments
⑦ < Bac	k Next > Finish Cancel

Figure 2.7. Adding a JBoss Server

A server object is that keeps track of things like command line arguments when starting or stopping, and runtimes keep track of the location of the installation. Thus, each server instance must be backed by an appropriate runtime.

New server wizard allows to name the server appropriately in the Server name field or you can use generated default name.lf it's nessecary to а restore the default name,after default you defined yours, click the Reset button(

From the list of already declared runtimes in the combo box below the view it's possible to select which runtime you want your server to be backed by. If there is no runtime that matches your needs just press the *Add...* link nearby to bring up the wizard for creating a new runtime (see the

<u>Installing a New Runtime section</u>). To configure the already installed runtimes you should go to server preferences that you can easily do by pressing the *Configure runtime environments...* link.

If the server you want to create doesn't have any installed runtime yet, the combo box and the links are absent.

New Se	rver
Define a New Server	
Choose the type of server to create	
Server's <u>h</u> ost name: localhost	
	Download additional server adapters
Select the <u>s</u> erver type:	
type filter text	
Boss	<u>^</u>
🗢 🗁 JBoss Community	
JBoss AS 3.2	
JBoss AS 4.0	
🤯 JBoss AS 4.2	=
JBoss AS 5.0	
JBoss Deploy-Only Server	
JBoss Enterprise Middleware	
DipectWeb	
JBoss Application Server 4.2	
Server name: JBoss AS	4.2 at localhost
⑦ < Back Next	> Einish Cancel
	Cancer

Figure 2.8. Installed Server Runtime Environments

In this case the next page in the wizard which has the same form as in <u>the previous section</u> will ask you to create the associated runtime.

Either way, after targeting your server to a runtime, the final screen in this wizard is largely confirmational, giving you a chance to verify that you've selected the appropriate runtime.

Chapter 2. Runtimes and Servers in the JBoss AS plugin

	New Server
reate a new JBos	s Server
Boss Application Se	rver 4.2
	ges starting and stopping instances of JBoss. Id line arguments and keeps track of which modules have been deployed
	nation below is incorrect, please press back, Installed Runtimes, eate a new runtime from a different location.
Home Directory	/opt/jboss-4.2.3.GA
JRE	/usr/lib/jvm/java-1.5.0-sun-1.5.0.16 (java-1.5.0-sun-1.5.0.16)
Configuration Locat	ion server
Configuration	default
?	< <u>B</u> ack Next > Cancel Einish

Figure 2.9. Installed Server Runtime Environments

Press *Finish* to complete the process of the server creation.

Now that we've created our runtimes and servers, we can dwell on all services and tools that JBoss Server Manager provides.

We hope, this guide helped you to get started with the JBoss Tools server manager. Besides, for additional information you are welcome on <u>JBoss forum</u> [http://www.jboss.com/index.html? module=bb&op=viewforum&f=201].

JBoss AS Perspective

This chapter tells how to manage installed JBoss Server via JBoss AS perspective.

The JBoss AS perspective is similar to the Java perspective, but it contains a few additional views. Two of the additional views are standard views, specifically the Console view and the Properties view. The other two views that are added are the Project archives view and the JBoss Server View.

3.1. The JBoss Server View

The JBoss Server View is built on Common Navigator Framework allowing extensions and is using label decorators what makes the UI enough compact without loosing the vital information.

Let's have a look at the JBoss Server View and inspect in detail all parts it consists of.

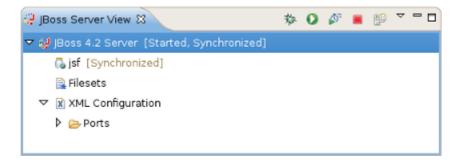


Figure 3.1. The JBoss Server View

3.1.1. JBoss Server View Toolbar

In the right top corner of the JBoss Server View there is a special toolbar which provides a quick access to starting a server (in the debug mode, run mode, or profile mode), restarting a server, stopping a server and a possibility to publish to a server.



Figure 3.2. The JBoss Server View Toolbar

In order to debug your applications or EJB's that are deployed to the server, you must start the server in debug mode. By starting the server in debug mode, eclipse will allow you to set breakpoints on code in your workspace and step through the code.

Start the server in profiling mode button allows to enable profiling actions for your application. For more details on how to start using TPTP profiling with JBoss Tools refer to <u>TPTP Support</u> chapter.

Publish to the server button will republish any modules where it has determined the workspace is out of sync with the server. It will attempt to do an incremental publish if it turns out that the module in question is capable of doing one.

3.1.2. JBoss Server View Structure

The JBoss Server View displays all declared servers as well as their current states (that is whether they are started or stopped) and statuses in the square brackets next to a server name.

🤪 JBoss Server View 🕱	疹	0	ø	P	~	
🗢 🤯 JBoss 4.2 Server [Started, Synchronized]						
 G [Synchronized] Filesets XML Configuration Ports 						

Figure 3.3. The JBoss Server View

The following table lists possible server statuses.

Table 3.1. Server Publish Status

Status	Description
Republish	The status which allows you to see if changes are awaiting
Publishing	The status which shows if changes are being updated
Synchronized	The status which allows you to see if changes are in-sync

You can control a server behavior as well as adjust some server preferences with the help of the context menu commands.

😲 JBoss Server View 🛿		参 🜔	Ø 🗉	₽ ~	-	8
 ✓ ₩ JBoss 4.2 Server [Stopped ➡ Filesets ✓ M XML Configuration ▷ ➡ Ports 	New Open Show In Show In Paste Delete Rename Debug Start Frofile Stop Publish Stopene		Shift	Ctr	F3 W > d+C d+V elete F2	
	Add and Rem Monitoring Properties	ove <u>P</u> roje	ects	Alt+E	> nter	

Figure 3.4. Context Menu Commands

All available context menu commands are described in the following table.

Name	Description
New Server	The option allows to define a new server
Open	The option opens the Server editor
Show in	This option gives an easy access to the next views: Console, Debug view, Server Log or MBean Explorer
Delete	Standard option that allows to delete the chosen server
Start	The action for stating a server in a run mode
Debug	The action for stating a server in a debug mode
Stop	The action for stopping a declared server
Publish	The action for synchronizing the publish information between the server and workspace
Explore	This action uses the native OS file explorer to browse the deploy destination. Note: The option is also available for deployed resources/ projects (see the figure below).
Add and Remove Projects	The option allows to publish a new project to the server (if its type is supported)

Name	Description
Monitoring	Possibility to add ports to be monitored on the current server
Properties	Opens the window to adjust the current server preferences

Under the server element in the JBoss Server View, you can see currently deployed to the server modules and some server extensions which provide the additional information on the server.

The context menu for any module allows you to remove it from the server, force a full or incremental republish upon it.

