THE BASICS

APACHE HTTPD

APACHE TOMCAT
- my-app.war
- my-app.war configurations

JDK/JRE

APACHE TOMCAT
- my-app.war
- my-app.war configurations

JDK/JRE
REAL WORLD

Load Balancer

APACHE HTTPD

/app1

/app2

/app3
REAL WORLD

Load Balancer
CONFIGURE

- Define JVMs, Web Servers, Resources

DEPLOY

- Generate/Deploy Web Servers
- Generate/Deploy JVMs

OPERATE

- Start/Stop JVMs
- Start/Stop Web Servers
- Real-time status updates
- Support Tools

AUDIT
RESTful APIs

https://<host>/aem/v1.0/

- /jvms/<name>/start :json
- /jvms/<name>/stop :json
- /webservers/<name>/start :json
- /webservers/<name>/stop :json

REMOTE CONNECTIVITY

SSH/HTTP(S)

Jwala ↔ JVM
AGENDA

CONFIGURE
- Media
- Groups
- JVMs
- Web Servers
- Web Apps
- Resources

DEPLOY
- JVMs
- Web Servers
- Resources

MANAGE
- Groups
- JVMs
- Web Servers
CONFIGURE

Groups
CONFIGURE

Web Servers

Add Web Server
- Name: http01
- Host: centos01
- HTTP Port: 80
- HTTPS Port: 443
- Status Path: http://centos01:80/apache_job.png

* Group
The Webserver templates will only be inherited from a single group:
- contacts
- messages
- calendar

Ok  Cancel
Configure Web Apps
CONFIGURE

GROOVY TEMPLATES
CONFIGURE

GROOVY TEMPLATES
CONFIGURE
server.xml

```xml
<Connector port="${jvm.httpsport}"/>
```

**jvm** (1).

```
portNo = 2901
```

**jvm** (2).

```
portNo = 2911
```

server.xml.md.json

```json
{
  "deployPath": "/opt/jvms/${jvm.jvmName}/conf",
  "deployFileName": "server.xml",
}
```

**Generated server.xml file for jvm-1**

```xml
<Connector port="2901"/>
```

**Generated server.xml file for jvm-2**

```xml
<Connector port="2911"/>
```
**DEPLOY**

### Web Server

<table>
<thead>
<tr>
<th>Name</th>
<th>Host</th>
<th>HTTP</th>
<th>HTTPS</th>
<th>Group</th>
<th>Status</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>http01</td>
<td>centos01</td>
<td>80</td>
<td>443</td>
<td>messages,contacts</td>
<td>status httpd.conf</td>
<td>STARTED</td>
</tr>
<tr>
<td>http02</td>
<td>centos01</td>
<td>90</td>
<td>943</td>
<td>messages,contacts</td>
<td>status httpd.conf</td>
<td>STARTED</td>
</tr>
</tbody>
</table>

### JVMs

<table>
<thead>
<tr>
<th>Name</th>
<th>Host</th>
<th>HTTP</th>
<th>HTTPS</th>
<th>Group</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>contacts-jvm-1</td>
<td>centos01</td>
<td>8380</td>
<td>8381</td>
<td>contacts</td>
<td>STARTED</td>
</tr>
<tr>
<td>contacts-jvm-2</td>
<td>centos01</td>
<td>8480</td>
<td>8481</td>
<td>contacts</td>
<td>STARTED</td>
</tr>
<tr>
<td>contacts-jvm-3</td>
<td>centos01</td>
<td>8780</td>
<td>8781</td>
<td>contacts</td>
<td>STARTED</td>
</tr>
</tbody>
</table>

### Applications

<table>
<thead>
<tr>
<th>Name</th>
<th>War Name</th>
<th>Context</th>
</tr>
</thead>
</table>

**GENERATE/DEPLOY ALL WEB SERVERS**

**GENERATE/DEPLOY ONE WEB SERVER**
DEPLOY
Web Server
JVM
Resource

REMOVE WEB SERVER
MANAGE

Group ➔ Web Servers ➔ JVMs

START/STOP EVERYTHING

AGGREGATE STATUS REAL TIME UPDATES
START/STOP GROUP WEB SERVERS

START/STOP ONE WEB SERVER
MANAGE

Group -> Web Servers -> JVMs

[Image of Tomcat Operations Center] with links to `mod_proxy UI` and `httpd.conf`.

- **Operations**: Configuration Admin
- **Groups**: calendar, contacts
- **Web Servers**:
  - httpd01: context01, HTTP 80, HTTPS 443, Group message,contacts
  - httpd02: context01, HTTP 90, HTTPS 943, Group message,contacts
- **JVMs**:
  - contacts-jvm-1: context01, HTTP 8380, HTTPS 8381, Group contacts
  - contacts-jvm-2: context01, HTTP 8480, HTTPS 8481, Group contacts
  - contacts-jvm-3: context01, HTTP 8780, HTTPS 8781, Group contacts

- Action and Event Logs:
  - 05/13/2017: Web Server httpd02, jwala STOP SENT 19:34:48
  - 05/13/2017: Web Server httpd02, jwala START SENT 19:34:57
  - 05/13/2017: Web Server httpd02, jwala STOP SENT 19:35:00
  - 05/13/2017: Web Server httpd02, jwala START SENT 19:35:02
MANAGE

- Group
- Web Servers
- JVMs

DRAIN SESSIONS PER GROUP
ALL JVMS

DRAIN SESSIONS PER GROUP
ONE JVM
MANAGE

START/STOP GROUP JVMs

START/STOP ONE JVM
MANAGE

- Group
- Web Servers
- JVMs

- LINK TO TOMCAT MANAGER
- THREAD DUMP
- HEAP DUMP
## JWALA ARCHITECTURE

### APACHE TOMCAT

<table>
<thead>
<tr>
<th>React UI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groovy</td>
</tr>
<tr>
<td>slf4j/log4j</td>
</tr>
<tr>
<td>JSch</td>
</tr>
<tr>
<td>JGroups</td>
</tr>
<tr>
<td>Spring Framework</td>
</tr>
<tr>
<td>Embedded H2 DB</td>
</tr>
</tbody>
</table>

### JDK
Getting Started

Build Jwala

1. Install Git
2. Install JDK
3. Install Gradle
4. Clone jwala as follows git clone https://github.com/cerner/jwala.git
5. Build jwala bundle using gradle gradle clean zipJwalaTomcat
6. Set JAVA_HOME and run apache-tomcat set JAVA_HOME=jdk1.7.0_45
7. Run jwala on tomcat

cd /jwala/jwala-tomcat/build/apache-tomcat-7.0.85/bin
Start Tomcat as follows
catalina.bat run

Run Jwala
CONTRIBUTE

Contributing

Help us to make this project better by contributing. Whether it's new features, bug fixes, or simply improving documentation, your contributions are welcome. Please start with logging a [github issue](https://github.com/) or submit a pull request.

Before you contribute, please review these guidelines to help ensure a smooth process for everyone.

Thanks.

Issue Reporting

- Please browse our [existing issues](https://github.com/) before logging new issues.
DEMO
THANK YOU