



Java Thinking

Thursday, 2 May 2013

Deploying to Tomcat 7 with Maven

It's sometimes nice to be able to update a development Tomcat 7 server from Maven - this makes it simple to hook automatic deployment into a CI server or just update the dev server as a developer.

First, the Tomcat manager application needs to be installed (check Tomcat's webapps directory for the manager application) and configured with the appropriate user credentials:

```

1 <?xml version='1.0' encoding='cp1252'?>
2 <tomcat-users>
3   <role rolename="manager-gui"/>
4   <role rolename="manager-script"/>
5   <role rolename="manager-jmx"/>
6   <role rolename="manager-status"/>
7   <role rolename="admin-gui"/>
8   <role rolename="admin-script"/>
9
10  <user username="tomcat" password="password" roles="manager-gui,manager-scr
11 </tomcat-users>

```

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Now, I needed to define the server admin credentials in my maven settings (~/.m2/settings.xml):

```

1 <settings>
2   <servers>
3     <server>
4       <id>dev-tomcat</id>
5       <username>tomcat</username>
6       <password>password</password>
7     </server>
8   </servers>
9 </settings>

```

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Then, I updated the POM to configure the maven tomcat plugin:

```

1 <project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
2   xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/maven-v4_0_0.xsd">
3   <build>
4     ...
5     <plugins>
6       <plugin>
7         <groupId>org.apache.tomcat.maven</groupId>
8         <artifactId>tomcat7-maven-plugin</artifactId>
9         <version>2.1</version>
10        <configuration>
11          <!-- Tomcat 7 has a different manager path - text - than
12          <url>http://REMOTE_SERVER_NAME_GOES_HERE:8080/manager/text</url>
13          <!-- Refer to the server settings in your ~/.m2/settings.xml
14          <server>dev-tomcat</server>
15          <path>/app1</path>
16        </configuration>
17        </plugin>
18      </plugins>
19    </build>
20  </project>

```

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Now, using 'mvn tomcat7:redeploy' lets me update the dev server.

Note however, on Windows you may have some problems with undeploying the application - after

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an undeploy command, some jars may be left over in the webapps/appname directory. When you try to redeploy your app you'll see an error containing "**cannot invoke tomcat manager fail - unable to delete...**".

To work around this, you can change the TOMCAT_HOME/conf/context.xml to include the 'antiJARLocking' attribute like so:

```
<Context antiJARLocking="true">
```

The [documentation](#) points out though that this will impact start up times of applications.

In my case, I noticed problems when doing a redeploy to Tomcat - most likely unrelated to Maven and/or the maven tomcat plugin and more to do with PermGen (I saw perm gen OutOfMemory: PermGen space errors in the tomcat7-stderr logs, and the Tomcat process was consuming 100% cpu). Adding the following switches to the Tomcat JVM settings seems to have fixed it for now:

```
-XX+CMSClassUnloadingEnabled -XX+CMSPermGenSweepingEnabled -  
XX:PermSize=64m -XX:MaxPermSize=128m -Xmx992M
```

(In this instance, I'm running Tomcat 7 as a Windows service on JDK7 with a 50MB WAR file).

Posted by [Paul Rule](#) at 13:43



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