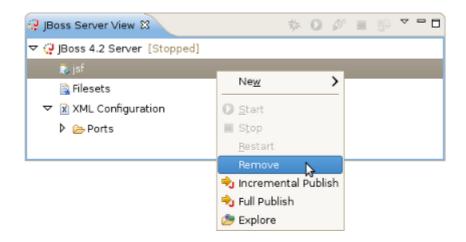


Figure 3.5. Modules Action

3.1.2.1. Filesets

The Filesets category in the JBoss Server View is intended for files filtering.

To add a new file filter, right-click the *Filesets* category and select *Create File Filter*.

The New File Filter wizard should appear.

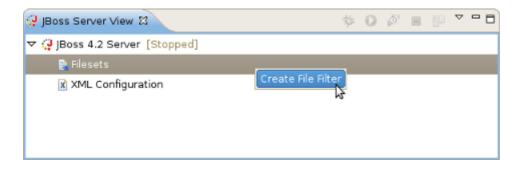


Figure 3.6. Creating a New File Filter

The wizard asks you to enter the filter name and add includes and excludes patterns. The preview box underneath gives a list of files matched to the defined patterns (see the figures bellow).

In order to set up a default fileset relative to the concrete configuration of the server runtime, use the following variable: \${jboss_config}, i. e. you should type in the *Root Directory* something like server/\${jboss_config}/. This is implemented in order you can modify the runtime's configuration and not have to manually update paths.

6	New File Filter	×
File filter		
Creates a new	file filter	
Name:	log4j.xml	
Root Directory:	server/\${jboss_config}/conf	Browse
Includes:	jboss-log4j.xml	
Excludes:		
Preview		
📄 jboss-log4j	.xml	
?	Cancel	ок

Figure 3.7. New File Filter Wizard

Notice, that the *Browse* button still returns an absolute path:

6	New File Filter		
File filter			
Creates a new	file filter		
Name:	deploy		
Root Directory:	server/default/ Browse		
Includes:	conf/*.xml		
Excludes:			
Preview			
📄 conf/jboss-	log4j.xml		
📄 conf/standardjbosscmp-jdbc.xml			
📄 conf/jbossj	ta-properties.xml		
📄 conf/jboss-	minimal.xml		
📄 conf/jboss-	service.xml		
📄 conf/login-	config.xml		
📄 conf/stand	📄 conf/standardjboss.xml		
۲			
U	Cancel OK		

Figure 3.8. New File Filter Wizard

After the filter is created, you can observe it by expanding the *Filesets* category in the JBoss Server View.

It's possible now to edit files directly from the *Filesets* category. Double clicking on a file from *Filesets* opens up the editor automatically or you can use the *Edit File* context menu command.

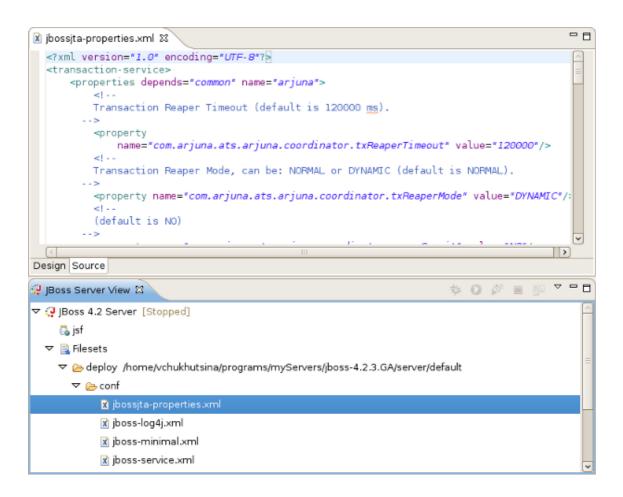


Figure 3.9. Direct Editing from the Filesets

To delete a file filter (or just a file) from the *Filesets,* right-click a file filter (or the unnecessary file) and select the *Delete File Filter* (*Delete File*) command.

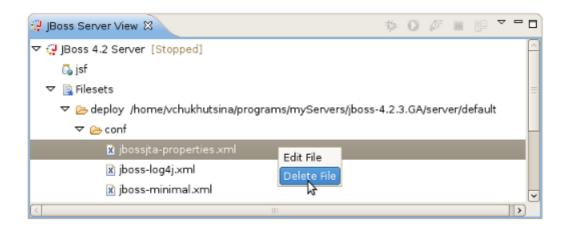


Figure 3.10. Deleting the File from the Filesets

If you want to set filesets for some server types, you should open *Window>Preferences* and then select *Server > Default Filesets* from the categories available on the left.

E		Preferences	×
ty	pe filter text	Default Filesets	⇔ • ⇔∽ •
Þ	General		
Þ	Agent Controll	This page will allow you to designate some default filesets to add to new	servers.
Þ	Ant	All server types	
Þ	Data Manager		Add Fileset
	FreeMarker Ed		Remove Fileset
⊳	Help		
	HQL editor		
Þ	Install/Update		
Þ	Java		
	Java EE		
⊳	JBoss jBPM		
⊳	JBoss Tools		
⊳	Plug-in Develo		
⊳	Profiling and Lo		
	Project Archive		
⊳	Report Design		
Þ	Run/Debug		
~	Server		
	Audio		
	Default Files		
	Launching		
	Profilers		
	Runtime En		
	SWTBot Prefer		
Þ	Team		
Þ	Test		
<		Restore <u>D</u> efaults	Apply
	?	Cancel	ок
		Cancel	UK

Figure 3.11. Deleting the File from the Filesets

On this preference page you can add a fileset to any server type or to all servers at once. To do this you should select the server type in the combo box and click *Add fileset...* button. In the opened New File Filter wizard follow the steps described <u>before</u> [23] and finally click *Apply* button on the preference page.

The defined file filter will be automatically added to new servers during creation.

3.1.2.2. XML Configuration

The *XML Configuration* category allows you to quickly browse to descriptor files in your server's deploy directory and check or change the values. Basically, *XML Configuration* includes XML XPaths where an xpath is a path used to access some specific part of an xml document.



Note:

You are assumed to be familiar with XPath. If not, we highly suggested that you look through an appropriate manual or tutorial on the topic.

The *XML Configuration* category itself contains only a list of categories. *Ports* are provided by default and is filled with many of the most commonly used ports in the JBoss Server.

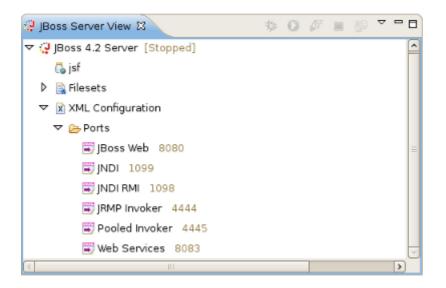


Figure 3.12. XML Configuration

By right-clicking on *XML Configuration*, you can create a new category. Besides, context menu for *XML Configuration* category makes possible to disable it. You can disable any category in the bottom part of the *JBoss Server View*. Look for them in the *Inactive Categories* afterwards to re-enable.

