OpenShift Tools Reference Guide

Version: 3.3.0.GA

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Introduction

OpenShift is a cloud solution for your application server requirements. OpenShift is a cloud-based application platform for Java, Perl, PHP, Python, and Ruby applications. JBoss Developer Studio supports OpenShift deployments and this guide will show you how to connect, create and deploy applications with OpenShift, from your workbench.

Creating an OpenShift Application

The **OpenShift Application** creation wizard is accessed through **JBoss Central** or by navigating to **File** \rightarrow **New** \rightarrow **Other**.



Figure 2.1. Selecting the OpenShift Application wizard

After clicking on the **OpenShift Application** link, the creation wizard will launch.

Sign in to OpenShift Please provide your OpenShift credentials.	OPENSHIFT
If you do not have an account on OpenShift, please sign up <u>here</u> .	
Username username	
Password ••••••	
Save password (could trigger secure storage login)	
? < Back Next > Cancel	Finish

Figure 2.2. Input OpenShift credentials

If you have already signed up for an OpenShift account then you can input your **Username** and **Password** here and click the **Next** button. If validation is successful you will see the **Setup OpenShift Application** screen.

If you do not have an OpenShift account, you can create one through the link at the top of the wizard screen. This will open the OpenShift sign-up page within your workbench. Once you have created an account you will need to relaunch the **OpenShift Application** wizard and input your new username and password.

Domain Creation Select an alphanumerical name and a type for the domain to edit.		E
Domain name		OPENS
SSH Public Key	Browse	New
Please make sure that your private key for the public key	is listed in the <u>SSI</u>	H2 Prefere
?	Cancel	Finish

Figure 2.3. Creating a domain

If you need to create a domain, type the name you wish to have into the **Domain name** field. You will also need to provide your public SSH key. Ensure that the paired private key is listed within the SSH2 Preferences. If you are unsure, click the **SSH2 Preferences** link. Click **Finish** to complete domain creation.

If you already have a domain name then you will not see the **Domain Creation** screen.



Note

If you ever wish to rename your domain, this can be done through the **OpenShift Explorer**.



Use existing application: Browse
New application
Name: *
Туре: *
Gear profile: 🔅 🗆 Enable scaling
Embeddable Cartridges
mongodb-2.0
□ cron-1.4
mysql-5.1
postgresql-8.4
haproxy-1.4
10gen-mms-agent-0.1
D phpmyadmin-3.4
metrics-0.1
(?) < Back Next > Cancel Finish

Figure 2.4. Creating a new OpenShift application

Now ready to create your OpenShift application, you will need to specify a name, the platform type to deploy for, from the **Type** drop-down list, and the **Gear profile** to be used.

The **Gear profile** option concerns the amount of physical space that will be allocated for use by the application. If you are running a trial version of OpenShift only the **small Gear profile** will be available to you.



Note

No underscores or special characters are allowed in the application name.

You can also select to embed cartridges into your application. By embedding a cartridge, you allow your application the ability to use the associated technology. For example, embedding the **mysql** cartridge will grant your application the capability to use a MySQL database.

Setup Project for O Configure your projec then click 'next' or 'fir	penShift Applicat t and server adaptonish'.	t ion "jbossas" er settings,		
				OFENSHIFT
🗹 Create a new pro	oject			
	•			
Use existing projec	с			Browse
Server Adapter				
✓ Create and setu	p a server for easy	publishing		
	, ,			
Ø	< Back	Next >	Cancel	Finish

Figure 2.5. Application setup

Since you are creating a new project, leave the **Create a new project** checkbox ticked.

For easy interaction with the OpenShift server and your domain it is recommended that you leave the **Create and setup a server for easy publishing** checkbox ticked. Doing so will create an OpenShift server instance in the **Servers** view, upon completing the wizard.

Click the **Next** button to progress in the wizard.

