CentOS7 下 svn+tomcat9.0+maven3.3+jenkins 实现 web 项目自动构建与远程发布

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目录

一、实践环境

CentOS 7 操作系统(CentOS-7-x86_64-DVD-1503-01.iso)
下载地址：http://ftp.riken.jp/Linux/centos/7/isos/x86_64/

Java(jdk-8u65-linux-x64.tar.gz)
下载地址：
http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html

Apache Tomcat(apache-tomcat-9.0.0.M1.tar.gz)
下载地址：http://tomcat.apache.org/download-90.cgi

maven(apache-maven-3.3.9-bin.tar.gz)
下载地址：http://maven.apache.org/download.cgi

jenkins(jenkins.war)
下载地址：https://wiki.jenkins-ci.org/display/JENKINS/Meet+Jenkins

Deploy to container Plugin(deploy-1.0.phi)
下载地址：https://updates.jenkins-ci.org/download/plugins/deploy/

以上软件包集合下载地址：http://pan.baidu.com/s/1c1xnUfu

二、安装 SVN(如果没的话)

参考文章：CentOS7 下配置 svn 的安装及基础配置介绍

三、安装 java

```
[root@localhost tmp]# mkdir -p /usr/local/java
[root@localhost tmp]# mv jdk-8u65-linux-x64.tar.gz /usr/local/java
[root@localhost tmp]# cd /usr/local/java/
[root@localhost java]# tar -xvzf jdk-8u65-linux-x64.tar.gz
……
[root@localhost java]# rm -rf jdk-8u65-linux-x64.tar.gz
```

环境变量配置

```
[root@localhost java]# vim /etc/profile
```

添加如下内容：

```
#added by shouke
export JAVA_HOME=/usr/local/java/jdk1.8.0_65
export JRE_HOME=/usr/local/java/jdk1.8.0_65/jre
CLASSPATH=.:$JAVA_HOME/lib/dr.jar:$JAVA_HOME/lib/tools.jar:
export PATH=$PATH:$JAVA_HOME/bin:$JRE_HOME/bin
```

```
    fi
done

unset i
unset -f pathmunge

#added by shouke
export JAVA_HOME=/usr/local/java/jdk1.8.0_65
export JRE_HOME=/usr/local/java/jdk1.8.0_65/jre
CLASSPATH=.:$JAVA_HOME/lib/dr.jar:$JAVA_HOME/lib/tools.jar:
export PATH=$PATH:$JAVA_HOME/bin:$JRE_HOME/bin
```

```
[root@localhost bin]# source /etc/profile
```

查看是否安装成功

```
[root@localhost java]# java -version
java version "1.8.0_65"
Java(TM) SE Runtime Environment (build 1.8.0_65-b17)
Java HotSpot(TM) 64-Bit Server VM (build 25.65-b01, mixed mode)
[root@localhost java]# javac -version
javac 1.8.0_65
```

参考连接：

http://docs.oracle.com/javase/8/docs/technotes/guides/install/linux_jdk.html#BJFJJEFG

四、安装 Apache Tomcat

```
[root@localhost tmp]# tar -xvzf apache-tomcat-9.0.0.M1.tar.gz
……
[root@localhost tmp]# mkdir -p /usr/local/apache-tomcat
```

```
[root@localhost tmp]# mv apache-tomcat-9.0.0.M1 /usr/local/apache-tomcat/
```

环境变量配置：

```
[root@localhost java]# vim /etc/profile
……
#added by shouke
export JAVA_HOME=/usr/local/java/jdk1.8.0_65
export JRE_HOME=/usr/local/java/jdk1.8.0_65/jre
export CATALINA_BASE=/usr/local/apache-tomcat/apache-tomcat-9.0.0.M1
export CATALINA_HOME=/usr/local/apache-tomcat/apache-tomcat-9.0.0.M1
CLASSPATH=.:$JAVA_HOME/lib/dr.jar:$JAVA_HOME/lib/tools.jar:
export PATH=$PATH:$JAVA_HOME/bin:$JRE_HOME/bin:$CATALINA_BASE:$CATALINA_HOME
[root@localhost bin]# source /etc/profile
```

设置管理员帐号密码

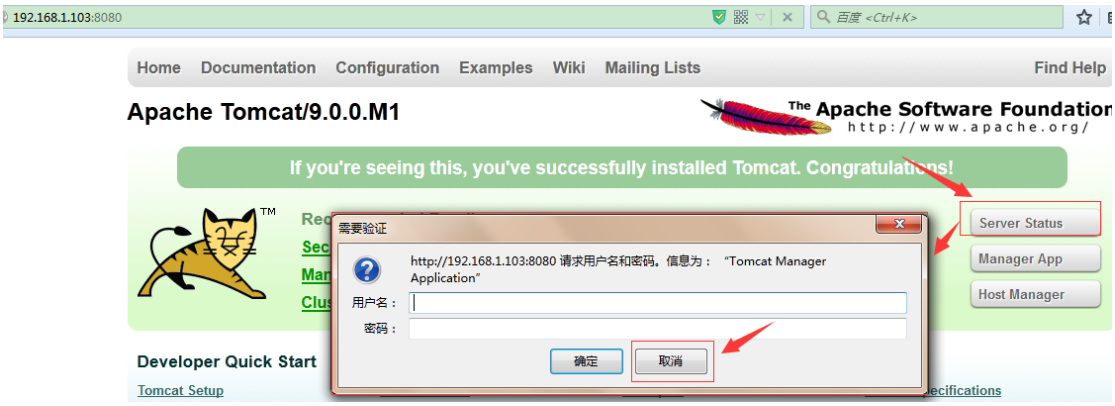
```
[root@localhost apache-tomcat-9.0.0.M1]# ls
bin  conf  lib  LICENSE  logs  NOTICE  RELEASE-NOTES  RUNNING.txt  temp
webapps  work
[root@localhost apache-tomcat-9.0.0.M1]# cd conf/
[root@localhost conf]# vim tomcat-users.xml
```

