Install Jenkins via Apache Tomcat on Top of Linux

1. Create AWS EC2 Instance

Amazon Linux AMI 2018.03.0 (HVM), SSD Volume Type - ami-0ad42f4f66f6c1cc9

Amazon Linux
Free tier eligible

The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.

Root device type: ebs   Virtualization type: hvm

Select

64-bit (x86)

2. Allow All traffic for this EC2 instance.

Type ⓘ	Protocol ⓘ	Port Range ⓘ	Source ⓘ		Description ⓘ
All traffic ▼	All	0 - 65535	Anywhere ▼	0.0.0.0/0, ::/0	e.g. SSH for Admin Desktop

3. Login to EC2 user with default user ec2-user

Turn into root

#sudo su –

```
[ec2-user@ip-172-31-22-47 ~]$ sudo su -
Last login: Thu Mar  7 13:11:07 UTC 2019 on pts/0
[root@satyam ~]#
```

4. How to checking Java version

#java -version

```
[root@satyam ~]# java -version
java version "1.7.0_201"
OpenJDK Runtime Environment (amzn-2.6.16.0.78.amzn1-x86_64 u201-b00)
OpenJDK 64-Bit Server VM (build 24.201-b00, mixed mode)
[root@satyam ~]#
```

5. Remove the java

#yum remove java –y

```
[root@satyam ~]# yum remove java -y
Loaded plugins: priorities, update-motd, upgrade-helper
Resolving Dependencies
--> Running transaction check
---> Package java-1.7.0-openjdk.x86_64 1:1.7.0.201-2.6.16.0.78.amzn1 will be erased
```

6. Install java from binary

#cd /opt

wget --no-cookies --no-check-certificate --header "Cookie: gpw_e24=http%3A%2F%2Fwww.oracle.com%2F; oraclelicense=accept-securebackup-cookie" "https://download.oracle.com/otn-pub/java/jdk/8u201-b09/42970487e3af4f5aa5bca3f542482c60/jdk-8u201-linux-x64.tar.gz"

```
[root@satyam opt]#
[root@satyam opt]# wget --no-cookies --no-check-certificate --header "Cookie: gpw_e24=http%3A%2F%2Fwww.oracle.com%2F; oraclelicense=accept-securebackup-cooki
e" "https://download.oracle.com/otn-pub/java/jdk/8u201-b09/42970487e3af4f5aa5bca3f542482c60/jdk-8u201-linux-x64.tar.gz"
--2019-03-07 13:15:26--  https://download.oracle.com/otn-pub/java/jdk/8u201-b09/42970487e3af4f5aa5bca3f542482c60/jdk-8u201-linux-x64.tar.gz
Resolving download.oracle.com (download.oracle.com)... 23.50.90.75
Connecting to download.oracle.com (download.oracle.com)|23.50.90.75|:443... connected.
```

7. Untar the java packages

   #tar -xvf jdk-8u201-linux-x64.tar.gz

```
[root@satyam opt]#
[root@satyam opt]# tar -xvf jdk-8u201-linux-x64.tar.gz
jdk1.8.0_201/
jdk1.8.0_201/javafx-src.zip
```

8. Check the current folder

   #ls -ltr

```
[root@satyam opt]# ls -ltr
total 187332
drwxr-xr-x 7 uucp  143        4096 Dec 15 19:48 jdk1.8.0_201
-rw-r--r-- 1 root root 191817140 Dec 18 18:11 jdk-8u201-linux-x64.tar.gz
drwxr-xr-x 5 root root        4096 Mar  7 13:14 aws
[root@satyam opt]#
```

9. Set the java path

   #cd /opt/jdk1.8.0_201

```
[root@satyam jdk1.8.0_201]# pwd;ls -ltr
/opt/jdk1.8.0_201
total 25996
-rw-r--r-- 1 uucp 143    108109 Dec 12 09:07 THIRDPARTYLICENSEREADME-JAVAFX.txt
-rw-r--r-- 1 uucp 143   5207434 Dec 12 09:07 javafx-src.zip
-r--r--r-- 1 uucp 143    155002 Dec 15 19:45 THIRDPARTYLICENSEREADME.txt
-r--r--r-- 1 uucp 143       159 Dec 15 19:45 README.html
-r--r--r-- 1 uucp 143        40 Dec 15 19:45 LICENSE
-r--r--r-- 1 uucp 143      3244 Dec 15 19:45 COPYRIGHT
-rw-r--r-- 1 uucp 143  21103945 Dec 15 19:45 src.zip
-rw-r--r-- 1 uucp 143       424 Dec 15 19:45 release
drwxr-xr-x 4 uucp 143      4096 Dec 15 19:45 man
drwxr-xr-x 3 uucp 143      4096 Dec 15 19:45 include
drwxr-xr-x 5 uucp 143      4096 Dec 15 19:45 jre
drwxr-xr-x 5 uucp 143      4096 Dec 15 19:45 lib
drwxr-xr-x 2 uucp 143      4096 Dec 15 19:45 bin
[root@satyam jdk1.8.0_201]#
```