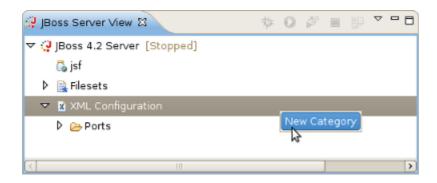


Figure 3.13. Adding New Category

By right-clicking on *Ports* or any other category in *XML Configuration*, you can create a new xpath.

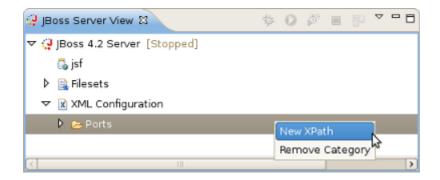


Figure 3.14. Adding New XPath

After that, the dialog shown below will appear.

New XPath X			
An XPath is a way to find a specific XML element inside an xml file. This dialog will help you create one. These XPaths' values can then be modified by using the JBoss Servers View with the Properties View.			
Name:	test		
XPath Pattern:			
Attribute Name:			
Location	Value		
	OK Cancel Preview		

Figure 3.15. Adding New XPath

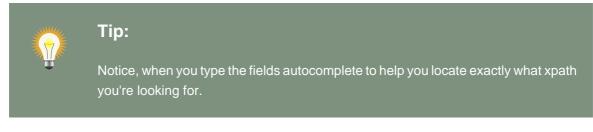
The goal here is to get an end result where the XPath matches up with a necessary property. With that in mind, let's look how it works. If the property you want to reach is the value of the *name* attribute in the element <mbean>, then your *XPath Patten* should end with *mbean* and your *Attribute Name* should be *name* like on the next figure.



Inline</th <th>e XMBean Descriptor BEGIN></th>	e XMBean Descriptor BEGIN>
<xmbe< td=""><td>ean></td></xmbe<>	ean>
<de:< td=""><td>scription></td></de:<>	scription>
	The EJBDeployer responsible for ejb jar deployment
<td>ean></td>	ean>
<td>></td>	>

New XPath			
An XPath is a way to find a specific XML element inside an xml file. This dialog will help you create one. These XPaths' values can then be modified by using the JBoss Servers View with the Properties View.			
Name:	test		
XPath Pattern:	server/		
Attribute Name:	server/classpath		
Location	server/loader-repository		
	server/mbean		
	1		

Figure 3.16. XPath Preview



Then, on the other hand, if your desired field is the text of an element <description>, your XPath Patten should end with description and Attribute Name field should be left blank. When finished, click Preview to see how many matches you have for that particular XPath.

۹	N	ew XPath	×
An XPath is a way to find a specific XML element inside an xml file. This dialog will help you create one. These XPaths' values can then be modified by using the JBoss Servers View with the Properties View.			
Name:	test		
XPath Pattern:	server/mbean[@name='jboss.ejb:service=EJBDeployer']/xmbean/description		0
Attribute Name:			
Location		Value	
/deploy/ejb-deployer.xml		The EJBDeployer responsible for ejb jar deploymen	t
/tmp/deploy/tmp34942ejb-deployer.xml		The EJBDeployer responsible for ejb jar deploymen	it
		OK Cancel Preview	כ

Figure 3.17. XPath Preview

3.1.3. Drag-n-Drop to JBoss Server View

Starting from 2.0.0.CR2 version of JBoss AS Tools the JBoss Server View supports drag-n-drop of deployable and runnable projects/resources.

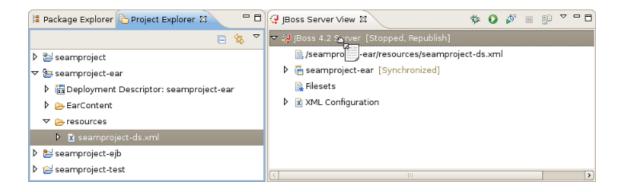


Figure 3.18. Dragging to the JBoss Server View

With drag-n-drop the following actions can be performed:

- dragging a project to a server will deploy it to the server and run it by showing the main page in a browser
- dragging an *.xhtml* file from *WebContent* will do the same and show the corresponding page in a browser

• dragging a deployable resource (i.e. a datasource (-ds.xml) file that has been made deployable) will simply deploy that resource directly to the server

In short, the feature does the same thing as if you used the *Run On Server* option or *Add and Remove Projects* option in the context menu of the server.

3.1.4. Server Log View

You can monitor the current server behavior with the help of the Server Log. To open a server in the Server Log view you should right-click on the server and follow to *Open in > Server Log*.

The *Server Log* shows relevant information to your server's startup, shutdown, and publish processes. This allows you to keep an eye on what's going on (such as automatic incremental deployment if you have it enabled).

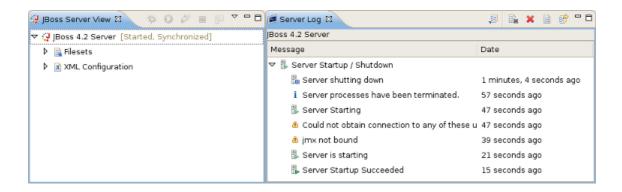


Figure 3.19. Event Log Actions

The Server Log toolbar contains several icons that perform the following actions:

Table 3.3. Server Log Toolbar Icons

Name	Description	
Export Log	Possibility to export the log into a text file	
Clear Log Viewer	The option clears the current server log	
Delete Log	Click to delete the server log	
Open Log	Click to open the server log text file	
Restore Log	Click to restore the server log	

3.1.5. Server Editor

By double-clicking on any server, an editor window will appear allowing you to edit parts of that server.

🕌 JBoss 4.2 Runtime Server 🕴 🗖			
🗄 Overview			
General Information Specify the host name and other common settings. Server name: JBoss 4.2 Runtime Server Host name: localhost	 Publishing Modify settings for publishing. Never publish automatically Automatically publish when resources change 		
Runtime Environment: JBoss 4.2 Runtime 😂	Publishing interval (in seconds):		
 ✓ Login Credentials Set the login and password for your server. This will ensure it starts and stops properly. User Name admin Password admin 	✓ Server Polling Startup Poller JMX Poller Shutdown Poller Process Terminated Poller Shutdown Poller Process Terminated Poller ✓ Server Ports The ports entered here are which ports the tools will poll the server on. Changing these fields will not change the ports the server itself listens on. JNDI Port 1099 Automatically detect <u>Configure</u> Web Port 8080 Automatically detect <u>Configure</u>		
Overview Deployment			

Figure 3.20. Preferences Page for the Chosen Server



Under the *Publishing* section it' possible to disable/inable the automatic publishing of the changes in the workspace.