找到如下内容

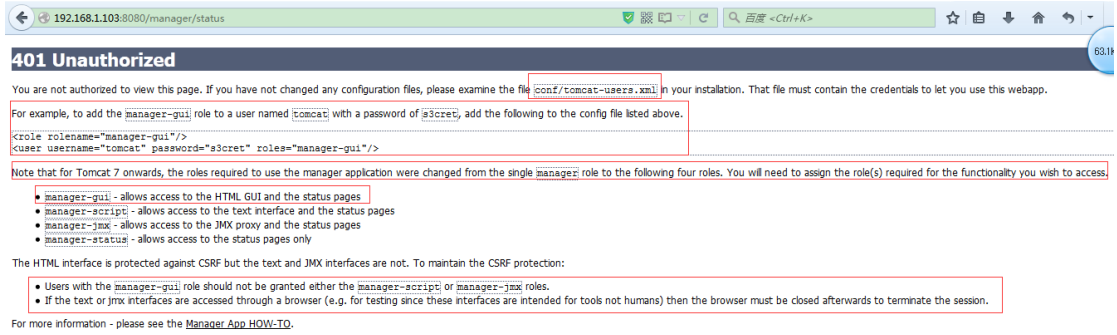
```
<!--
  NOTE:  The sample user and role entries below are wrapped in a comment
  and thus are ignored when reading this file. Do not forget to remove
  <!.. ..> that surrounds them.
-->
<!--
  <role rolename="tomcat"/>
  <role rolename="role1"/>
  <user username="tomcat" password="tomcat" roles="tomcat"/>
  <user username="both" password="tomcat" roles="tomcat,role1"/>
  <user username="role1" password="tomcat" roles="role1"/>
-->
</tomcat-users>
```

在其下新增用户和角色

问题：怎么知道角色是啥角色呢？ 如下，点击对应按钮，点击取消，



如下，它会告诉你怎么做的



可根据实际情况设置，修改后的文件配置如下

```
<!--
  <role rolename="tomcat"/>
  <role rolename="role1"/>
  <user username="tomcat" password="tomcat" roles="tomcat"/>
  <user username="both" password="tomcat" roles="tomcat,role1"/>
  <user username="role1" password="tomcat" roles="role1"/>
-->
<role rolename="manager-gui"/>
<role rolename="admin-gui"/>
<user username="hostadmin" password="123456" roles="admin-gui"/>
<user username="admin" password="huozhe" roles="manager-gui,admin-gui"/>
</tomcat-users>
```

说明：admin 用户可以访问 Server Status，Manager App， Host Manager，hostadmin 只可访问 Host Manager

启动 Apache Tomcat

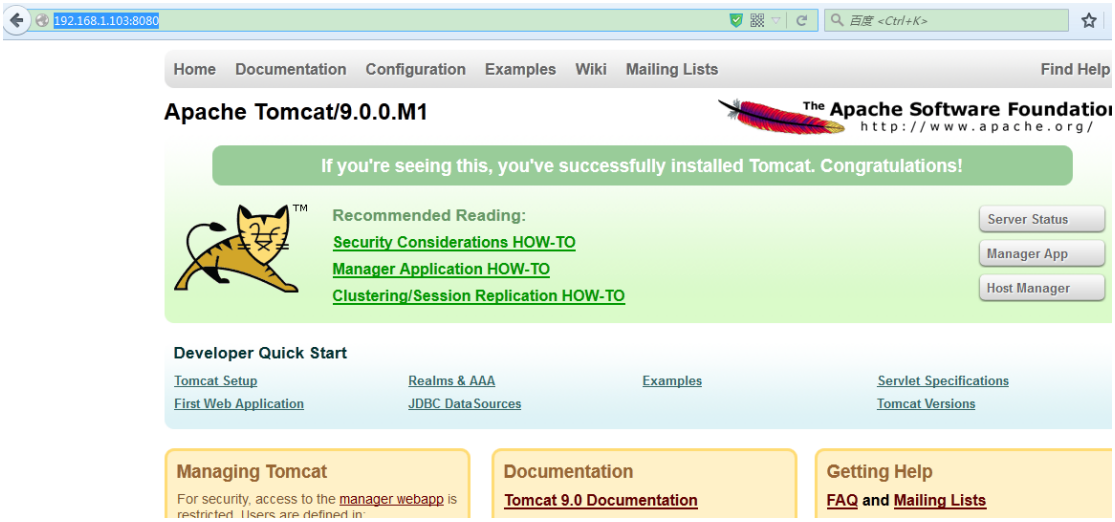
```
[root@localhost tmp]# cd /usr/local/apache-tomcat/apache-tomcat-9.0.0.M1/
[root@localhost apache-tomcat-9.0.0.M1]# cd bin
[root@localhost bin]# sh startup.sh
Using CATALINA_BASE:   /usr/local/apache-tomcat/apache-tomcat-9.0.0.M1
Using CATALINA_HOME:   /usr/local/apache-tomcat/apache-tomcat-9.0.0.M1
Using CATALINA_TMPDIR: /usr/local/apache-tomcat/apache-tomcat-9.0.0.M1/temp
Using JRE_HOME:        /usr/local/java/jdk1.8.0_65/jre
Using CLASSPATH: /usr/local/apache-tomcat/apache-tomcat-9.0.0.M1/bin/bootstrap.jar:/usr/local/apache-tomcat/apache-tomcat-9.0.0.M1/bin/tomcat-juli.jar
Tomcat started.
[root@localhost bin]#
```

防火墙开放默认的 8080 端口

```
[root@localhost bin]# firewall-cmd --permanent --zone=public --add-port=8080/tcp
success
```

```
[root@localhost bin]# firewall-cmd --reload
```

访问测试



五、安装 maven

```
[root@localhost tmp]# mkdir -p /usr/local/maven
[root@localhost tmp]# tar -xvzf  apache-maven-3.3.9-bin.tar.gz
……
[root@localhost tmp]# mv apache-maven-3.3.9 /usr/local/maven/
```

