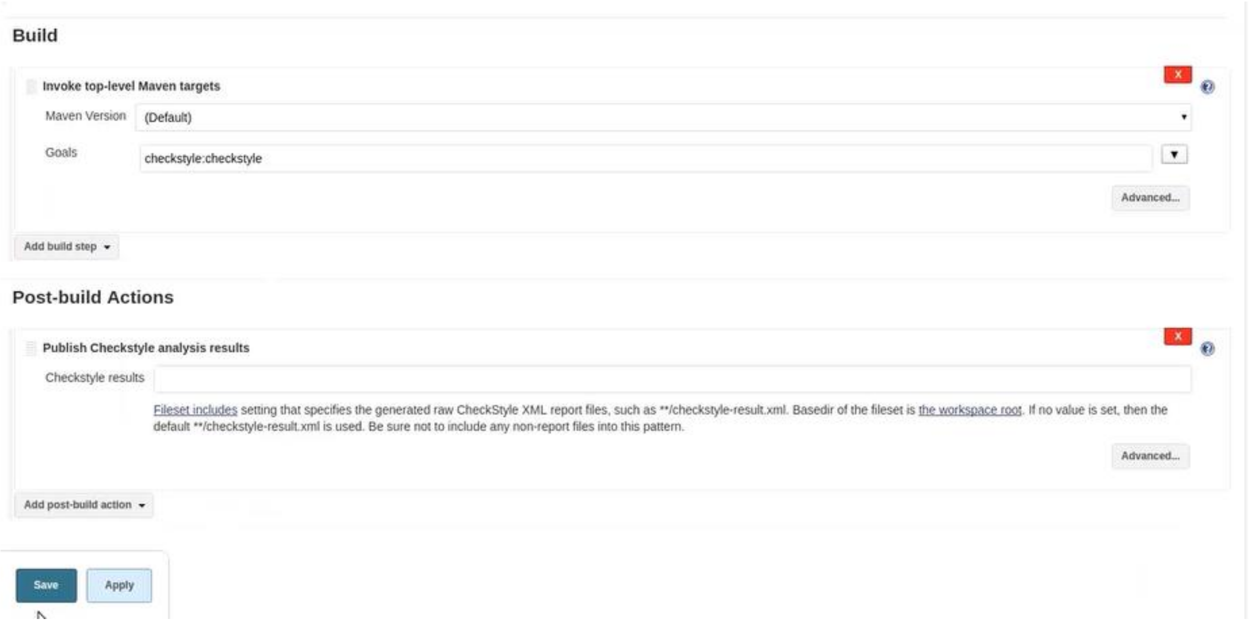
# Continuos Delivery setup on QA and Prod Servers

- SO we are going to create 4 jobs for our continuous delivery project here.
- We need Jenkins on one Ec2 ubuntu server
- QA Tomcat server on one EC2 centos Server
- Prod Tomcat server on one EC2 centos Server

## Check Style code analysis Job configuration : (Job 1)

- We need plug in called checkstyle needs to be installed.
- We have to run at least 2 times this job to get graph



Build

Invoke top-level Maven targets

Maven Version: (Default)