It should be pointed out that our server adapter by default tries to automatically detect the ports it needs for integrating with a JBoss Server. Sometimes it can though be relevant to override this automatic detection if you are using some custom configuration. For this purposes the *Server Ports* section in the Server editor is provided where the port settings are configurable. Click the *Configure...* link to bring up the wizard for adjusting the settings for the ports.

逞 JBoss 4.2 Runtime Serv	ver X	- B
Overview		
General Information Specify the host name and other common settings.		Publishing
Server name:	JBoss 4.2 Runtime Server	Timeouts
Host name:	localhost	- Server Polling
Runtime Environment	JBoss 4.2 Runtime	Startup Poller JMX Poller
Open launch configuration		Shutdown Poller Process Terminated Poller
- Login Credentials		- Server Ports
Set the login and password for your server. This will ensure it starts and stops properly. User Name admin		The ports entered here are which ports the tools will poll the server on. Changing these fields will not change the ports the server itself listens on.
Password admin		INDI Port 1099 I Automatically detect <u>Configure</u>
	G	Web Port 8080 Automatically detect <u>Configure</u>
	Web Port	
		o edit which xpath is used to locate a port used by the tooling. / server files, only what ports are used to interact with it.
Overview Deployment	Ports/JRMP Invoker	Current Value
	Ports/Pooled invoker	8080 Edit XPath
	Ports/JBoss Web	
	Ports/JNDI RMI	
	Ports/JNDI	
	Ports/Web Services	
	?	Cancel Restore Default OK

Figure 3.21. Server Ports Preferences

Press *Edit XPath* button for the chosen port to configure its XPath's values.

6	New XPath
This dialog will hel	to find a specific XML element inside an xml file. p you create one. These XPaths' values can then be modified s Servers View with the Properties View.
Name:	JNDI
XPath Pattern:	//server/mbean[@name='jboss:service=Naming']/attribute[@name='Port']
Attribute Name:	
Location	Value
	OK Cancel Preview

Figure 3.22. XPath Pattern for a Server Port

In the Server editor you are able to edit the timeouts and the server pollers to use.



Note:

By default, the Startup poller is set to JMX Poller (see the *Server Polling* section). If you change the Startup poller to Timeout Poller (it may need in case, for example, you're using the minimal configuration for your server), this will do no polling at all and will only set the server state to *"Started"* after your startup timeout is reached.

Server editor makes it also possible to modify the server's launch configuration. It's just after clicking *Open launch configuration* link. In the open window there are the tabs for setting command line arguments, main, classpaths and other things that are relevant to launching the server.

lit launch confi	
والمستحية والمتعاد	guration properties
elow is the launch	n configuration properties for starting JBoss Servers
lame: JBoss 4.2	Server
🕬 - Arguments	Θ Main) 🍫 Classpath) 🦆 Source) 🏧 Environment) 💷 <u>C</u> ommon)
Program <u>a</u> rgume	
configuration=	default -b localhost
	Variables
	(allores)
VM arguments:-	
	ne="JBossTools: JBoss 4.2 Runtime" -Xms256m -Xmx512m -XX:MaxPermSize=256m -
	Variables
are din a din atau	
Working director	
O Defa <u>u</u> lt:	/home/ubuntu
Other:	/opt/jboss-4.2.2.GA/bin
	Workspace <u>Fi</u> le System Variabl <u>e</u> s
	Apply Reyert
?	Cancel OK

Figure 3.23. Launch Configuration Properties

The first tab shows the Jboss server arguments

Look up <u>AS Installation Guide</u> [http://docs.jboss.org/jbossas/guides/installguide/r1/en/html/startstop.html] to find parameters which can be specified for JBoss Server.

Note:

Please note, that the Launch Configurations for JBoss Servers are enough strict in enforcing the configured values in the server in order to avoid inconsistencies between server's and their configured runtime.

For example, if you change the launch configuration program arguments to "*c myConfig*" but do not change the targeted runtime configuration, then your program arguments will be ignored. The server runtime "wins" so to speak. This ensures consistency and if you change the location of the runtime, your launch configurations will automatically pick that up.

Values are not controlled by the server and its runtime setup will be passed on unaltered.

On the second tab you find the main class used for launching JBoss AS (default is org.jboss.Main), you can change it, if necessary.

Until 3.0.0.GA release of JBoss Tools, the servers classpath was readonly, but that caused problems for users wanting to add their own jars in the startup classpath. That is relevant if you need to patch the server, add a custom charset or other tweaks that require early access to the classpath.

Now all servers have a custom 'server runtime classpath container', which is there by default and point to the default jars in JBoss. You can now adjust the classpath. Then just make sure this container is there if you want the classpath to be picked up.

Edit Configuration	×
Edit launch configuration properties Below is the launch configuration properties for starting JBoss Servers	
Name: JBoss 4.2 Server	
V 🍫 Bootstrap Entries	Up
➡ JRE System Library [java-1.5.0-sun-1.5.0.16]	Down
✓ ⁴ User Entries	
org.jboss.ide.eclipse.as.core.server.launch.runJarContainer/jBoss 4.2 Server	Remove
	Add Project <u>s</u>
	Add JARs
	Add External JARs
	Advanced
	Edjt
	Restore Default Entries
Ар	ply Reyert
?	ancel OK

Figure 3.24. Server Classpaths

If for some reason you have a launch configuration without this container, *Restore Default Entries* should add it properly. Also, *Restore Default Entries* will also remove any extra entries you added yourself.

3.1.6. Relevant Resources Links

Find more about XPath in the XPath Documentation [http://www.w3.org/TR/xpath20/].

3.2. Project Archives View

Every application, whether Plain Old Java, J2EE, or some other language altogether, needs to be packaged in some way. In Java-related projects, many people use ANT.

Note:

1

Those who use ANT will appreciate how the Project Archives Ant task is now improved: it supports variables and gives more informative error/logging messages when something goes wrong.

But JBoss Tools come with our own Archives tool with a bit easier and less-verbose XML and a handy user interface. The Project Archives plugin consists primarily of a view, that is Project Archives view, to set up each packaging configuration.

So far, let's look through all functionality that the Project Archives view provides.

3.2.1. Overview

The packaging configuration for each project is stored in the project's root folder, and is in a file named *.packages*, which has a fairly simple XML structure. Modifying the file by hand is neither required nor recommended, and using the UI is the official way of modifying your packaging structure.



Figure 3.25. Archives View

A project's configuration contains archives. As you can see on the image above a project can contain more than one archive. Internal archives and filesets can be directly inside of an archive, or in some sub-folder of that archive.

In the upper right corner of the view you can see an icon which, when clicked, will build the selected top-level archive. Additionally, you can select *Project > Build Packages* when a project is selected in the Packages View to build all declared packages in that project's *.packages* file. This will execute a full build on all declared archives.