环境变量设置

```
[root@localhost tmp]# vim /etc/profile
export JAVA_HOME=/usr/local/java/jdk1.8.0_65
export JRE_HOME=/usr/local/java/jdk1.8.0_65/jre
export CATALINA_BASE=/usr/local/apache-tomcat/apache-tomcat-9.0.0.M1
export CATALINA_HOME=/usr/local/apache-tomcat/apache-tomcat-9.0.0.M1
export MAVEN_HOME=/usr/local/maven/apache-maven-3.3.9
CLASSPATH=.:$JAVA_HOME/lib/dr.jar:$JAVA_HOME/lib/tools.jar:
export
PATH=$PATH:$JAVA_HOME/bin:$JRE_HOME/bin:$CATALINA_BASE:$CATALINA_HOME:$MAVE
N_HOME/bin
[root@localhost tmp]# source /etc/profile
```

查看是否安装成功

```
[root@localhost tmp]# mvn -v
Apache      Maven      3.3.9      (bb52d8502b132ec0a5a3f4c09453c07478323dc5;
2015-11-11T00:41:47+08:00)
Maven home: /usr/local/maven/apache-maven-3.3.9
Java version: 1.8.0_65, vendor: Oracle Corporation
Java home: /usr/local/java/jdk1.8.0_65/jre
```

```
Default locale: en_US, platform encoding: UTF-8
OS name: "linux", version: "3.10.0-229.el7.x86_64", arch: "amd64", family: "unix"
```

参考连接：http://maven.apache.org/install.html

六、安装 jenkins

```
[root@localhost tmp]# ls
jenkins.war
[root@localhost tmp]# cp jenkins.war /usr/local/apache-tomcat/apache-tomcat-9.0.0.M1/webapps/
```

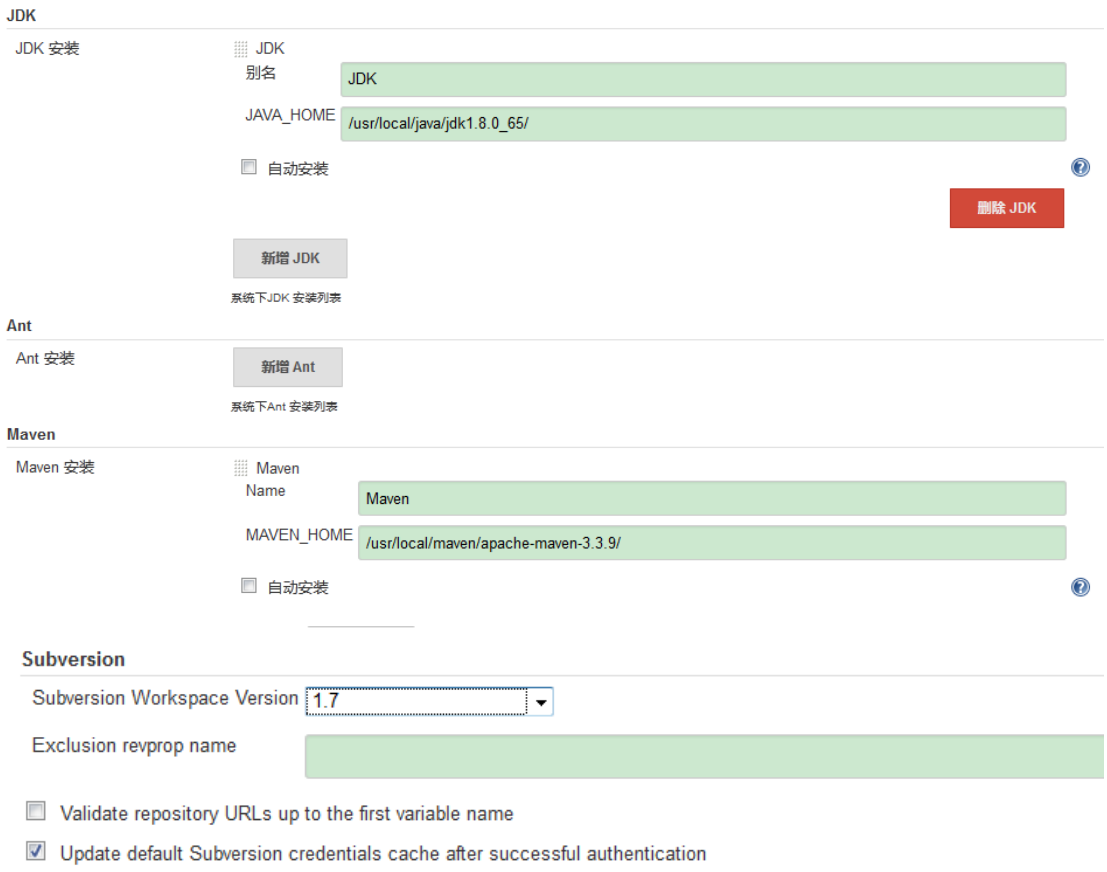
重启 apache tomcat 服务器

```
[root@localhost bin]# sh /usr/local/apache-tomcat/apache-tomcat-9.0.0.M1/bin/shutdown.sh
[root@localhost bin]# sh sh /usr/local/apache-tomcat/apache-tomcat-9.0.0.M1/bin/startup.sh
```

访问 jenkins

七、Jenkins 基本设置

1）系统管理-系统设置


JDK
JDK 安装
JDK
别名
JDK
JAVA_HOME
/usr/local/java/jdk1.8.0_65/
自动安装
删除 JDK
新增 JDK
系统下JDK 安装列表
Ant
Ant 安装
新增 Ant
系统下Ant 安装列表
Maven
Maven 安装
Maven
Name
Maven
MAVEN_HOME
/usr/local/maven/apache-maven-3.3.9/
自动安装
Subversion
Subversion Workspace Version
1.7
Exclusion revprop name
Validate repository URLs up to the first variable name
Update default Subversion credentials cache after successful authentication

