Deploying the JBoss Portfolio to the Cloud

Bill DeCoste

Principal Software Engineer, OpenShift PaaS by Red Hat

wdecoste@redhat.com

https://github.com/bdecoste/JUDCon2012.git

Agenda

- Getting Started
- JBoss Portfolio
- JBoss Modules
- JBoss Configuration
- Hot Deploy
- Port-Forwarding vs. HTTP
- Deploying Private Maven Components
- Portfolio Demos
- Clustering (time permitting)

Getting Started

- Sign up! http://openshift.redhat.com
- Install RHC client tools
- Create an Application! We will focus on the JBoss Cartridge in this session but several others available
- See Schabell's “OpenShift State of the Union” for details
- See Coulon/Dietisheim's “Deployment of JEE6 apps on OpenShift made easy” for tooling

JBoss Portfolio - SwitchYard

- SwitchYard is a lightweight service delivery framework providing full lifecycle support for developing, deploying, and managing service-oriented applications.
- http://www.jboss.org/switchyard

JBoss Portfolio - Drools

- Drools Expert is a declarative, rule based, coding environment. This allows you to focus on "what it is you want to do", and not the "how to do this"
- http://www.jboss.org/drools

JBoss Portfolio - jBPM

- jBPM is a flexible Business Process Management (BPM) Suite. It makes the bridge between business analysts and developers.
- http://www.jboss.org/jbpm

JBoss Portfolio - Infinispan

- Infinispan is an extremely scalable, highly available data grid platform
- http://www.jboss.org/infinispan

JBoss Modules

- JBoss Modules is a standalone implementation of a *modular* (non-hierarchical) class loading and execution environment for Java.
- .openshift/config/modules
- SwitchYard, Drools, jBPM, Infinispan included by default
- ***DEMO:*** Add or update modules!

JBoss Configuration

- Enable and Configure SwitchYard, Drools, jBPM, etc.
- Configure Application Level Infinispan
- ***DEMO:*** .openshift/config/standalone.xml

Deploying Private Maven Components

- Configure hooks in .openshift/action_hooks
- Add the jar to the root of your local git repo
- Install maven component via pre_build hook

```
mvn install:install-file -Dfile=../../jboss1/repo/caching-1.0.jar -DgroupId=org.judcon
-DartifactId=caching -Dversion=1.0 -Dpackaging=jar
```

- Update pom.xml
- ***DEMO:*** Add component

Hot Deploy

- Markers Used to Enable Functionality
- .openshift/markers/hot_deploy => Hot Deploy
- .openshift/markers/enable_jpda => Debugging
- ***DEMO*** : Hot Deploy Application(s)

Deploying Applications

- Deploy SwitchYard, Drools, jBPM, Infinispan, and private maven components
- ***DEMO:*** Deploy Applications

HTTP Wrappers

- Expose components via REST or Web Services
- ***DEMO:*** SwitchYard, Infinispan, and JMS via REST