3.2.2. Creating an Archive

When you open the Project archives view for the first time, it asks you to select the project for what you want to create an archive.

8	Problems	🙆 Tasks	🛞 Seam Con	np 🚱 J	Boss Serve	🗇 Project	archi	E	-	٥
							Ξ	骛.	ā	~
	Please se	lect a proj	ect							

Figure 3.26. Archives View

When creating a new archive for selected project, you have some different options at your disposal. You need right-click inside the view and select *New Archive* to see your archive type options.

🖹 Problems	🕗 Tasks	🛞 Seam Component	s 😳 JBoss 🤅	Server View	C Project archives	Ø		-	• 🗆
						e	\$₽	6	~
👂 🚖 seam		New Archive >	TAR 1						
		🖟 Build Project (Full)	S WAR						
			诸 EJB JAR						
			🔁 EAR						

Figure 3.27. Create an Archive

Note:

If you see only JAR from the list of available archive types, you should verify whether AS Tools plugins/features are in place. EAR, EJB JAR and WAR options are contributed by the AS Tools independently from webtools and the virtual project model. Thus, without them only JAR will show up.

JAR is the standard archive type, and does very little configuration, leaving most of the work up to you. You can customize the name, add folders, filesets, and inner jars to it.

The other types, for the most part, simply start off with a default setting, usually the jar with some specific children based on an expected structure of the project. For example, if the project is a Dynamic Web Project, and you create a WAR archive, the archive will be created with a few filesets relevant to the known structure of the project.

Here is the first page of all New archive wizards. It is the same for any archive type and the only page in the New Jar wizard.

S New WAR	X
Create a new archive	
Archive information	
Archive name: 📋 seam.war	
Destination: 🗁 /seam	
	ystem
Archive type	
Standard archive using zip compression	
 Exploded archive resulting in a folder (no compression) 	
(?) < Back Next > Finish	Cancel

Figure 3.28. New WAR Wizard

The page is pretty simple. First it asks to set the name of your new archive and a destination.

The destination of an archive can be anywhere on the file system, anywhere in the workspace, inside some other archive, or inside a folder declared inside an archive. Select the necessary checkbox (either *workspace* or *file system*) for marking the destination as related to either workspace or file system. You can browse to workspace or filesystem destinations by clicking on their respective buttons. To select a destination inside some other archive, you'll need to press the *Workspace* button. At the bottom of the list, you'll see archives that have been declared in the workspace.

C	Select a destination
[▼ 🗁 seam
	 Seattings
	GewebContent
	> Solution
	➢ resources
	> lesources
	▷ 🗁 src
	✓ [®] seam.war
	VEB-INF
	Seam-test
	⑦ OK Cancel

Figure 3.29. Selecting the destination in the workspace

Also in the wizard for creating a new archive you can choose whether an archive to be compressed or exploded into a folder (without compression). You need just select proper chechbox in the *Archive type* section.

If a build or incremental update fails Project Archives will show an error dialog:

Error building project archives	s X
Error building project archives no Reason: Error building project archives	ode null
🗆 Do not show this message again.	
Details >>	ок

Figure 3.30. Selecting the destination in the workspace

Click in *Details* to see detailed information about what caused the error.

In the Package Explorer you can observe the created archive.

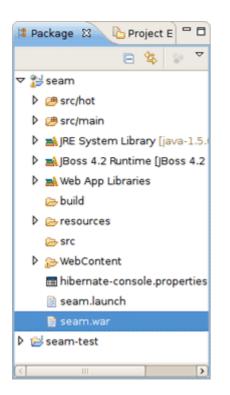


Figure 3.31. The Archive in the Package Explorer

If you use the exploded type of archiving, instead of a single file archive the result put into a folder is displayed in the Package Explorer.

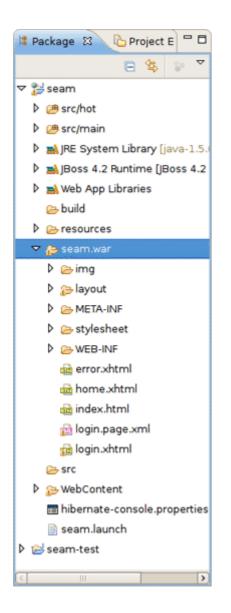


Figure 3.32. The Exploded Archive in the Package Explorer

3.2.2.1. Creating a Folder

Creating a folder is much easier. You simply right-click on an archive or folder you want your new folder to be a child under. The only piece of required information is naming the file.

3.2.2.2. Creating a FileSet

To create a new fileset, you click on an available target location such as an archive, a nested archive, or a folder within an archive, and select *New Fileset.*

The New Fileset wizard requires a destination (where the files will go), and a root directory (or where the files are coming from). The source can be anywhere in the workspace or from the filesystem at large.

Fileset Wizard
New Fileset
Create a new fileset consisting of one or more files
Fileset information
Destination: 🔂 seam.war Workspace
Root directory: 🗁
Relative to workspace file system Variables Workspace Filesystem
Flatten? O Yes No
\$∲ Includes: **/*.xhtml
Strate St
Preview
WebContent/error.xhtml
WebContent/home.xhtml
WebContent/layout/display.xhtml
WebContent/layout/edit.xhtml
WebContent/layout/loginout.xhtml
WebContent/layout/menu.xhtml
WebContent/layout/template.xhtml
② Einish Cancel

Figure 3.33. Adding a New FileSet

Below that, the fileset requires only an includes pattern and an excludes pattern. As you type in either of these fields, the preview viewer should update itself with which files are matched.

You can create a Fileset with flattening or without it. Look at the difference on the figure below.

	Fileset Wizard
New Fileset	
Create a new fileset consisting o	of one or more files
Fileset information	
Destination: 🐻 seam.war	Workspace
Root directory: 🗁	
Relative to 🔍 v Flatten? 💿 Yes 🔿 No	workspace 🔿 file system Variables Workspace Filesystem
Includes: **/*.xhtml	
35 Excludes:	Fileset Wizard 🗙
	New Fileset
Preview error.xhtml	Create a new fileset consisting of one or more files
home.xhtml	Fileset information
isplay.xhtml	Destination: 🔂 seam.war
📄 edit.xhtml	
📄 loginout.xhtml	Root directory: 🗁
📄 menu.xhtml	Relative to workspace file system Variables Workspace Filesystem
🗎 template.xhtml	Flatten? O Yes No
	په Excludes:
	Preview
0	WebContent/error.xhtml
	WebContent/home.xhtml
	WebContent/layout/display.xhtml
	B WebContent/layout/edit.xhtml
	WebContent/layout/loginout.xhtml
	WebContent/layout/menu.xhtml
	WebContent/layout/template.xhtml
	⑦ Einish Cancel

Figure 3.34. The FileSet with flattening and without it

3.2.2.3. Creating User Library FileSet

If you use user libraries in your projects you can also refer to these from project archives and have all the .jar/.zip files they refer included into the archive.