Goals: checkstyle:checkstyle

Post-build Actions

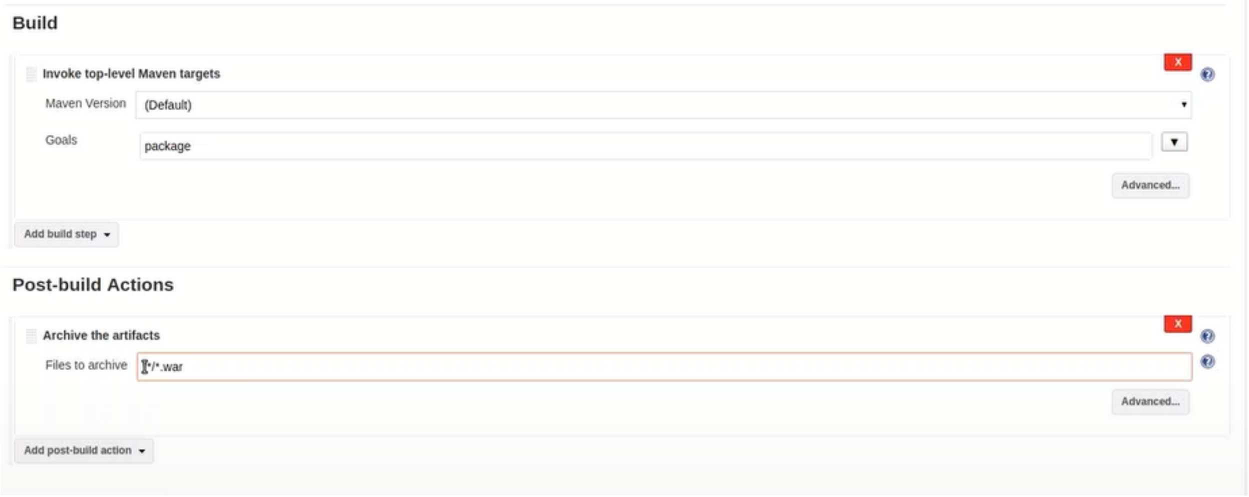
Publish Checkstyle analysis results

Checkstyle results:

Fileset includes setting that specifies the generated raw CheckStyle XML report files, such as **/checkstyle-result.xml. Basedir of the fileset is the workspace root. If no value is set, then the default **/checkstyle-result.xml is used. Be sure not to include any non-report files into this pattern.

## Package Job Configuration : (Job 2 )

- Here we are going to get artifact to our workspace.
- We need archive artifact plug in needs to be installed for this job.



Build

Invoke top-level Maven targets

Maven Version: (Default)

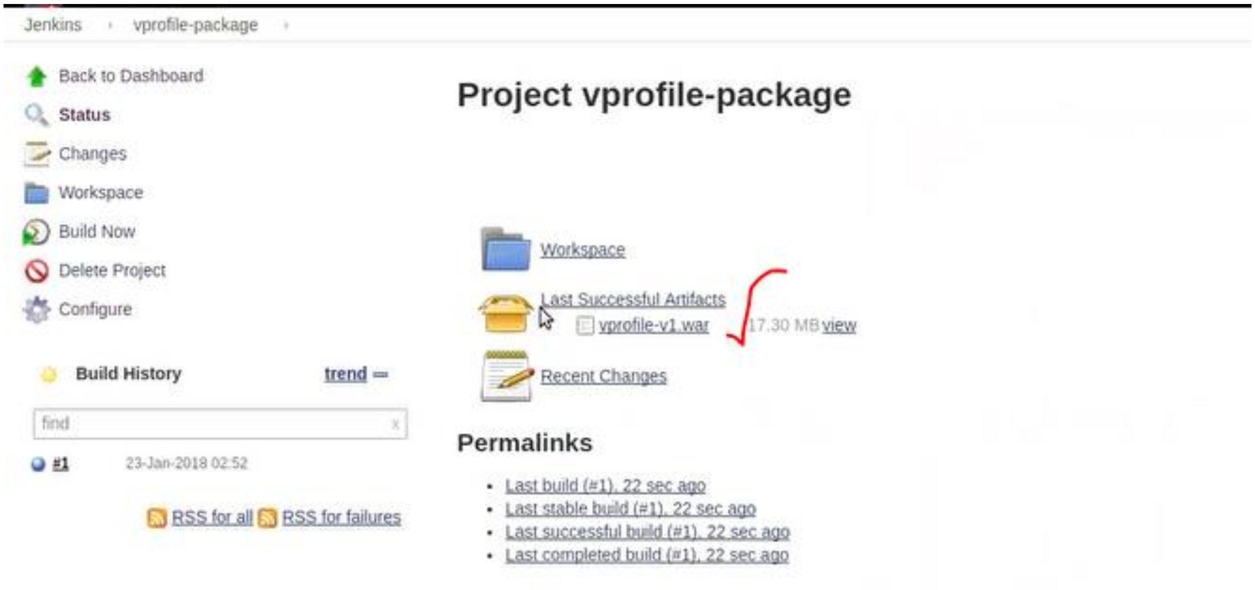
Goals: package

Post-build Actions

Archive the artifacts

Files to archive: */*.war

- ➢ We can verify the artifact under our job workspace like below



Jenkins › vprofile-package ›

Project vprofile-package

Workspace

Last Successful Artifacts

vprofile-v1.war 17.30 MB view

Recent Changes

Permalinks

- Last build (#1), 22 sec ago
- Last stable build (#1), 22 sec ago
- Last successful build (#1), 22 sec ago
- Last completed build (#1), 22 sec ago

