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 <mark>SS</mark>	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	t and server adapt			OPENSHIFT
✓ Create a new pro Use existing project				Browse
Server Adapter	p a server for easy	publishing		
?	< 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 ☑ Use default location	

Location:	/home/irooskov/git	Browse
🗹 Use default re	emote 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] 📃	riopercies	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**.

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	🗄 Ov
	Gene
	Spec
	Ser
	Hos
	Op
	- Op
	Dep
	Pro
	Use
	Арр
Problems Properties 🕸 Servers 🛛 3 OpenShift Explorer	Ou
✓ Sijbossas OpenShift Server [Started]	
G DWP_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	鷎 Servers	🕄 OpenShift Explo	rer 🛛	
~	🛈 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 a	S		
			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 a very strong fo	
- Project Examples	1= 松 🗄 🛷	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



Refresh	Status	Remote Port	Remote Addres	Local Port	Local Address	Service
	Stoppe	4447	127.8.190.1	4447	127.0.0.1	ava
Start All	Stoppe	8080	127.8.190.1	8080	127.0.0.1	ava
Stop All						
Stop All						
Stop All						
Stop All						
Stop All			or all Services	e local address fo	L27.0.0.1' as the	⊡ Use '
			or all Services	e local address fo	L27.0.0.1' as the	☑ Use '

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 8 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
✓ Î rhn-ecs-irooskov	Refresh
jbossas jbossas-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	🧟 Tasks	💯 Seam Components	🕫 Servers	🕅 Git Repositories	🖳 Console 🛛
jbossas-iroosl	kovdomain	.rhcloud.com			
01:01:59,75					bootstrap log handlers
01:01:59,80	8 INFO	[com.arjuna.ats.jb	ossatx] AR	JUNA032018: Dest	roying TransactionMana
01:01:59,80	9 INFO	[com.arjuna.ats.jb	ossatx] AR	JUNA032014: Stop	ping transaction recov
01:01:59,87	'l INFO	[org.jboss.as.serv	er.deploym	ent] JBAS015877:	Stopped deployment R
01:01:59.87	4 TNEO	[org.iboss.as] JBA	so15950: JI	Boss AS 7.1.0.Fi	nal "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= 39 🗄 🛷	development
JBoss Quickstarts		- Blogs
- Documentation		🖕 <u>JBoss Tools</u>
📙 Getting Started 🎐 Soft	ware/Update	
	•	
	🖧 Servers 🕄 OpenShift Ex	plorer 🛛 🚽
	🕫 Servers 🕄 OpenShift Ex	plorer 🛛
Rroblems Properties	🕏 OpenShift Ex	plorer 🛛 🗌
Problems Properties Torus Properties Properties	🕏 OpenShift Ex	plorer 🛛
Problems Properties Torus Properties Properties		plorer 🛛

Figure 6.3. Selecting the Environment Variables menu item

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

🗟 Problems 🔲 Properties 👭 Servers 🕴 OpenShift Explorer 💷 Console 🛿
Environment Variables for application 'jbossas' (irooskovdomain)
OPENSHIFT_APP_DNS=jbossas-irooskovdomain.rhcloud.com
OPENSHIFT_APP_NAME=jbossas
OPENSHIFT_APP_UUID=05edf451f4004b44b5e6e07e67f7ec82
OPENSHIFT_DATA_DIR=/var/lib/stickshift/05edf451f4004b44b5e6e07e67f7ec82/app-root/data
OPENSHIFT_GEAR_CTL_SCRIPT=/var/lib/stickshift/05edf451f4004b44b5e6e07e67f7ec82/jbossa OPENSHIFT_GEAR_DIR=/var/lib/stickshift/05edf451f4004b44b5e6e07e67f7ec82/jbossas/
OPENSHIFT_GEAR_DIR=/var/tib/stickshift/05ed145114004b44b5e6e0/e6/1/eca2/jbossas/ OPENSHIFT_GEAR_DNS=jbossas-irooskovdomain.rhcloud.com
OPENSHITT_GEAR_NAME=jbossas
OPENSHIFT GEAR TYPE=jbossas-7
0PENSHIFT_GEAR_UUID=05edf451f4004b44b5e6e07e67f7ec82
OPENSHIFT_HOMEDIR=/var/lib/stickshift/05edf451f4004b44b5e6e07e67f7ec82/
OPENSHIFT_INTERNAL_IP=127.8.190.1
OPENSHIFT_INTERNAL_PORT=8080
OPENSHIFT_JBOSS_CLUSTER='127.8.190.1[7600]'
OPENSHIFT_JBOSS_CLUSTER_PORT=7600
OPENSHIFT_JBOSS_CLUSTER_PROXY_PORT=7600 OPENSHIFT_LOG_DIR=/var/lib/stickshift/05edf451f4004b44b5e6e07e67f7ec82/jbossas/logs/
OPENSHIFT_REPO_DIR=/var/lib/stickshift/05edf451f4004b44b5e6e07e67f7ec82/jb0ssas/t0gs/
OPENSHIFT_RUNTIME_DIR=/var/lib/stickshift/05edf451f4004b44b5e6e07e67f7ec82/jbossas/ru
OPENSHIFT RUN DIR=/var/lib/stickshift/05edf451f4004b44b5e6e07e67f7ec82/jbossas/run/
OPENSHIFT_TMP_DIR=/tmp/
< III

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= 39 🗄 🧇	development.
JBoss Quickstarts		
- Documentation		■ Blogs
Documentation		🖕 <u>JBoss Tool</u>
📙 Getting Started 🎐 Soft	ware/Update	
🔍 Problems 🔲 Properties	🕫 Servers 🕄 OpenShift Ex	placer M
	openshirt Ex	
▽ 🟮 rhn-ecs-irooskov		
🔓 jbossas jbossas-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	Ø OpenShift Explorer ⊠
0 rhn-ecs	s-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 🛛
🗓 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	rs 🕄 OpenShift Explorer 🛿
🗊 rhn-ecs-irooskov	New OpenShift Application
	New OpenShift Application
	Create or Edit Domain
	Delete Domain
	Disconnect
	Refresh
	Properties

Figure 7.6. Delete Domain option not available