Import an existing OpenShift application Configure the cloning settings by specifying the clone destination if you create a new project, and the git remote name if you're using an existing project.	OPENSHIFT
Cloning settings	

Location:	/home/irooskov/git	Browse			
☑ Use default remote name					
Remote name:	origin				

Make sure your SSH key used with the domain is listed in <u>SSH2 Preferences</u>.

?	< Back	Next >	Cancel	Finish

Figure 2.6. Cloning settings

The final screen of the **OpenShift application wizard** specifies **Cloning settings**. Here you can set the properties for creating a local copy of your application. The **Location** and **Remote name** options will be set automatically, however, you are able to change these by deselecting the default option and specifying custom settings in the fields provided.

Click the **Finish** to begin the cloning of the Git repository.



Figure 2.7. Project added to available Git repositories

After the Git repository has been cloned, it will be available through the **Git Repositories** view. You can open it by navigating to **Window** \rightarrow **Show View** \rightarrow **Other** \rightarrow **Git** \rightarrow **Git Repositories**. With the **Git Repositories** option selected, click **OK**.



Figure 2.8. Project in Project Explorer

The OpenShift application that you created through the wizard, will appear in your **Project Explorer** tab.

JBoss Quickstarts	Ne <u>w</u>		
	Show In	Shift+Alt+W 🕻	
- Documentation	Start		
New and Noteworthy User	Stop		
Reference Deve	Restart		
🕒 🕒 Getting Started 🎐 Software/	Remove	Delete	
🖳 Problems 🗖 Tasks 🕅 Seam C	Incremental Publish		
	Full Publish		
▽ 🕄 jbossas OpenShift Server [S	Properties	Alt+Enter	
👼 jbossas [Republish] 📃	Fropercies	Attrenter	
XML Configuration			
🗟 Filesets			

Figure 2.9. Publising your project through the server adapter

The wizard has also created a server adapter that connects to your OpenShift service. In the **Servers** tab there will be an OpenShift server available that contains your application. Any changes you make locally to the application can be published to your OpenShift instance by right-clicking on the application under the server in the **Servers** view, and selecting **Full Publish**.

	S jbos
	🗄 Ov
	Gene
	Spec
	Ser
	Hos
	Op
	- Op
	Dep
	Pro
	Use
	App
Problems Properties Rervers SO OpenShift Explorer	Ou
Spossas OpenShift Server [Started]	
DVVP_Test	Rer
XML Configuration	
📑 Filesets	
	Overvi

Figure 2.10. OpenShift server overview and settings

As with a local server, double-clicking on the OpenShift server instance in the **Servers** tab will open the server overview page in your workbench.

	Problems	Properties	붜 Servers	3 OpenShift Explor	er 🛛	
~	🗊 rhn-ecs	-irooskov				
	🔓 jboss	sas jbossas-7				

Figure 2.11. OpenShift Explorer view

The OpenShift application will also be available under your domain in the **OpenShift Explorer** view.

Import an existing application

To import an existing OpenShift application to your workbench, from **JBoss Central** navigate to the **Create Projects** section and click on **OpenShift Application**.



Figure 3.1. Selecting the OpenShift Application wizard

Enter your OpenShift credentials and click the **Next** button.

Sign in to OpenShift Please provide your OpenShift credentials.	OPENSHIFT
If you do not have an account on OpenShift, please sign up <u>here</u> .	
Username username	
Password ••••••	
Save password (could trigger secure storage login)	
? < Back Next > Cancel	Finish

Figure 3.2. Input OpenShift credentials

On the **Setup OpenShift Application** screen click the checkbox beside **Use existing application** and click the **Browse** button.



Figure 3.3. Setup OpenShift Application screen

A dialog will open where you will see all your OpenShift applications listed, for the current domain.

Select an application in the list					
			OPEN SHIFT		
Existing App	lications on Oper	nShift			
Name	Туре	URL	Details		
jbossas	jbossas-7	http://jbossas-irooskovdomain.rhcloud.com/			
jbossas2	jbossas-7	http://jbossas2-irooskovdomain.rhcloud.com/			
?		Cancel	ок		

Figure 3.4. Existing applications on OpenShift

By selecting an application from the list and clicking the **Details** button you can see all relevant application information. Click the **OK** to return to the application selection screen.