Build History trend

#1 23-Jan-2018 02:52

- ➢ Here we can download manually this artifact and upload into tomcat servers using manager window manually and we can do like this. We can deploy manually here for first time.
- ➢ But we are not going to do this in our continuous delivery process so we have to follow below process

## Continuos Delivery setup on QA and Prod Servers

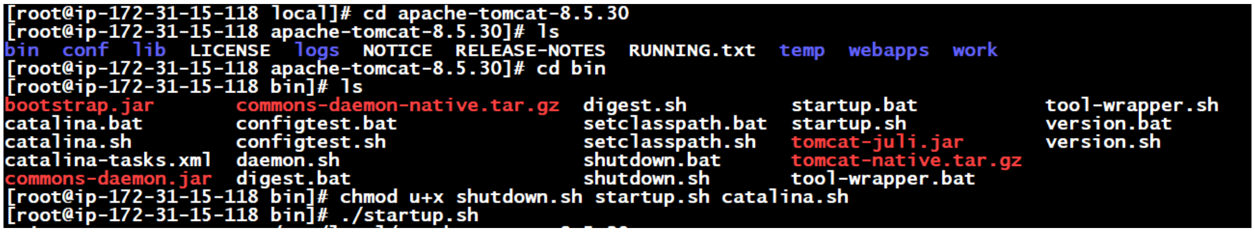
- ➢ Tomcat setup on your ec2 instamce (centos/6) - 2 servers need here for 2 environments.
- ➢ Login to our ec2 instance with normal user
- ❖ sudo -i
- ❖ yum search java
- ❖ Here we can identify all the versions of java.

- yum install -y java-1.8.0-openjdk.x86_64
- yum install –y wget unzip
- wget [http://redrockdigimark.com/apachemirror/tomcat/tomcat-8/v8.5.30/bin/apache-tomcat-8.5.30.zip](http://redrockdigimark.com/apachemirror/tomcat/tomcat-8/v8.5.30/bin/apache-tomcat-8.5.30.zip)
- wget [http://redrockdigimark.com/apachemirror/tomcat/tomcat-8/v8.5.31/bin/apache-tomcat-8.5.31.zip](http://redrockdigimark.com/apachemirror/tomcat/tomcat-8/v8.5.31/bin/apache-tomcat-8.5.31.zip)

- mv apache-tomcat-8.5.30.zip /usr/local
- cd /usr/local
- unzip apache-tomcat-8.5.30.zip

If you want to remove zip file you can remove using rm –rf command

- ls
- cd apache-tomcat-8.5.30
- cd bin
- ls



```
[root@ip-172-31-15-118 local]# cd apache-tomcat-8.5.30
[root@ip-172-31-15-118 apache-tomcat-8.5.30]# ls
bin  conf  lib  LICENSE  logs  NOTICE  RELEASE-NOTES  RUNNING.txt  temp  webapps  work
[root@ip-172-31-15-118 apache-tomcat-8.5.30]# cd bin
[root@ip-172-31-15-118 bin]# ls
bootstrap.jar        commons-daemon-native.tar.gz  digest.sh         startup.bat           tool-wrapper.sh
catalina.bat         configtest.bat                setclasspath.bat  startup.sh            version.bat
catalina.sh          configtest.sh                 setclasspath.sh   tomcat-juli.jar       version.sh
catalina-tasks.xml   daemon.sh                     shutdown.bat      tomcat-native.tar.gz
commons-daemon.jar   digest.bat                    shutdown.sh       tool-wrapper.bat
[root@ip-172-31-15-118 bin]# chmod u+x shutdown.sh startup.sh catalina.sh
[root@ip-172-31-15-118 bin]# ./startup.sh
```

- chmod u+x shutdown.sh startup.sh catalina.sh
- ./startup.sh
- cd ..

While using Tomcat server when ever you are getting some errors means unable to start or unable to login what ever the error is the trouble shoot should start from ligs folder. Always this is the first step to check. Why means we wil change lot of setings inside of tomcat those changes may lead to give some errors thos we can identify logs folder

- cd logs
- ls
- less catalina.out

Here am going to see the startup message when server doing startup.