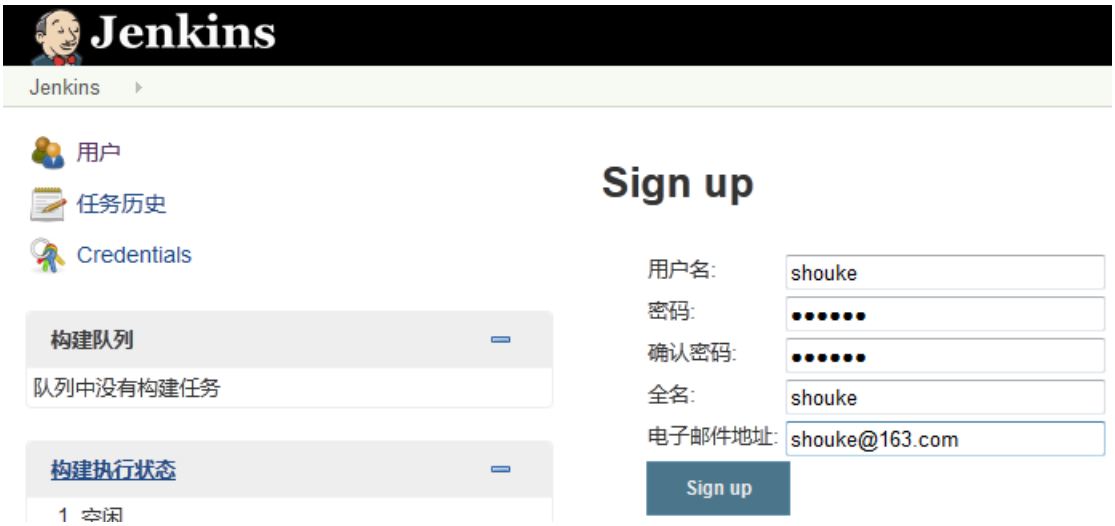
2）系统管理-安全设置


Configure Global Security
启用安全
JNLP节点代理的TCP端口
指定端口：
随机选取
禁用
Disable remember me
访问控制
安全域
Jenkins专有用户数据库
允许用户注册
LDAP
Servlet容器代理
Unix用户/组数据库
授权策略
任何用户可以做任何事(没有任何限制)
安全矩阵
登录用户可以做任何事
遗留模式
项目矩阵授权策略
保存
应用

提交后如下


Jenkins
Jenkins
用户
任务历史
Credentials
构建队列
队列中没有构建任务
构建执行状态
1 空闲
2 空闲
用户名:
密码:
在这台计算机上保持登录状态
登录
创建一个用户账号 如果你没有注册用户.

注册并登陆



3）系统管理-插件管理

1）Deploy to container Plugin
安装方法 1、在线安装
系统管理->管理插件->可选插件->过滤，输入 Deploy to container Plugin，