10. Set Java Environment variable

    #export JAVA_HOME="/opt/jdk1.8.0_201"

    #PATH=$JAVA_HOME/bin:$PATH

```
[root@satyam jdk1.8.0_201]#
[root@satyam jdk1.8.0_201]#  export JAVA_HOME="/opt/jdk1.8.0_201"
[root@satyam jdk1.8.0_201]#  PATH=$JAVA_HOME/bin:$PATH
[root@satyam jdk1.8.0_201]#
```

    #echo "export JAVA_HOME="/opt/jdk1.8.0_201"" >> /etc/bashrc

    #echo "PATH=$JAVA_HOME/bin:$PATH" >> /etc/bashrc

    #echo "export JAVA_HOME="/opt/jdk1.8.0_201"" >> /etc/environment

    #echo "PATH=$JAVA_HOME/bin:$PATH" >> /etc/environment

    #source /etc/bashrc

    #source /etc/environment

```
[root@satyam jdk1.8.0_201]# echo "export JAVA_HOME="/opt/jdk1.8.0_201"" >> /etc/bashrc
[root@satyam jdk1.8.0_201]# echo "PATH=$JAVA_HOME/bin:$PATH" >> /etc/bashrc
[root@satyam jdk1.8.0_201]#
[root@satyam jdk1.8.0_201]# echo "export JAVA_HOME="/opt/jdk1.8.0_201"" >> /etc/environment
[root@satyam jdk1.8.0_201]# echo "PATH=$JAVA_HOME/bin:$PATH" >> /etc/environment
[root@satyam jdk1.8.0_201]#
[root@satyam jdk1.8.0_201]# source /etc/bashrc
[root@satyam jdk1.8.0_201]# source /etc/environment
[root@satyam jdk1.8.0_201]#
```

11. Install Apache tomcat9 from binary

    #wget https://archive.apache.org/dist/tomcat/tomcat-9/v9.0.0.M10/bin/apache-tomcat-9.0.0.M10.tar.gz

```
[root@satyam opt]# wget https://archive.apache.org/dist/tomcat/tomcat-9/v9.0.0.M10/bin/apache-tomcat-9.0.0.M10.tar.gz
--2019-03-07 13:45:51--  https://archive.apache.org/dist/tomcat/tomcat-9/v9.0.0.M10/bin/apache-tomcat-9.0.0.M10.tar.gz
Resolving archive.apache.org (archive.apache.org)... 163.172.17.199
Connecting to archive.apache.org (archive.apache.org)|163.172.17.199|:443... connected.
HTTP request sent, awaiting response... 200 OK
```

12. Untar apache tomcat

    # tar -xvf apache-tomcat-9.0.0.M10.tar.gz

```
[root@satyam opt]# tar -xvf apache-tomcat-9.0.0.M10.tar.gz
apache-tomcat-9.0.0.M10/conf/
apache-tomcat-9.0.0.M10/conf/catalina.policy
apache-tomcat-9.0.0.M10/conf/catalina.properties
apache-tomcat-9.0.0.M10/conf/context.xml
apache-tomcat-9.0.0.M10/conf/jaspic-providers.xml
```

13. Move Apache to Tomcat9 folder

    #mv apache-tomcat-9.0.0.M10 tomcat

```
[root@satyam opt]#
[root@satyam opt]# mv apache-tomcat-9.0.0.M10 tomcat9
[root@satyam opt]#
```

14. Go to the below path and remove tomcat-users.xml file

    #cd /opt/tomcat9/conf

```
[root@satyam conf]# rm -rf tomcat-users.xml
[root@satyam conf]#
```

15. Create a file tomcat-users.xml file with below content

    <?xml version='1.0' encoding='utf-8'?>

    <tomcat-users>

      <role rolename="manager-gui"/>

      <role rolename="manager-script"/>

      <role rolename="manager-jmx"/>

      <role rolename="manager-jmx"/>

      <role rolename="admin-gui"/>

      <role rolename="admin-script"/>

      <user username="radical" password="radical" roles="manager-gui,manager-script,manager-jmx,manager-status,admin-gui,admin-script"/>