To add a new user libraries file set, call the right-click menu on the necessary archive and choose " New User Libraries FileSet" item

🖹 Problems 🧟 Tasks	🛞 Seam Components 🕯	🚆 JBoss Server View	ි Project archives ස			. 🗆
				B	۵,	Δ
🗢 🗁 jsf						
🗋 jsf.jar [/jsf]						
	New Archive	>				
	🗁 New Folder					
	🗟 New Fileset					
	📫 New User Library File	eset				
	🔂 Build Archive (Full)					
	Edit Archive					
	🗙 Delete Archive					
	💫 Publish To Server					
	🔷 Edit publish settings					

Figure 3.35. Adding New User Library Fileset

You can edit the existing user libraries as well using "User Libraries Fileset Wizard". Call the rightclick menu on the library fileset and choose "Edit Fileset " item

🕼 User Library Fileset Wizard 🗙
Edit User Library Fileset
Edit an existing User Library fileset
🗢 🛁 RichFaces
🧰 antlr-runtime.jar - seam/WebContent/WEB-INF/lib
🔤 richfaces-api.jar - seam/WebContent/WEB-INF/lib
🔤 richfaces-impl.jar - seam/WebContent/WEB-INF/lib
🔤 richfaces-ui.jar - seam/WebContent/WEB-INF/lib
Cancel <u>E</u> inish
·

Figure 3.36. Editing User Library Fileset

3.2.3. Archive Actions

🐮 Problems 📢	JBoss Server View (Depreca	ted) 🧟 Tasks	📑 Project archive	s 23	- 6
⊽ 🚖 JSFDemo				8	₫ ▼
▼ 🧟 JSFDer	🕞 New Folder	est/*] : /JSFDer	no/WebContent		

Figure 3.37. Context Menu on the Item

The context menu on the items in the view is extendable, but there are several that come standard.

Table 3.4. Context Menu on the Item

Name	Description
Build Archive (Full)	The action enabled only on top-level archives, which initiates a full build on that archive
Edit Archive	Standard action that brings up the wizard associated with that particular node type and allows the details to be changed
Delete Archive	Deleting node is standard action with deletion not needing an explanation
Publish To Server	The action means the ability to publish to a declared server
Edit publish settings	Gives possibility to edit an archive publish settings



Note:

When editing an archive, it is also updated in all folders and other archives where it is nested.

3.2.4. Publishing to Server

Finally, you'll need to publish your application to a server. Here, we show you how to do it with the help of *Archives View*.

C.	Archive Publish Settings
Publish a	rchive to a server
Select the	server to publish the archive to.
	🖓 JBoss 4.2 Server
	Always publish to these servers
	Auto-deploy to selected servers after builds
	Auto-deploy to selected servers alter builds
0	<u>F</u> inish Cancel

Figure 3.38. Context Menu on the Item

The dialog above appears after selecting *Publish To Server*. To simply publish once, you just select the server(s) that you want, and finish. If you want the *Publish to Server* action on that particular Archive to publish always to that set of servers, then check the appropriate checkbox. And finally, to enable automatic publishing upon build events, check the last checkbox.

The automatic publishing feature is nice if, for example, your package's destination (where it is built) is a temporary folder and you want the archive published to several servers. If you only really want your archive published to one server, it might be easier to have the archive's destination folder be the deploy folder of the server.

3.2.5. Relevant Resources Links

Refer to <u>Ant manual</u> [http://ant.apache.org/manual/index.html] to find more on how to build your applications with help of Ant.

We also recommend you to watch the *movie* [http://docs.jboss.org/tools/movies/demos/archiving/ archiving.htm] which demonstrates a powerful archiving functionality in JBoss Tools.

At this point, you are guessed to be familiar with JBoss AS perspective and your next step now is to explore how to work with different kinds of projects.

Projects

The most popular of the projects we deal with are the J2EE ones, such as Dynamic Web Project, EJB Project, or EAR project. Web projects of JBoss Tools are Struts, JSF and Seam projects. All of them are called faceted projects. Thus, in this chapter we are going to tell you about facets the main benefit of which to provide proper structuring and packaging for any type of project.

4.1. Faceted Projects Overview

The idea behind faceted projects is that each project can accept units of functionality, or facets, which can be added or removed by the user. Most often, these facets either add to the project's classpath, enable a builder, or watch the project in some other fashion. Generally, every project concerned has at least one facet when it's created. As an example, a Web project has a WebDoclet facet, or an EJB Project has an EJB Module facet as prerequisites.

WTP projects have undergone some criticism as being *over-engineered* or too restrictive in their design. WTP projects are set up in a tree-relationship to each other, where one project can be a child of another. For example, an EAR project may have a Web Project child, an EJB project child, or other types.

However, the benefit of this is that the structure of your projects is then known, and packaging it up *should* be trivial. Apparently, if your project is non-standard, or you feel too confined by such rigid structural requirements, you can still choose to package your project using the <u>Archives plugin</u>.

4.2. Adding Facets to a Project

In this section we're going to consider the facets added by JBoss Tools and show how you can configure them in a project: add new ones or modify already existing configuration of the facets.

One way to configure the facets is doing it while organizing a new project. To demonstrate this let's create a new Dynamic Web Project by selecting *File > New > Other...* and then *Web > Dynamic Web Project*.

New	×
Select a wizard	
Create a Dynamic Web project	
<u>W</u> izards:	
type filter text	
v 🦢 seam	
Server	
Spring	
SQL Development	
User Assistance	
🗢 🗁 Web	
S CSS	=
🔀 Dynamic Web Project	
5 HTML	•
② < Back Next > Enish	Cancel

Figure 4.1. New Dynamic Web Project

Click *Next* and you will see Dynamic Web Project page like on the figure below.

The first page of most WTP projects allows you to target a specific runtime, representing a server's library location. It will also provide you the ability to add this project to an EAR project, and select a preselected default set of facets, called a configuration, rather than manually select each facet you might want.

Selecting the runtime, again, allows the project to install the proper classpaths to the project so it knows what code to compile against.

New I	Dynamic Web Project
ynamic Web Project	—
reate a standalone Dynamic Web project	or add it to a new or existing Enterprise
pplication.	
Project name: SomeWebProject	
Project contents:	
☑ Use <u>d</u> efault	
Directory: //home/ochikvina/java/eclipse-to	ools/eclipse/workspace3/SomeWebProject Browse
Farget Runtime	
JBoss 4.2 Runtime	\$) [N <u>e</u> w
Dynamic Web Module version	
2.5	0
Configuration	
Default Configuration for JBoss 4.2 Runtin	ne 🗘 Modify
A good starting point for working with JBos installed to add new functionality to the pr	es 4.2 Runtime runtime. Additional facets can later be
EAR Membership	
Add project to an EAR	
EAR Project Name: EAR	V New.
0	< Back Next > Finish Cancel

Figure 4.2. New Dynamic Web Project

Click on the *Modify* button next to Configuration section in order to open the wizard which allows you to modify a chosen configuration. The wizard looks as follows.