缺点:可能无法下载，GFW 太强大了

安装方法 2、本地安装

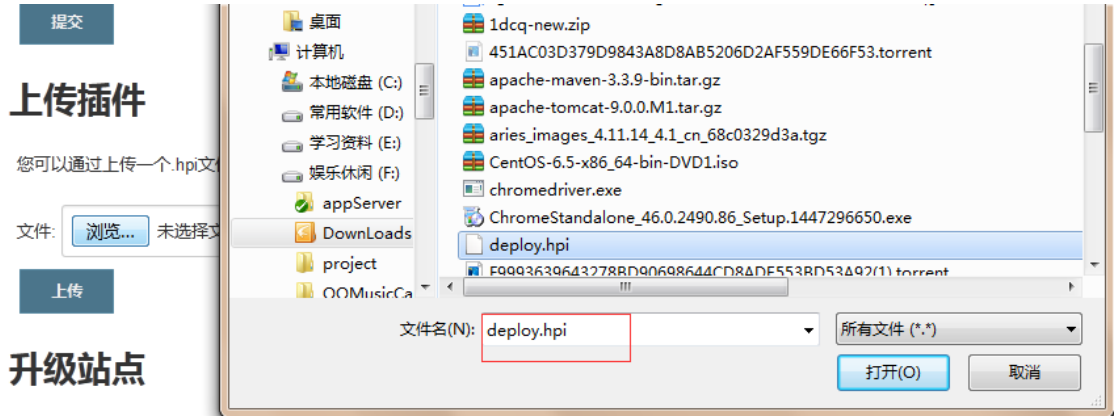
下载插件，插件集合下载地址：

https://updates.jenkins-ci.org/download/plugins

Deploy to container Plugin 下载地址：

https://updates.jenkins-ci.org/download/plugins/deploy/

系统管理->管理插件->高级->上传插件->浏览，打开.phi 插件->上传



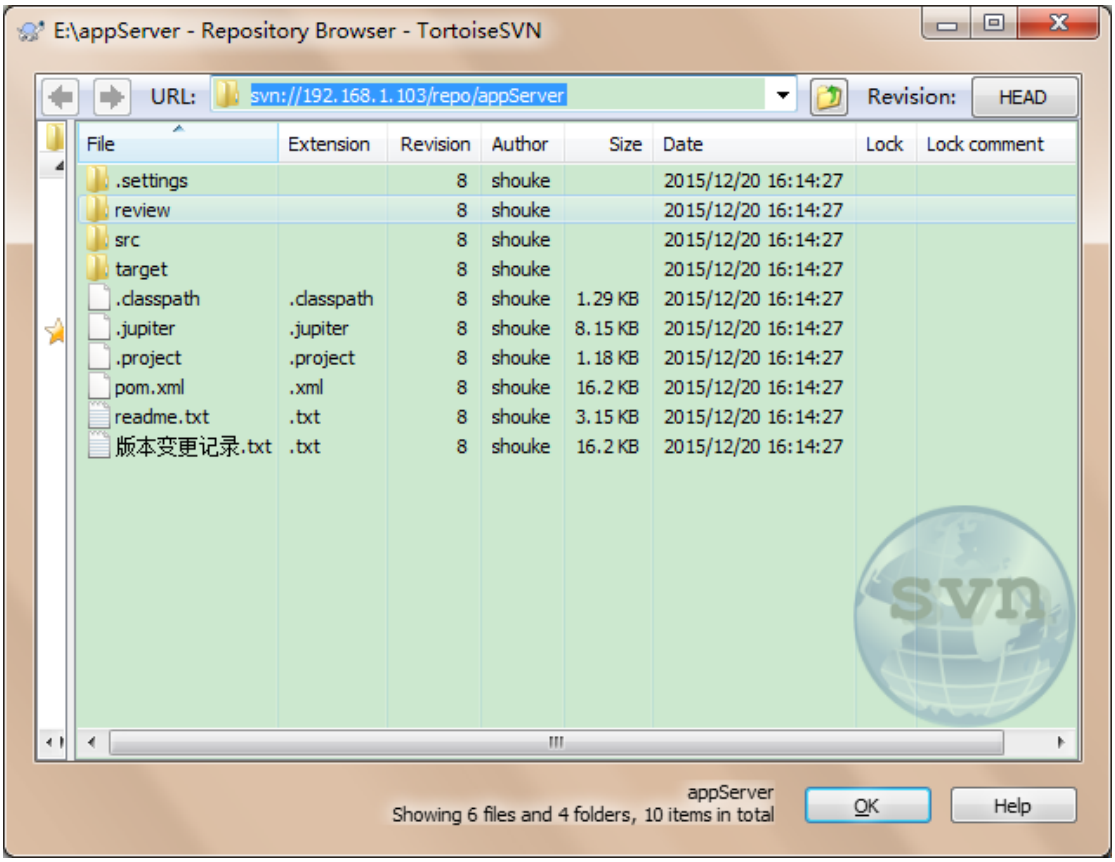
查看是否安装成功

八、自动构建任务与自动部署

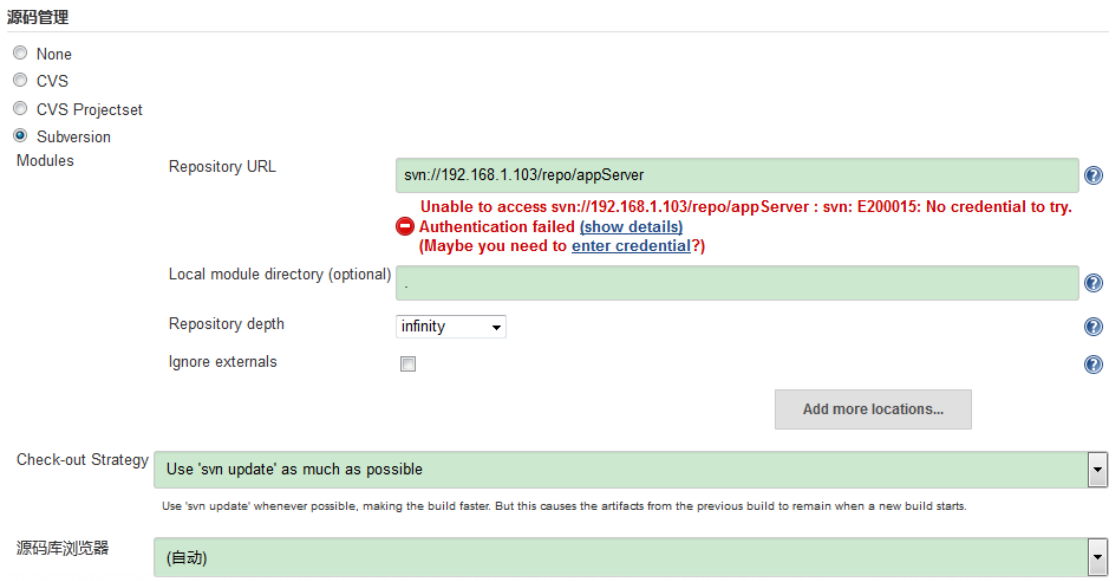
点击 【新建】、【创建一个新任务】(从未创建过任务的情况)