Details of Application jbossas2



Property	Value
Name	jbossas2
Public URL	http://jbossas2-irooskovdomain.rhcloud.com/
Туре	jbossas-7
Created on	2012/06/13 at 14:39:46
UUID	c3bddddc1c1d4ea6a94884b9cfdebf4f
Git URL	ssh://c3bddddc1c1d4ea6a94884b9cfdebf4f@jbossas2-iro
Cartridges	
<	
	ок

Figure 3.5. Details of OpenShift application

Select the application to import and click the **OK** button.

You will be returned to the **Setup OpenShift Application** screen and the **Use existing application** field will be populated with the name of the application you selected.



Figure 3.6. Setup OpenShift Application screen

To complete importing the application click the **Next** button and continue follow the instructions after the **Setup OpenShift Application** screen that are available in the *Creating an OpenShift Application* chapter: *Figure 2.6, "Cloning settings*".

Modifying your Maven Web Application to Deploy to OpenShift

Open the pom.xml file of your web application in the editor by double-clicking on the file in your **Project Explorer** and selecting the **pom.xml** tab in your workbench.

Create profiles tags within the project tags of the pom.xml file. Within the profiles tags, press **Ctrl** and Spacebar together to trigger auto-completion.

From the auto-completion menu, select **OpenShift profile**. The profile information to connect to OpenShift will be inserted.



Figure 4.1. Selecting the OpenShift Profile

Port Forwarding

Port forwarding is available for each OpenShift application. To access port forwarding for an application right-click on an application in the **OpenShift Explorer** view tab and select **Port forwarding** from the context menu.

🔎 Spring MVC Project	🛞 <u>GWT Web Project</u>	Framework The J a very strong focu		
- Project Examples	1= 🎶 🗄 🤣	development		
 JBoss Quickstarts 		▼ Blogs		
- Documentation		😋 <u>JBoss Tools an</u>		
<				
🕒 Getting Started 🎐 Soft	ware/Update			
🕄 Problems 🔲 Properties	🖧 Servers 🤂 OpenShift Ex	plorer 🛛		
▽ 🔋 rhn-ecs-irooskov				
🖙 jbossas jbossas-7				

Figure 5.1. Port forwarding option

The **Application port forward** dialog will display ports that can be forwarded. To forward all ports click the **Start All** and the **Stop All** button will stop port forwarding for all listed ports.

If you do not wish to use the remote port numbers selected by default, click the checkbox beside the **Find free ports for all Services** option.

The default local address is set to 127.0.0.1 and if the remote port is not available a random one will be generated. If your operating system supports it, you can uncheck **Use 127.0.0.1 as the local address for all services** and the local address will become the same as the remote address.

Application port forward

Please configure port forwarding for the 'jbossas' application



Service	Local Address	Local Port	Remote Addres	Remote Port	Status	Refresh
java	127.0.0.1	4447	127.8.190.1	4447	Stoppe	
java	127.0.0.1	8080	127.8.190.1	8080	Stoppe	Start All
Stopper						Stop All
☑ Use '127.0.0.1' as the local address for all Services						
Find free ports for all Services						

ΟК

Figure 5.2. Port forwarding dialog

Debugging

This chapter covers useful tools for debugging OpenShift servers and applications.

6.1. Viewing the Remote Console

Similar to when you are running a server locally, you are also able to see console output for your remote OpenShift server. To have this output displayed to you, right-click on your OpenShift application in the **OpenShift** view tab, and select **Tail files**.

Spring MVC Project 🛛 🕲 GWT	Web Browser	
	Tail files	
 Project Examples 	Port forwarding	
JBoss Quickstarts	Environment Variables	
	Edit Embedded Cartridges	
 Documentation 	Delete Application(s)	
Getting Started Software/Upda	Import Application	
🗟 Problems 💷 Properties 👫 Server-	Create a Server Adapter	
	Refresh	
Chibossas ibossas-7	Details	

Figure 6.1. Tailing OpenShift server files option

A new tab will open called **Console** and display the last 100 lines of the servers boot.log and server.log files. This **Console** tab will now tail the content of these files on the server, outputing any updates to you, as they occur.