Using following commands we can check wether Tomcat process is running or not in my system.

- ps -ef | grep tomcat

By using below command we can check what are the ports are running currently in my system so that I can identify port number 8080 for Tomcat server.

- netstat -antp
- netstat -antp | grep 8080

Now 8080 is running successfully so we have to go to browser and type public ip and with port number 8080 like below

http://52.53.197.110:8080

But here we have to take care fire wall setup in 2 ways.

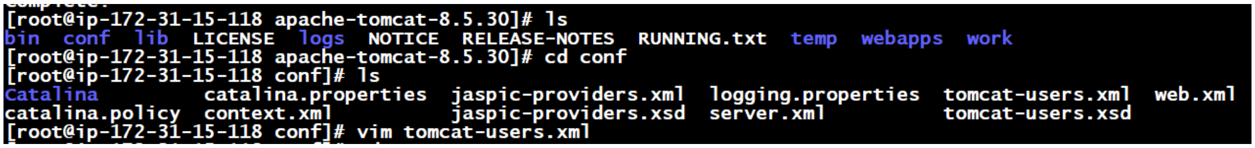
1. We have to enable port number 8080 at ec2 server security group
2. We have to disable firewall in iptables for centos like below

- service iptables status
- service iptables stop

http://52.53.197.110:8080

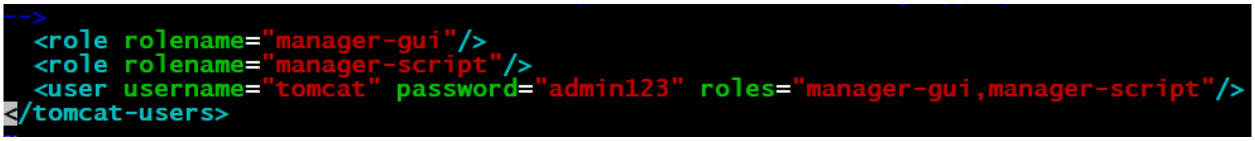
Now I can able see the home page of tomcat, but when we try to click on manager button we are unable to login since we don't have credentials to login that we have to setup under users folder.

- cd ..
- yum install vim



```
[root@ip-172-31-15-118 apache-tomcat-8.5.30]# ls
bin  conf  lib  LICENSE  logs  NOTICE  RELEASE-NOTES  RUNNING.txt  temp  webapps  work
[root@ip-172-31-15-118 apache-tomcat-8.5.30]# cd conf
[root@ip-172-31-15-118 conf]# ls
Catalina         catalina.properties  jaspic-providers.xml  logging.properties  tomcat-users.xml  web.xml
catalina.policy  context.xml          jaspic-providers.xsd  server.xml          tomcat-users.xsd
[root@ip-172-31-15-118 conf]# vim tomcat-users.xml
```

- ls
- cd conf
- ls
- vim tomcat-users.xml



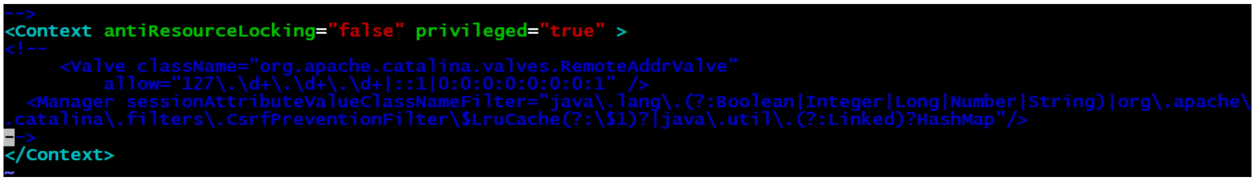
```
-->
  <role rolename="manager-gui"/>
  <role rolename="manager-script"/>
  <user username="tomcat" password="admin123" roles="manager-gui,manager-script"/>
</tomcat-users>
```

One more security setting we have to do,
When you do ifconfig we are going to have 2 interfaces one is actual interface and second one is loopback interface like 127.0.0.1, so by default most of the services only wil listen from the local address it is not going to listen from loopback address what is mean, if you connect from remotely you will access application with this actual interface by default it is going to be denoy that.