如上图，填写好 item 名称，点击【OK】

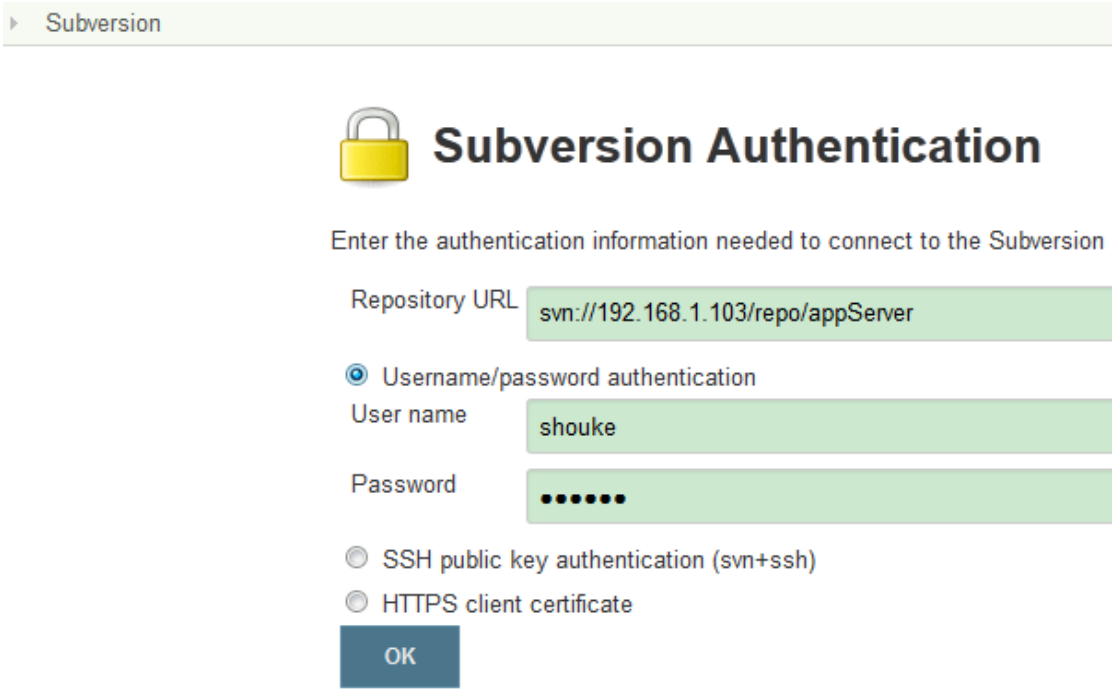
代码结构如下：



选择 Subversion,填写版本库代码 url

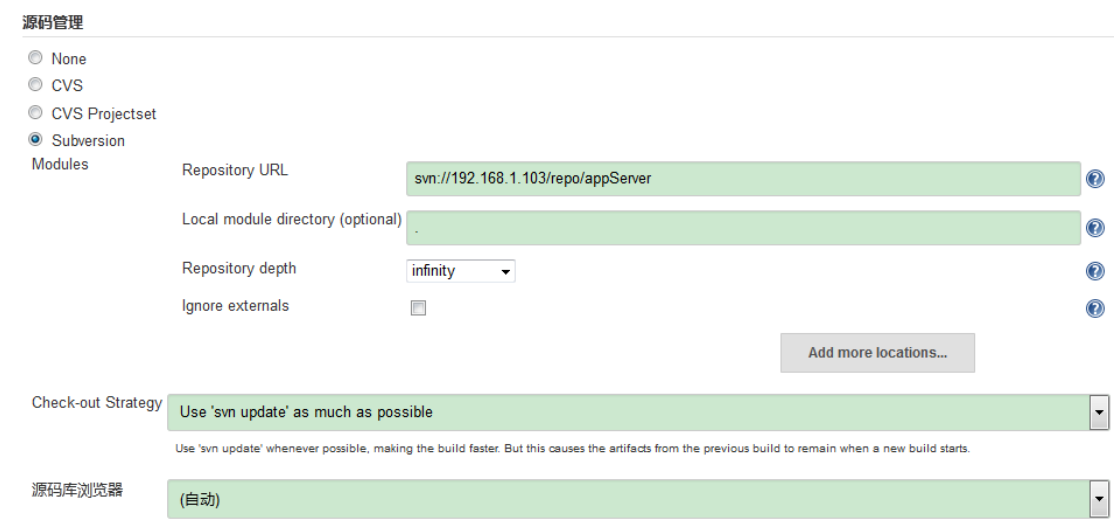


如上，提示 No credential,点击 enter credential,打开如下界面

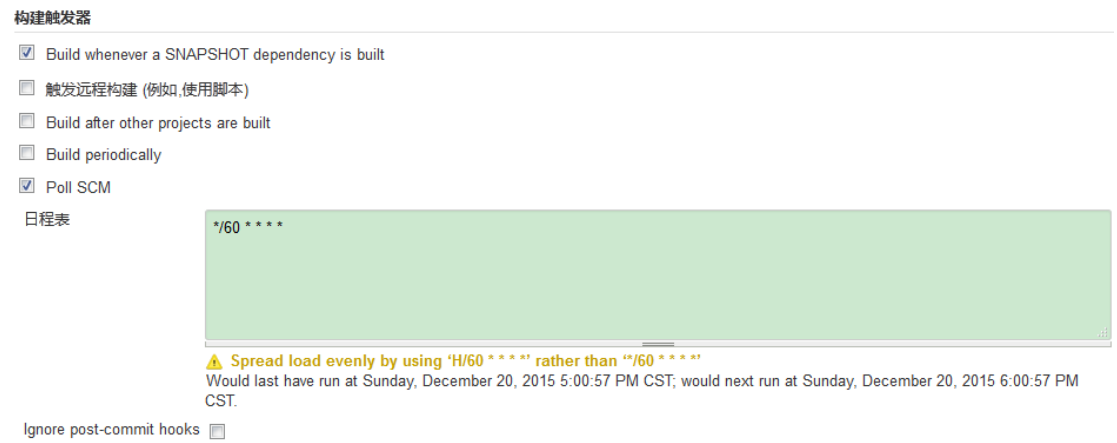


如上，填写代码库所在 url 及用户名称和密码，点击【OK】提交

返回到刚才的页面，刷新，重新填写，结果如下



构建触发器



说明：

1）Poll SCM：定时检查源码变更（根据 SCM 软件的版本号），如果有更新就 checkout 最新 code 下来，然后执行构建动作。

2）Build periodically：按给定周期，定时构建（它不管源码是否发生变化）

示例：

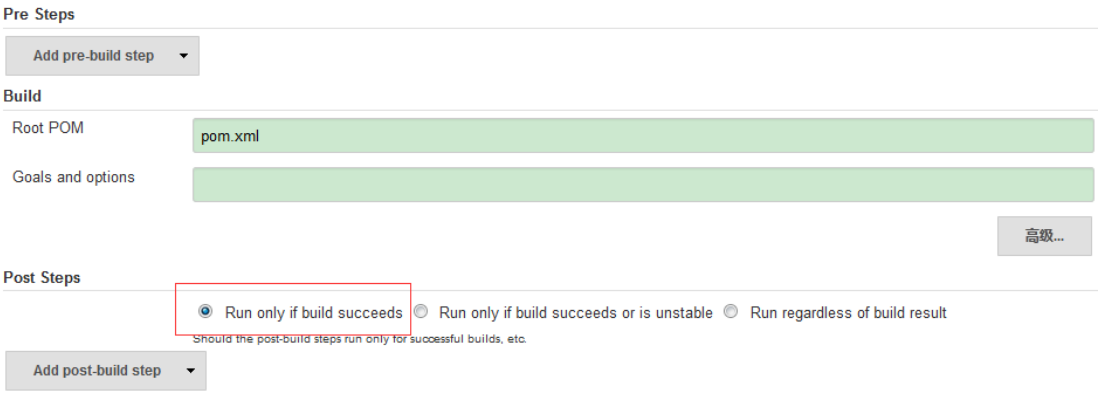
*/60 * * * *　（意为每 60 分钟检查一次源码变化）

0 2 * * *　（每天 2:00 执行一次构建）

这里和 linux crontab 文件配置是一致的。

参考连接：

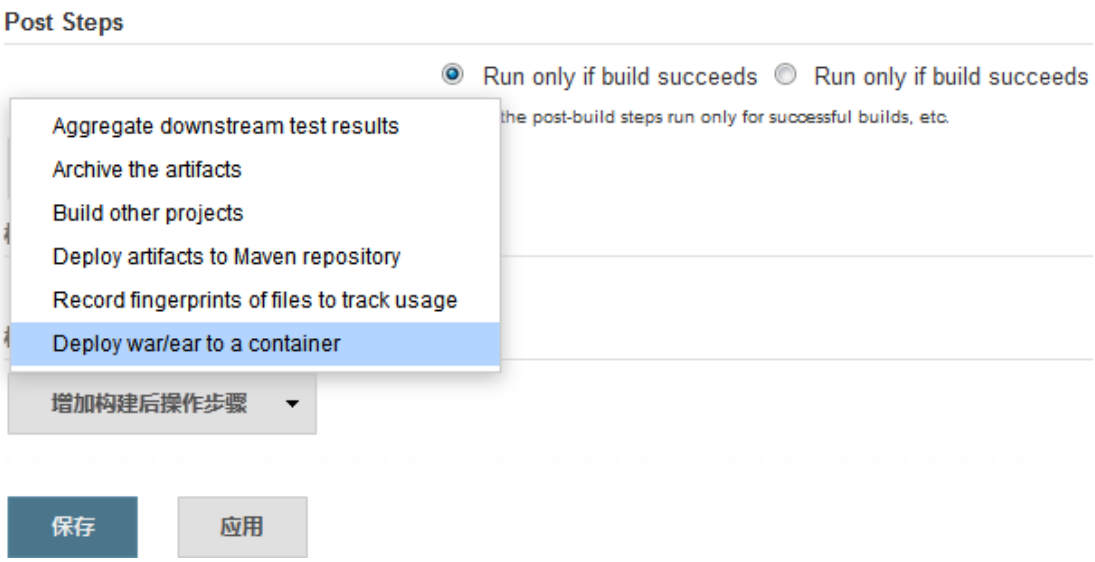
http://www.scmgalaxy.com/scm/setting-up-the-cron-jobs-in-jenkins-using-build-periodically-scheduling-the-jenins-job.html



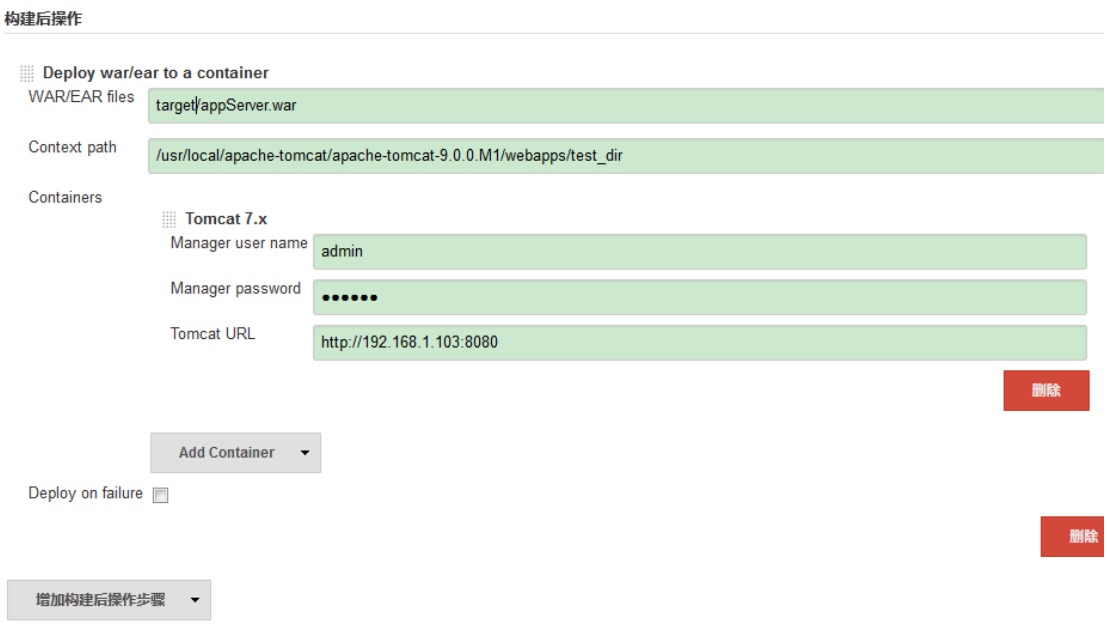

```
[root@localhost workspace]# pwd
/root/.jenkins/jobs/test_project1/workspace
[root@localhost workspace]# ll
total 56
-rw-r-----. 1 root root 16629 Dec 20 17:21 pom.xml
-rw-r-----. 1 root root  3235 Dec 20 17:21 readme.txt
drwxr-x---. 2 root root  4096 Dec 20 17:21 review
drwxr-x---. 4 root root  4096 Dec 20 17:21 src
drwxr-x---. 8 root root  4096 Dec 20 17:21 target
-rw-r-----. 1 root root 16664 Dec 20 17:21 版本变更记录.txt
```

注意：这里的 pom 设置是有讲究的，参考连接：
http://my.oschina.net/u/260244/blog/318755#OSC_h3_16

如上，Post steps,选择仅 build 成功时才运行 Post Steps



如上，点击【增加构建后操作步骤】，选择 Deploy war/ear to a container,设置远程发布项目



说明：

1) 构建时会在目录：/root/.jenkins/jobs/item_name/workspace/target 下生成 filename.war 文件，本例中为：/root/.jenkins/jobs/test_project1/workspace/target/appServer.war