</tomcat-users>

```
[root@satyam conf]# cat > tomcat-users.xml
<?xml version='1.0' encoding='utf-8'?>
<tomcat-users>
    <role rolename="manager-gui"/>
    <role rolename="manager-script"/>
    <role rolename="manager-jmx"/>
    <role rolename="manager-jmx"/>
    <role rolename="admin-gui"/>
    <role rolename="admin-script"/>
    <user username="radical" password="radical" roles="manager-gui,manager-script,manager-jmx,manager-status,admin-gui,admin-script"/>
</tomcat-users>
^C
[root@satyam conf]#
```

16. Go to the below location location & modify the content of file context.xml

    #cd /opt/tomcat9/webapps/manager/META-INF

```
[root@satyam META-INF]# pwd;ls -lrt
/opt/tomcat9/webapps/manager/META-INF
total 4
-rw-r----- 1 root root 1018 Aug 31  2016 context.xml
[root@satyam META-INF]#
```

<!--

   <Valve className="org.apache.catalina.valves.RemoteAddrValve"

       allow="127\.\d+\.\d+\.\d+|::1|0:0:0:0:0:0:0:1" />

-->

17. Go to below path and restart tomcat

    # cd /opt/tomcat9/bin

    #./startup.sh

```
[root@satyam bin]# ./startup.sh
Using CATALINA_BASE:   /opt/tomcat9
Using CATALINA_HOME:   /opt/tomcat9
Using CATALINA_TMPDIR: /opt/tomcat9/temp
Using JRE_HOME:        /opt/jdk1.8.0_201
Using CLASSPATH:       /opt/tomcat9/bin/bootstrap.jar:/opt/tomcat9/bin/tomcat-juli.jar
Tomcat started.
[root@satyam bin]#
```
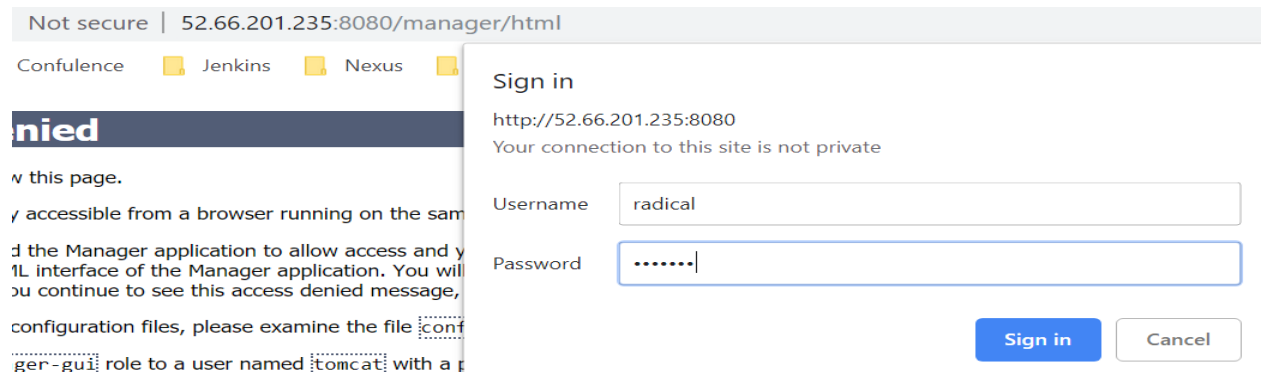
18. Take the public IP of EC2 Instance and hit in browser (below IP is for my referance)

    52.66.201.235:8080

    You will get below page click on Manager APP

Home   Documentation   Configuration   Examples   Wiki   Mailing Lists   Find Help

Apache Tomcat/9.0.0.M10

The Apache Software Foundation
http://www.apache.org/

19. Use user name as radical and password as radical

Not secure | 52.66.201.235:8080/manager/html

Confulence   Jenkins   Nexus

nied

w this page.

y accessible from a browser running on the sam

d the Manager application to allow access and y
ML interface of the Manager application. You wil
ou continue to see this access denied message,

configuration files, please examine the file `conf`

`ger-gui` role to a user named `tomcat` with a

Sign in

http://52.66.201.235:8080
Your connection to this site is not private

| Username | radical |
| Password | •••••• |

Sign in   Cancel

20. Download Jenkins War

 # wget http://updates.jenkins-ci.org/download/war/2.7.3/jenkins.war

```
[root@satyam opt]#  wget http://updates.jenkins-ci.org/download/war/2.7.3/jenkins.war
--2019-03-07 14:12:02--  http://updates.jenkins-ci.org/download/war/2.7.3/jenkins.war
Resolving updates.jenkins-ci.org (updates.jenkins-ci.org)... 52.202.51.185
Connecting to updates.jenkins-ci.org (updates.jenkins-ci.org)|52.202.51.185|:80... connected.
```