🛃 Problems 🧟 Task	s 🐵 Seam Components 👭 Servers 🕅 Git Repositories 💻 Console 🛿
jbossas-irooskovdoma	in.rhcloud.com
01:01:59,754 INFO	[org.jboss.as.logging] JBAS011503: Restored bootstrap log handlers
01:01:59,808 INF0	[com.arjuna.ats.jbossatx] ARJUNA032018: Destroying TransactionMan
01:01:59,809 INF0	[com.arjuna.ats.jbossatx] ARJUNA032014: Stopping transaction recov
01:01:59,871 INF0	[org.jboss.as.server.deployment] JBAS015877: Stopped deployment R
01:01:59.874 INEO	[org.iboss.as] JBAS015950: JBoss AS 7.1.0.Final "Thunder" stopped
<	

Figure 6.2. Viewing OpenShift server console output

This information can be useful in ensuring processes are executing as expected.

6.2. Viewing Environment Variables

You are able to view the environment variables that an OpenShift application is utilizing and the current content of each variable. To have this output displayed to you right-click on your OpenShift server in the **OpenShift** view tab, and select **Environment Variables**.

🔎 Spring MVC Project	🛞 <u>GWT Web Project</u>	Framework Th a very strong f			
 Project Examples 	1= 🌮 🗄 🗇	development			
JBoss Quickstarts		- Blogs			
- Documentation		😋 <u>JBoss Tools</u>			
🕒 Getting Started 🎐 Software/Update					
🕄 Problems 🔲 Properties	🖧 Servers 🕄 OpenShift Ex	plorer 🛛 🔤			
🕄 Problems 🔲 Properties	🖧 Servers 🕄 OpenShift Ex	plorer 🛿			
 Problems Properties rhn-ecs-irooskov ibossas jbossas-7 	🖧 Servers 🕄 OpenShift Ex	plorer 🛿			
 Problems Properties rhn-ecs-irooskov jbossas jbossas-7 	🖧 Servers 🕄 OpenShift Ex	plorer 🛿			
 Problems Properties rhn-ecs-irooskov jbossas jbossas-7 	🖧 Servers 🕄 OpenShift Ex	plorer 🛛			

Figure 6.3. Selecting the Environment Variables menu item

The output will appear in the **Console** view tab.