Open (selinux) Ports

postgresql_port_t: 5432

ssh_port_t: 22

mssql_port_t: 1433-1434

memcache_port_t: 11211

pulseaudio_port_t: 4713

oracle_port_t: 1521,2483,2484

flash_port_t: 843,1935

pop_port_t: 106,109,110,143,220,993,995,1109

dns_port_t: 53

jacorb_port_t: 3528,3529

mysqld_port_t: 1186,3306,63132-63164

munin_port_t: 4949

jboss_debug_port_t: 8787

jboss_messaging_port_t: 5445,5455

amqp_port_t: 5671-5672

jboss_management_port_t: 4712,4447,7600,9123,9990,9999,18001

smtp_port_t: 25,465,587

virt_migration_port_t: 49152-49216

all ports with out defined types

ftp_port_t: 21,990

git_port_t: 9418

mongod_port_t: 27017

http_cache_port_t: 8080,8118,8123,10001-10010

http_port_t: 80,443,488,8008,8009,8443

ocsp_port_t: 9080

kerberos_port_t: 88,750,4444

Port-Forwarding

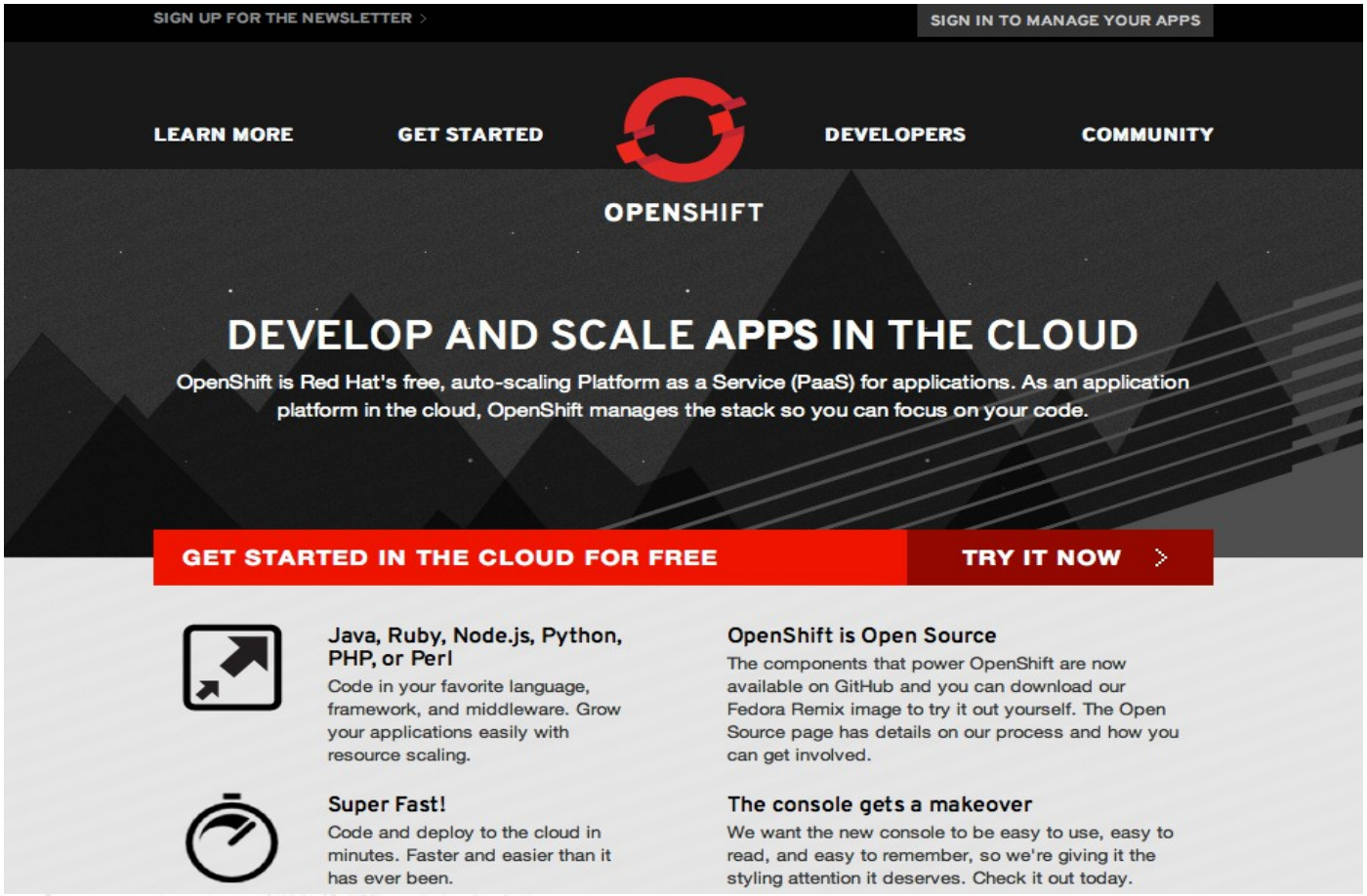
- Access Non-HTTP Services
- rhc port-forward -a jboss1 -d

```
Binding java -> 127.0.250.1:18001...
Binding java -> 127.0.250.1:3528...
Binding java -> 127.0.250.1:4447...
Binding java -> 127.0.250.1:5445...
Binding java -> 127.0.250.1:5455...
Binding java -> 127.0.250.1:8080...
Binding java -> 127.0.250.1:9990...
Binding java -> 127.0.250.1:9999...
```

- ***DEMO:*** SwitchYard, JMS, jBPM, Drools


JBoss Application Server 7.1
(0) Messages
Profile
Runtime
Server Status
Configuration
JVM
Subsystem Metrics
Datasources
JPA
JMS Destinations
Transactions
Web
Runtime Operations
OSGi
Deployments
Manage Deployments
Webservices
Standalone Server
Server: ip-10-39-114-98
Server configuration status. In some cases the configuration needs to be reloaded in order to become effective.
Server Configuration
The server configuration seems uptodate!
Code Name: Thunder
Release version: 7.1.0.Final
Server State: running
Extensions
Name
org.jboss.as.clustering.infinispan
org.jboss.as.clustering.jgroups
org.jboss.as.cmp
org.jboss.as.configadmin
org.jboss.as.connector
1.0.2.Final
Settings
Logout

Questions/Comments?



JBoss Clustering - Preview

- State-Replication
- HTTPSession, SFSB, Hibernate 2-Level Cache
- Inter-Gear Communication/Port Limitations
- Loopback vs. Routable Bindings
- JMS, EJB3, Remoting, JNDI

JBoss Clustering - Preview

- Creating Scalable Applications
- rhc app create -s
- HAProxy
- Apache/mod_cluster coming
- Auto-Scaling

JBoss Clustering - Preview

Creating a Stable Cluster

- scale_limits.txt in root .git directory

scale_min=2

scale_max=2

- .openshift/action_hooks/pre_build

```
cp ../../app-root/runtime/repo/scale_limits.txt ../../app-root/data
```

- Create Second Instance

curl -k -H “Accept: application/xml” --user “*rhlogin:password*”
https://*hostname*/broker/rest/domains/namespace/
applications/*app-name*/events -X POST -d event=scale=up

- *DEMO*

Questions/Comments?