21. Once login to Apache tomcat page, check the location of Jenkins.war in you system.

```
[root@ip-172-31-16-84 opt]# ls -ltr
total 263704
-rw-r--r-- 1 root root    9335218 Aug 31  2016 apache-tomcat-9.0.0.M10.tar.gz
-rw-r--r-- 1 root root   68859252 Aug 31  2016 jenkins.war
drwxr-xr-x 7 uucp 143        4096 Dec 15 19:48 jdk1.8.0_201
-rw-r--r-- 1 root root  191817140 Dec 18 18:11 jdk-8u201-linux-x64.tar.gz
drwxr-xr-x 5 root root       4096 Mar  7 12:05 aws
drwxr-xr-x 9 root root       4096 Mar  7 12:16 tomcat9
```

Fill the details and click on deploy

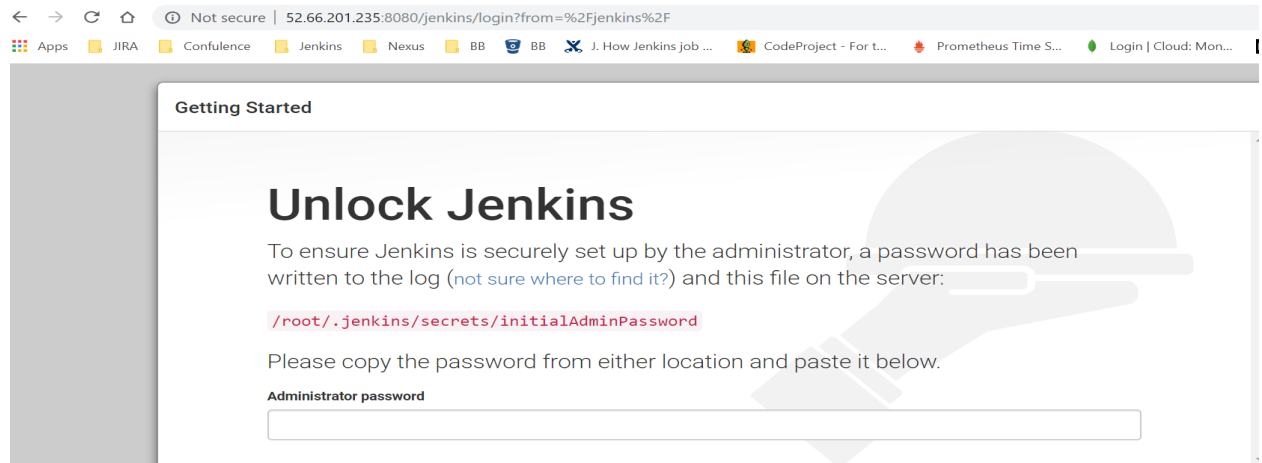| **Deploy**		
Deploy directory or WAR file located on server		
	Context Path (required):	/jenkins
	XML Configuration file URL:	
	WAR or Directory URL:	/opt/jenkins.war
		Deploy

WAR file to deploy

22. You can see the Jenkins has been deployed

Click on /Jenkins ⬚

| /jenkins | None specified | Jenkins v2.7.3 | true | 0 | Start Stop Reload Undeploy |
| | | | | | Expire sessions with idle ≥ 30 minutes |

23. You will be redirected to Jenkins pages

This Jenkins is deployed as web application and middleware is Apache Tomcat on top of Linux ⬚

← → C ⌂   ⓘ Not secure | 52.66.201.235:8080/jenkins/login?from=%2Fjenkins%2F

▦ Apps   ▪ JIRA   ▪ Confluence   ▪ Jenkins   ▪ Nexus   ▪ BB   ▪ BB   ✖ J. How Jenkins job ...   ▪ CodeProject - For t...   ▪ Prometheus Time S...   ● Login | Cloud: Mon...

Getting Started

Unlock Jenkins

To ensure Jenkins is securely set up by the administrator, a password has been written to the log (not sure where to find it?) and this file on the server:

/root/.jenkins/secrets/initialAdminPassword

Please copy the password from either location and paste it below.

Administrator password

24. Execute this on linux to get the password place the passwd

#cat /root/.jenkins/secrets/initialAdminPassword

```
[root@satyam bin]# ./startup.sh
Using CATALINA_BASE:   /opt/tomcat9
Using CATALINA_HOME:   /opt/tomcat9
Using CATALINA_TMPDIR: /opt/tomcat9/temp
Using JRE_HOME:        /opt/jdk1.8.0_201
Using CLASSPATH:       /opt/tomcat9/bin/bootstrap.jar:/opt/tomcat9/bin/tomcat-juli.
jar
Tomcat started.
[root@satyam bin]# cat /root/.jenkins/secrets/initialAdminPassword
91a6da7bba954e41a36656c0c5f8f71b
[root@satyam bin]#
```

25. Create user first time Jenkins will ask you create a new user and this user to admin user of admin