E		Project Facets	×
Project Facets Select the facets	that should be enabl	ed for this project.	
Configurations:	Default Configuration	for JBoss 4.2 Runtime	Save As
Project Facet		Version	Details Runtimes
 Axis2 We Axis2 We Dynamic Java Java Java Pers JavaScrip JavaScrip JavaServ JBoss ES 	: Web Module sistence ot Toolkit rer Faces 18	2.5 5.0 1.0 1.0 1.2 4.3	 Seam 1.2 Enables the project to work with JBoss Seam Requires all of the following facets: Dynamic Web Module 2.5 or newer Java 5.0 Java Server Faces 1.2 or newer
 JBoss Po JBoss We Seam 	b Services	1.2	
WebDocl € €	et (XDoclet)	1.2.3	> Concel

Figure 4.3. Project Facets Wizard

Here part of the listed facets are those which are provided by WTP. Some of them are added by JBoss Tools. They are:

- BIRT Charting Runtime Component
- BIRT Reporting Runtime Component
- JBoss ESB
- JBoss Portlets
- JBoss Web Services
- Seam

On this wizard page you can enable or disable any facet as well as change it version. What you should note here is that some facets or facets versions may conflict with each other. In case of incompatibility you'll be prompted about this in the combo box underneath.

E	Project Facets	×
Project Facets Select the facets that should be enabl	ed for this project.	
Configurations: <a>custom>		Save As Delete
Project Facet	Version	Details Runtimes
Axis2 Web Services		🛿 Java 1.4
🗹 👼 Dynamic Web Module	2.5	Adds support for writing applications using
🗹 🔊 Java	1.4 🗸	Java programming language.
Ava Persistence	1.4	
 JavaScript Toolkit JavaServer Faces 	5.0	=
Boss ESB	6.0	
Image: Second		
IBoss Web Services		
🗹 📄 Seam	1.2	
🗌 📄 WebDoclet (XDoclet)	1.2.3	
)	
Dynamic Web Module 2.5 requires Ja		
Onstraints for Seam 1.2 have not	been met.	
0		OK Cancel

Figure 4.4. Facet Constraints

When switching on the *Runtimes* tab on the right you'll see the current server Runtime.

6	Project Facets	×
Project Facets Select the facets that should be enabled for t	this project.	
Configurations: Default Configuration for JBo	ss 4.2 Runtime	Save As Delete
Project Facet	Version	Details Runtimes
 Axis2 Web Services Dynamic Web Module Dynamic Web Module Java Java Persistence JavaScript Toolkit JavaServer Faces JBoss ESB JBoss Portlets JBoss Web Services Seam 	2.5 5.0 1.0 1.2 4.3	JBoss 4.2 Runtime
WebDoclet (XDoclet)	1.2.3	Show all runtimes Make Primary New Runtime Composition: <no runtime="" selected=""> OK Cancel</no>

Figure 4.5. Runtimes on the Project Facets Wizard

On this tab you can also create a new Server Runtime and make it primary by pressing *Make Primary* button after enabling it.

Clicking on *OK* will save the chosen configuration of the facets and return you to the *Dynamic Web Project wizard*. Further pages in the wizard are specific to either the project type or the facets selected.

If you need to configure the facets for the existing project, you should bring up the context menu for selected project and click *Properties* and then *Project Facets*. This will bring up the familiar *Project Facets wizard*, where you can create your own custom facets configuration.

4.3. Relevant Resources Links

More on the WTP facets you can read in the <u>eclipse help</u> [http://help.eclipse.org/ganymede/ index.jsp?topic=/org.eclipse.jst.j2ee.doc.user/topics/cfacets.html].

Deploying Modules

In this chapter it will be described how to deploy modules onto the server.

First of all it is necessary to say that deploying to a server is mostly painless. There are several ways to do it provided by WTP, and some additional methods provided by JBoss Tools. These methods are described further in this chapter.

5.1. Deploying on the Package Explorer

On the package explorer it is possible to publish either a project to a server or just a single file. Let's look at how to do this.

5.1.1. Deploying with Run On Server Wizard

The first WTP method is to right-click on a project, such as a Dynamic Web project, EJB project, or EAR project and then select Run As > Run on Server. The resulting dialog allows you to select which supporting server the project can be published to.

🛢 Run On Server 🗙
Define a New Server
Choose the type of server to create
How do you want to select the server?
Ochoose an existing server
 Manually define a new server
Select the server that you want to use:
type filter text
▽ 🗁 localhost
😲 JBoss Application Server 4.2
JBoss Application Server 4.2
Always use this sequer when rupping this project
Always use this server when running this project
(7) < Back Next > Finish Cancel

Figure 5.1. Define a New Server

Click *Next* button to see add or remove projects page where you can choose projects to configure them on server.

0	Run On Server	×
Add and Remove Projects Modify the projects that are configured on the server		
Move projects to the right to o	configure them on the	e server
<u>Available</u> projects:		Configured projects:
 /crudapp/resources/c /SeamProject/resourc jsfHello/jsfHello.war jsfHello/jsfHello.war 	A <u>d</u> d > < <u>B</u> emove	🚡 SomeWebProject
(■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■	<< Remove All	<u>F</u> inish Cancel

Figure 5.2. Add or Remove Projects

This page of the wizard also allows to undeploy modules from the server. For that choose proper module(s) from the right and click < *Remove*. The modules will be completely undeployed after restarting your server or republishing.

Generally, for the JBoss AS Server Adapters, publishing using this method will force a default, best-guess, packaging configuration for your project. This best-guess does not publish incrementally, but instead repackages your entire project into a *.war*, *.jar*, or *.ear* as appropriate, and then copies that file into the proper deploy directory. For quicker smarter deployment, you will need to create archives using the *Project Archives view* and customize packaging yourself.

5.1.2. Deploying single files

Sometimes it becomes necessary to deploy one or more files to a server. For that in order not to do a full republish in the context menu of files a *Deploy To Server* option is provided that allows a single file deployment. To deploy these non-WTP files/projects right click on the file (*-ds.xml*, *.ear*, *.jar* etc.) and select *Deploy To Server* and it will be automatically deployed.