Properties	🖧 Servers	OpenShift Explore	er 📮 Console	x
ariables for ap	oplication 'jbo	ossas' (irooskovdomaii	ו)	
PP_DNS=jboss	as-iroosko	ovdomain.rhcloud.c	om	
PP_NAME=jbos	sas			
PP_UUID=05ec	f 451 f 4004k	044b5e6e07e67f7ec8	2	
ATA_DIR=/var	/lib/stick	shift/05edf451f40	04b44b5e6e07	e67f7ec82/app-root/data
EAR_CTL_SCRI	PT=/var/li	.b/stickshift/05ed	f451f4004b44	b5e6e07e67f7ec82/jbossa
EAR_DIR=/var	/lib/stic	shift/05edf451f40	04b44b5e6e07	e67f7ec82/jbossas/
EAR_DNS=jbos	sas-iroos	covdomain.rhcloud.	com	
EAR_NAME=jbo	ssas			
EAR_TYPE=jbo	ssas-7			
EAR_UUID=05e	edf 451f 4004	1b44b5e6e07e67f7ec	82	
OMEDIR=/var/	/lib/sticks	shift/05edf451f400	4b44b5e6e07e	67f7ec82/
VTERNAL_IP=1	27.8.190.	L		
VTERNAL_PORT	=8080			
30SS_CLUSTEF	≷='127.8.19	90.1[7600]'		
BOSS_CLUSTEF	<pre>?_PORT=760(</pre>	0		
BOSS_CLUSTEF	PROXY_POF	RT=7600		
DG_DIR=/var/	lib/sticks	shift/05edf451f400	4b44b5e6e07e	67f7ec82/jbossas/logs/
EPO_DIR=/var	/lib/stick	shift/05edf451f40	04b44b5e6e07	e67f7ec82/app-root/run1
JNTIME_DIR=/	/var/lib/s1	ickshift/05edf451	f4004b44b5e6	e07e67f7ec82/jbossas/rı
JN_DIR=/var/	/lib/sticks	shift/05edf451f400	4b44b5e6e07e	67f7ec82/jbossas/run/
MP_DIR=/tmp/	/			
			Ш	
	Properties	Properties & Servers ariables for application 'jbo P_DNS=jbossas-iroosko PP_UUID=05edf451f4004b ATA_DIR=/var/lib/stick EAR_CTL_SCRIPT=/var/lib EAR_DIR=/var/lib/stick EAR_DNS=jbossas-iroosk EAR_NAME=jbossas EAR_TYPE=jbossas-7 EAR_UUID=05edf451f4004 DMEDIR=/var/lib/sticks NTERNAL_IP=127.8.190.1 NTERNAL_PORT=8080 BOSS_CLUSTER='127.8.19 BOSS_CLUSTER_PORT=7600 BOSS_CLUS	Properties & Servers OpenShift Explore ariables for application 'jbossas' (irooskovdomain PD_DNS=jbossas-irooskovdomain.rhcloud.c PD_NAME=jbossas PD_UUID=05edf451f4004b44b5e6e07e67f7ec8 ATA_DIR=/var/lib/stickshift/05edf451f40 EAR_CTL_SCRIPT=/var/lib/stickshift/05edf451f40 EAR_DIR=/var/lib/stickshift/05edf451f40 EAR_DNS=jbossas-irooskovdomain.rhcloud. EAR_NAME=jbossas EAR_TYPE=jbossas-7 EAR_UUID=05edf451f4004b44b5e6e07e67f7ec DMEDIR=/var/lib/stickshift/05edf451f400 NTERNAL_IP=127.8.190.1 NTERNAL_PORT=8080 BOSS_CLUSTER='127.8.190.1[7600]' BOSS_CLUSTER_PORT=7600 BOSS_CLUSTER_PORT=7600 DG_DIR=/var/lib/stickshift/05edf451f400 EPO_DIR=/var/lib/stickshift/05edf451f400 JNTIME_DIR=/var/lib/stickshift/05edf451f400 JNTIME_DIR=/var/lib/stickshift/05edf451f400 JNTIME_DIR=/var/lib/stickshift/05edf451f400 JNTIME_DIR=/var/lib/stickshift/05edf451f400 JNTIME_DIR=/var/lib/stickshift/05edf451f400 JNTIME_DIR=/var/lib/stickshift/05edf451f400 JNTIME_DIR=/var/lib/stickshift/05edf451f400 JNTIME_DIR=/var/lib/stickshift/05edf451f400 JNTIME_DIR=/var/lib/stickshift/05edf451f400 JNTIME_DIR=/var/lib/stickshift/05edf451f400 JNTIME_DIR=/var/lib/stickshift/05edf451f400 JNTIME_DIR=/var/lib/stickshift/05edf451f400 JNTIME_DIR=/var/lib/stickshift/05edf451f400 JNTIME_DIR=/var/lib/stickshift/05edf451f400	Properties & Servers OpenShift Explorer Console ariables for application 'jbossas' (irooskovdomain) PP_DNS=jbossas irooskovdomain.rhcloud.com PP_NAME=jbossas PP_UUID=05edf 451f 4004b 44b5e6e07e67f7ec82 ATA_DIR=/var/lib/stickshift/05edf 451f 4004b 44b5e6e07e AR_CTL_SCRIPT=/var/lib/stickshift/05edf 451f 4004b 44b5e6e07e AR_DIR=/var/lib/stickshift/05edf 451f 4004b 44b5e6e07e AR_DIR=jbossas AR_TYPE=jbossas.7 AR_UUID=05edf 451f 4004b 44b5e6e07e67f7ec82 OMEDIR=/var/lib/stickshift/05edf 451f 4004b 44b5e6e07e AR_NAME=jbossas SAR_TYPE=jbossas.7 AR_UUID=05edf 451f 4004b 44b5e6e07e67f7ec82 OMEDIR=/var/lib/stickshift/05edf 451f 4004b 44b5e6e07e AR_NAME=jbossa SS_CLUSTER='127.8.190.1[7600]' BOSS_CLUSTER_PORT=7600 DG_DIR=/var/lib/stickshift/05edf 451f 4004b 44b5e6e07e EPO_DIR=/var/lib/stickshift/05edf 451f 4004b 44b5e6e07e ANTIME_DIR=/var/lib/stickshift/05edf 451f 4004b 44b5e6e07e ANDIR=/var/lib/stickshift/05edf 451f 4004b 44b5e