2) WAR/EAR files：填写.war、.ear 文件所在的相对路径

3) Context Path：填写要发布至远程服务器的位置，通常是 tomcat 的 webapps

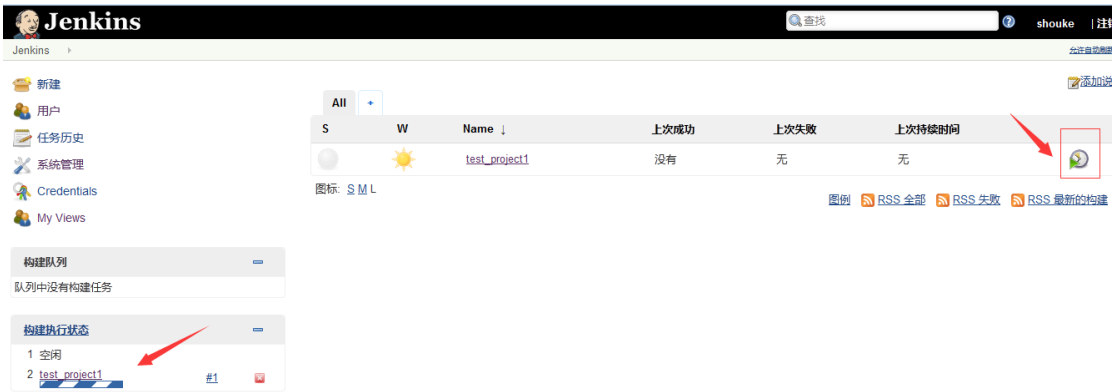
4) 通常不勾选【Deploy on failure】,即构建失败则不发布

5) 这里也可以用 Publish over SSH 来实现远程发布，参考连接：http://jdkleo.iteye.com/blog/2159844

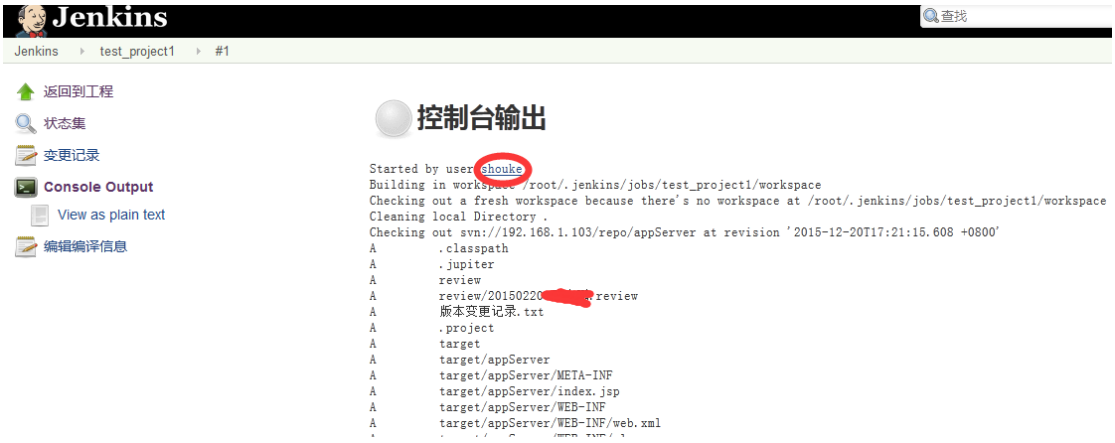
如上，点击 Add Contianer,可以选择容器类型，这里选择 Tomcat 7.x,然后填写入 Tomcat 管理员(具有 manager-gui 角色的 tomcat 用户)，密码，Tomcat 连接

最后提交，如下

如下，点击右侧按钮，开始第一次构建



点击连接查看 Console Output



如下，第一次会根据 pom.xml 下载相关文件

```
Parsing POMs
Discovered a new module com.idcq.appServer:appServer appserver Maven Webapp
Modules changed, recalculating dependency graph
[workspace] $ /usr/local/java/jdk1.8.0_65//bin/java -cp /root/.jenkins/plugins/maven-plugin/WEB-INF/lib/maven31-agent-1.5.jar:/usr/local
/maven/apache-maven-3.3.9/boot/plexus-classworlds-2.5.2.jar:/usr/local/maven/apache-maven-3.3.9/conf/logging
jenkins.maven3.agent.Maven31Main /usr/local/maven/apache-maven-3.3.9/ /usr/local/apache-tomcat/apache-tomcat-9.0.0.M1/webapps/jenkins
/WEB-INF/lib/remoting-2.53.2.jar /root/.jenkins/plugins/maven-plugin/WEB-INF/lib/maven31-interceptor-1.5.jar /root/.jenkins/plugins
/maven-plugin/WEB-INF/lib/maven3-interceptor-commons-1.5.jar 37438
<===[JENKINS REMOTING CAPACITY]===>channel started
Executing Maven:  -B -f /root/.jenkins/jobs/test_project1/workspace/pom.xml package
[INFO] Scanning for projects...
[WARNING]
[WARNING] Some problems were encountered while building the effective model for com.idcq.appServer:appServer:war:0.0.1-
SNAPSHOT
[WARNING] 'dependencies.dependency.(groupId:artifactId:type:classifier)' must be unique: org.apache.lucene:lucene-
analyzers-common:jar -> duplicate declaration of version 4.5.0 @ line 307, column 13
[WARNING] 'build.plugins.plugin.version' for org.apache.maven.plugins:maven-compiler-plugin is missing. @ line 16,
column 12
[WARNING]
[WARNING] It is highly recommended to fix these problems because they threaten the stability of your build.
[WARNING]
[WARNING] For this reason, future Maven versions might no longer support building such malformed projects.
[WARNING]
[INFO]
[INFO] ------------------------------------------------------------------------
[INFO] Building appserver Maven Webapp 0.0.1-SNAPSHOT
[INFO] ------------------------------------------------------------------------
[INFO] Downloading: https://nexus.codehaus.org/content/repositories/codehaus-snapshots/org/apache/maven/plugins/maven-resources-plugin
/2.6/maven-resources-plugin-2.6.pom
[INFO] Downloading: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-resources-plugin/2.6/maven-resources-plugin-
2.6.pom
```