



Management and Monitoring - labs

Zbyněk Roubalík

Senior Quality Engineer, JBoss by Red Hat

Advanced Java EE Lab @ MUNI

May 15 2016

Agenda

- Monitoring
 - JDK tools
 - System tools
- CLI
- Java API
- HTTP API
- WebUI



JDK tools - JAR level investigation

jar tf \$file or unzip -l \$file

```
jar tf jboss-modules.jar
```

```
for i in `find . -name '*.jar'`; do echo "-- $i"; jar tf "$i"; done
```

javap -classpath \$file FQCN

```
javap -classpath jboss-modules.jar org.jboss.modules.JarModuleLoader
```

```
javap -private -classpath jboss-modules.jar org.jboss.modules.JarModuleLoader
```



JDK tools – process

```
bin/standalone.sh
```

```
jps -l [-m -v]
```

```
export PID=`jps -l | grep jboss-modules.jar | cut -d" " -f1`
```



JDK tools – memory

```
jmap $PID
```

```
jmap -dump:file=heap-dump $PID
```

```
jhat heap-dump
```

Check <http://127.0.0.1:7000/>



JDK tools – stack trace and JVM stats

```
jstack -l $PID
```

```
jstat -gcutil -t $PID 1s 30
```

man jstat or <http://docs.oracle.com/javase/7/docs/technotes/tools/share/jstat.html>



JDK tools – GUI

`jconsole $PID`

`bin/jconsole.sh`

VisualVM



System tools

uname -a, cat /etc/redhat-release

top, cat /proc/cpuinfo

free, vmstat -a

df -h, du -h, mount

ps aux, top, kill -9

netstat -natup



CLI

- `bin/jboss-cli.sh -c`
- Interactive mode
 - Tab completion
 - Commands
 - `ls`, `cd`, `deploy`, `undeploy`
 - Operations (`:whoami`, `:read-*`)
 - `:read-operation-description(name="read-attribute")`
 - `:read-resource(recursive=true,include-runtime=true)`



CLI

- Non-interactive mode
 - Commands and file arguments
 - `bin/jboss-cli.sh -c command="ls -l"`
 - `bin/jboss-cli.sh -c file=commands.cli`
 - `commands.cli` contains 2 lines:

```
ls -l  
:whoami
```
 - GUI mode
 - `bin/jboss-cli.sh -c --gui`



Java API

- Maven artifact `org.wildfly.core:wildfly-controller-client`
- *management-00*: initial commit, start here
- *management-01*: Read product version
- *management-02*: Read recursively resources include runtime
- *management-03*: Read recursively resource description of remoting, namely `http-remoting-connector`
- *management-04*: connect remotely to running WF8 instance
- <https://docs.jboss.org/author/display/WFLY10/The+native+management+API>



Java API – Product Version App

- ProductVersionApp.java
- Get product version (WF version)
- Use Java API *operation*

- Hint:
 - :read-attribute(name=product-version)



Java API – Resources Recursively App

- ResourcesRecursivelyApp.java
- Get all resources recursively
- Use Java API *operation and set parameters*
 - Include runtime information
 - Set recursive depth
- Hint:
 - `:read-resource(include-runtime=true,recursive-depth=5)`



Java API – Resources Description for Remoting subsystem App

- ResourcesDescriptionRemotingSubsystemApp.java
- Read resources description for http-remoting-connector in remoting subsystem
- Use Java API **operation** and set **address** (subsystem)
 - remoting / http-connector / http-remoting-connector
 - Read recursively
- Hint:
 - /subsystem=remoting/http-connector=http-remoting-connector:read-resource-description(recursive=true)
 -



Java API – Remote connection App

- RemoteConnectionApp.java
- In WF:
 - Add user with username and password
 - Disable default-user
- In Java API:
 - Use specified credentials to connect via remote api
 - ModelControllerClient with client authentication
 - Run ***whoami operation*** to verify credentials



HTTP API

Simple get operations

- <http://localhost:9990/management?recursive&include-runtime&json.pretty>
 - management/subsystem/infinispan/cache-container/ejb
 - management/subsystem/remoting?operation=attribute&name=worker-task-max-threads



Web Console

<http://127.0.0.1:9990/console/>

- Check environment properties
- Reload server

- Check ExampleDS datasource configuration, create TestDS
- Create JMS queue in Messaging subsystem



Thank you for your attention.