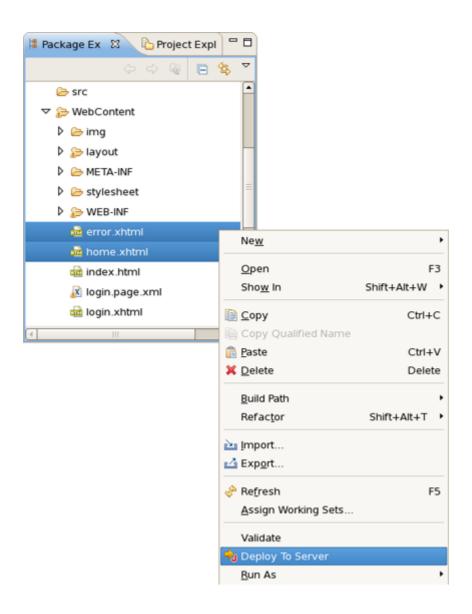


Figure 5.3. Deploy to Sever

The deployed files are listed side-by-side with other modules that are deployed to the server.

Add and Remove Projects		
Add and Remove Proje Modify the projects that are	ects e configured on the server	
Move projects to the right t	o configure them on the se	rver
<u>Available projects:</u>		Configured projects:
	Add >	 /seam/WebContent/error.xt /seam/WebContent/home.x seam SomeWebProject
	Add Aji >>	
	<< Remove All	
٢	< Back Next >	<u>Finish</u> Cancel

Figure 5.4. Deployed files on the Server

5.2. Deploying with JBoss Server View

As it has been already mentioned JBoss Server View contains two parts: the top part that displays all defined servers and the bottom part which provides categories with additional information. Thus, in this section we suggest two more ways to deploy resources onto the server.

5.2.1. Top part of JBoss Server View

In the top part of the JBoss Servers View like in the Servers View you should right click on a server and select the *Add and Remove Projects* menu item.

▶ Filesets Open F3 ▶ XML Configuration Shift+Alt+W □ Copy Ctrl+U □ Paste Ctrl+V X Delete Delete Regame F2 Image: Stop Publish Image: Stop Publish Image: Stop Explore	🤪 JBoss Server View 🛙	🂠 🔾 🖉 📕 🔛 🗸 🗖
 Bestart Restart in Profile Stop Publish Explore Add and Remove Projects Monitoring You You You You You You You You You You	🔒 Filesets	New > Open F3 Show In Shift+Alt+W > Copy Ctrl+C Paste Ctrl+V Delete Delete
Monitoring 🗟 刘		 Bestart Restart in Profile Stop Publish Explore
		N

Figure 5.5. Add and Remove Projects

This will bring up a *familiar dialog* allowing you to either publish projects or modules to a server, or remove them from the server. If the selected module is a project like a Dynamic Web project, EJB project, or EAR project, it will be published as through *Run on Server* wizard, with a best-guess full package. If, however, the selected element is an archive from the *Project Archives view*, it will be published according to the rules of that module type.

5.2.2. Bottom part of JBoss Server View

In the bottom part of *JBoss Server View* there is a category called *Modules* which should display all currently-published modules on the server. Right-clicking on the desired module and selecting *Full Publish* will force a full rebuild of the entire module.

🤪 JBoss Server View 🛿		参	0	Ď	ĒÐ	▽	- 8
マ 🤪 JBoss 4.2 Server [Starte	ed, Synchronized]						
👼 jsf [Synchronized]	Ne <u>w</u>						
XML Configuration	O Start						
	Stop Restart						
	Remove						
	👈 Incremental Publish						
	Pull Publish Contraction State						

Figure 5.6. Full Publish

Here, *Incremental Publish* is meant to enable publishing of only those parts where changes have been made.

5.3. Deploying with Project Archives View

In the Project Archives View you can right-click on any declared archive and select the *Publish To Server* element. For more on this subject, see *Publishing to Server* in the Project Archives View section.

ි Project archives 🛙				5	- 8
 ▼ SomeProject.jar ▼ lestFolder ☐ inner.jar □ patch: SomeProject 	New Archive New Folder New Fileset				
	Build Archive				
	裪 Publish To Server				

Figure 5.7. Publish to Server

The only way to ensure an *Incremental Build*, such as changes to one *.jsp, .html*, or *.class* file, is to enable the builder for that project. This is done by either changing the global preferences for the Archives View, or by enabling project-specific preferences and ensuring the builder is on.

You can also use the "Finger touch" button for a quick restart of the project without restarting the server:

Figure 5.8. Finger Touch button

The "Finger" touches descriptors dependent on project (i.e. web.xml for WAR, application.xml for EAR, jboss-esb.xml in ESB projects).

The last chapter covers a variety of methods on how you can deploy needed modules onto a server.

TPTP Support

This chapter provides an overview on how to enable TPTP Profiling for JBoss AS adapters in JBoss Tools.

6.1. TPTP Profiling

To get TPTP profiling work on JBoss Application Server you should first download <u>TPTP</u> <u>4.5.0 Runtime</u> [http://www.eclipse.org/downloads/download.php?file=/tptp/4.5.0/TPTP-4.5.0/ tptp.runtime-TPTP-4.5.0.zip] and install it, i. e. just add the content of *plugins/features* folders from downloaded directory to the same folders in your eclipse installation directory.

And now all profile actions should work for you. To start JBoss AS in profiling mode use *Start the server in profiling mode* button or *Profile As > Profile on Server* option in the context menu of the project.

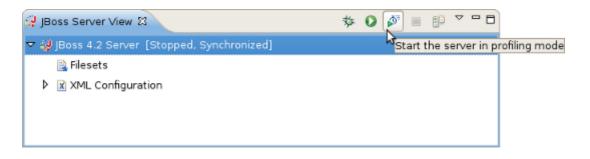


Figure 6.1. Start the Server in Profiling mode

To enable TPTP features in your workbench use Profiling and Logging Perspective that you can find in the list of proposed perspectives: *Window > Open Perspective > Other...*

Open Perspective	×
S Hibernate	
🎝 Java (default)	
😴 Java (defadit) 💱 Java Browsing	
👷 java El	
😼 Java EE 🚼 Java Type Hierarchy	
V JavaScript	=
JBoss AS	-
ibpm jpdl	
↔ JPA	
Plug-in Development	_
OPPORT OF CONTRACT OF CONTRACT. OF CONTRACT OF CONTRACT OF CONTRACT OF CONTRACT OF CONTRACT OF CONTRACT OF CONTRACT. OF CONTRACT OF CONTRACT. OF CONTRACT OF CONTRACT OF CONTRACT. OF CONTRACT OF CONTRACT OF CONTRACT. OF CO	
Resource	
🛞 Seam	~
	_
OK Cancel	

Figure 6.2. Profiling and Logging Perspective

6.2. Relevant Resources Links

All additional information on TPTP(Test and Performance Tools Platform) you can find in <u>eclipse documentation</u> [http://www.eclipse.org/tptp/home/downloads/4.5.0/documents/quicktour/ quick_tour.html].

In summary, this reference should help you to start with <u>JBoss AS</u> [http://www.jboss.org/jbossas] and get to know with functionality for work with it.