Most of the services like Tomcat Mongo DB MySqland so many other servers going to listen local address means locally you can connect them not from remotely. So Tomcat also have similar set up and we want to disable that we can do following steps.

- ifconfig
- cd webapps
- cd manager

- ls
- cd META-INF
- ls
- vim context.xml



```
-->
<Context antiResourceLocking="false" privileged="true" >
<!--
    <Valve className="org.apache.catalina.valves.RemoteAddrValve"
           allow="127\.\d+\.\d+\.\d+|::1|0:0:0:0:0:0:0:1" />
  <Manager sessionAttributeValueClassNameFilter="java\.lang\.(?:Boolean|Integer|Long|Number|String)|org\.apache\
.catalina\.filters\.CsrfPreventionFilter\$LruCache(?:\$1)?|java\.util\.(?:Linked)?HashMap"/>
-->
</Context>
~
```

- cd ../..
- cd ..
- cd bin
- ls
- ./shutdown.sh
- cd ..
- ./startup.sh
- cd bin
- ./startup.sh

Am able to login Manager page with my user id and password in tomcat url.

Now am going to deploy war file Tomcat in diff ways like manually or from Jenkins job.

We have to create new job in Jenkins and going have artifact from previous job and deploying into Tomcat.

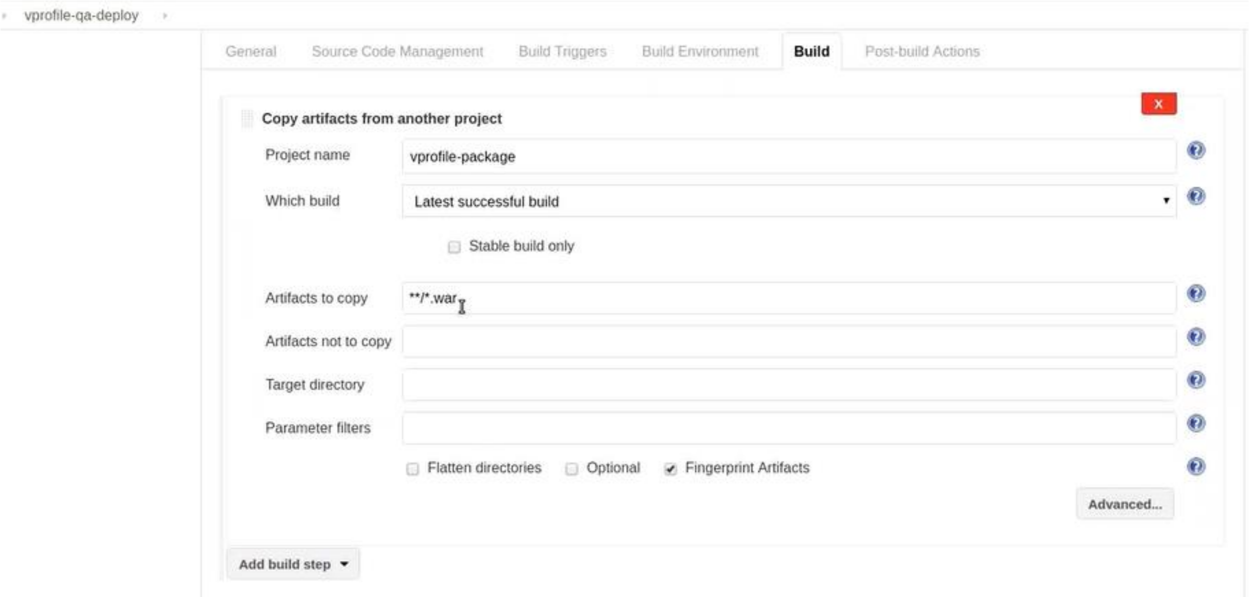
We need to install two plugins below mentioned ones

- Copy artifact
- Deploy to container

And now we can set new job and do the following setup for deployment to Tomcat server.