Figure 6.4. Viewing OpenShift application environment variables

This information can be useful in ensuring an application is receiving the correct environment variable values.

Deleting applications and domains

This chapter explains how to remove applications and domains from OpenShift.

7.1. Deleting an application

Deleting an application will only remove it from the OpenShift server. The application and OpenShift server adapter will remain in your workbench.

To remove an application right-click on it in the **OpenShift Explorer** view tab and select **Delete Application(s)** from the context menu.

🄎 <u>Spring MVC Project</u>	🛞 <u>GWT Web Project</u>	Framework T a very strong				
 Project Examples 	1= 🊀 🗄 🧇	development.				
JBoss Quickstarts						
- Documentation		■ Blogs				
Documentation		🖕 <u>JBoss Tool</u>				
📙 Getting Started 🎐 Soft	ware/Update					
🔍 Problems 🔲 Properties						
Problems Properties Proservers OpenShift Explorer A						
▽ 📋 rhn-ecs-irooskov						
🔓 ibossas ibossas-7						
-, ,						

Figure 7.1. Delete Application(s) menu item

A dialog window will display asking you to confirm the action and alerting you that you will not be able to recover the application one it has been deleted. Click the **OK** button to delete the application.



Figure 7.2. Confirming application deletion

Once the application has been deleted you will notice that it has been removed from the list of applications available on your OpenShift server.

🕄 Problems	Properties	綿 Servers	S OpenShift Explorer ⊠	
🗓 rhn-ecs-irooskov				

Figure 7.3. Application removed

7.2. Deleting a domain

To delete a domain right-click on your server connection in the **OpenShift Explorer** view tab and select **Delete Domain** from the context menu.

🔂 Problems 🔲 Properties 🖓	🖧 Servers	8 OpenShift Explorer 🛛			
Îl rhn-ecs-irooskov					
		New OpenShift Application			
		Create or Edit Domain			
		Delete Domain			
		Disconnect			
		Refresh			
	_	Properties			

Figure 7.4. Delete Domain menu item

A dialog box will be displayed asking you to confirm domain deletion. As a domain can only be deleted if it has no applications associated with it, an option is available to **Force applications deletion**. By selecting this checkbox any applications still associated with the domain will be deleted and unrecoverable.

Warning
It is recommended that you remove applications individually before deleting a
domain to ensure you have created a copy of any application data you wish to keep.

If you do not select the **Force applications deletion** option and the domain to be removed still has an application associated with it, domain deletion will fail.



Figure 7.5. Confirming domain deletion

Once the domain has been deleted the connection to OpenShift will remain, however the **Delete Domain** option will not be available from the context menu.

🕄 Problems 🔲 Properties 👫 Serve	ers 🕄 OpenShift Explorer 🛿
🗊 rhn-ecs-irooskov	New OpenShift Application
	Greate or Edit Domain
	Delete Demain
	Delete Domain
	Disconnect
	Refresh
	Properties

Figure 7.6. Delete Domain option not available