**Deploy into QA – Env Job : (job 3)**

- We need to install copy artifact plug in and deployer to container plugin for this deployment job.
- Under Build step we have to select below job.


vprofile-qa-deploy

**Copy artifacts from another project**

Project name: vprofile-package

Which build: Latest successful build

□ Stable build only

Artifacts to copy: **/*.war

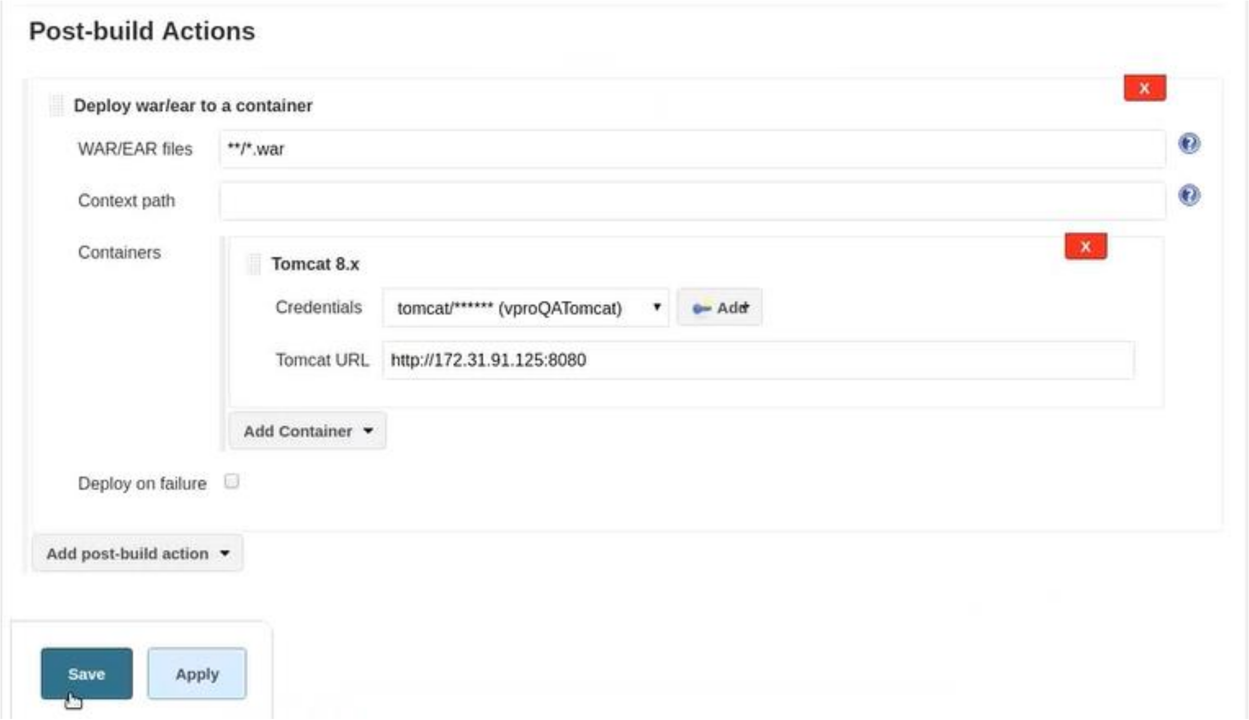
Artifacts not to copy:

Target directory:

Parameter filters:

□ Flatten directories □ Optional ☑ Fingerprint Artifacts

- Under Post build actions we have to select below job


## Post-build Actions

**Deploy war/ear to a container**

WAR/EAR files: **/*.war

Context path:

Containers:

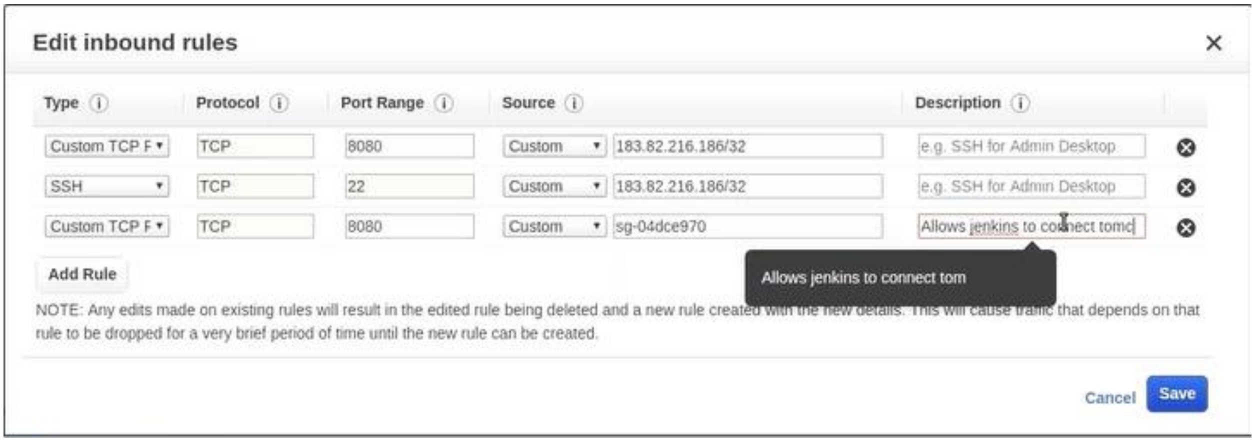
**Tomcat 8.x**

Credentials: tomcat/****** (vproQATomcat)

Tomcat URL: http://172.31.91.125:8080

Deploy on failure □

If Jenkins not able to push means we have to give permission to push war file to Tomcat like below



Edit inbound rules

| Type | Protocol | Port Range | Source | | Description |
|---|---|---|---|---|---|
| Custom TCP F | TCP | 8080 | Custom | 183.82.216.186/32 | e.g. SSH for Admin Desktop |
| SSH | TCP | 22 | Custom | 183.82.216.186/32 | e.g. SSH for Admin Desktop |
| Custom TCP F | TCP | 8080 | Custom | sg-04dce970 | Allows jenkins to connect tomc |

NOTE: Any edits made on existing rules will result in the edited rule being deleted and a new rule created with the new details. This will cause traffic that depends on that rule to be dropped for a very brief period of time until the new rule can be created.

- Now we can run this job and we can go to our browser and verify the application

**Deploy into Prod – Env Job :**

So we are going to copy same job from QA job and just replacing with new tomcat server private ip address.

One more Ec2 centos server needs to be create and install tomcat and try to configure same job like QA job.

Here we can deploy this build once approved manually after deploying successfully into QA in a pipeline.

So for this we need to create pipeline project with all 4 jobs.

We need to install build pipeline plugin for this job and do the below configuration, i.e called continuous delivery pipeline project.

Then we are going to setup our all four jobs in a downstream and upstream jobs the order is

Source code analysis job

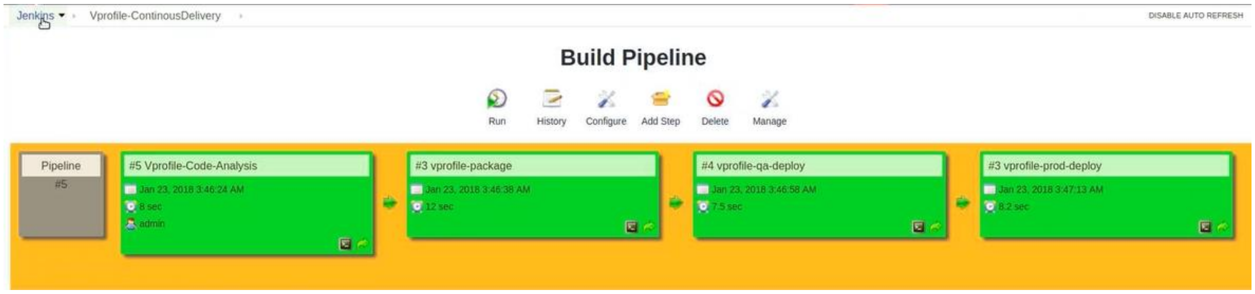
Vprofile – package job

Vprofile – Deploy – QA

Vprofile – Deploy – Prod

Jobs.

Only thing is inside of vprofile – Deploy-QA job in post build actions we have to select step called manually deploy other projects but remaining projects we have to call only build other projects since we are looking approval for prod job in pipeline.



Build Pipeline

Pipeline
#5

#5 Vprofile-Code-Analysis
Jan 23, 2018 3:46:24 AM
8 sec
admin

#3 vprofile-package
Jan 23, 2018 3:46:38 AM
12 sec

#4 vprofile-qa-deploy
Jan 23, 2018 3:46:58 AM
7.5 sec

#3 vprofile-prod-deploy
Jan 23, 2018 3:47:13 AM
8.2 sec

Continuous delivery is done using Jenkins in build and release style.