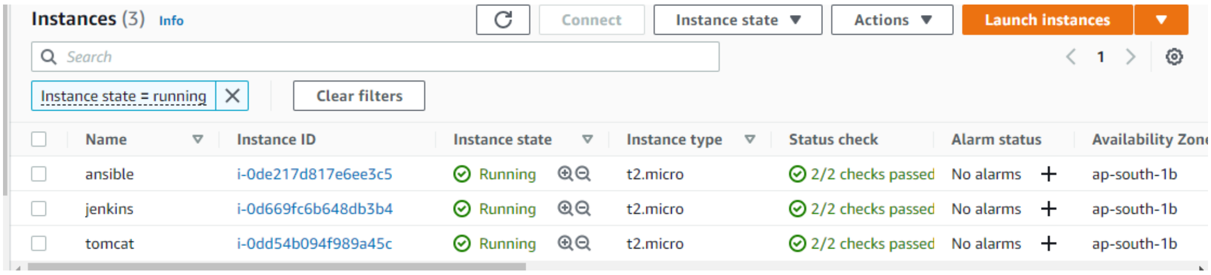
ANSIBLE PROJECT

Prerequisite for project:

1. I installed three VMs in AWS with "t2.micro and AWS Linux 2 AMI" configuration for Jenkins, ansible and tomcat server as below.

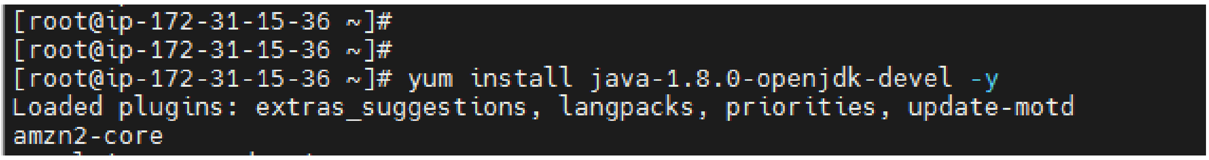


□	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zon
□	ansible	i-0de217d817e6ee3c5	✓ Running	t2.micro	✓ 2/2 checks passed	No alarms +	ap-south-1b
□	jenkins	i-0d669fc6b648db3b4	✓ Running	t2.micro	✓ 2/2 checks passed	No alarms +	ap-south-1b
□	tomcat	i-0dd54b094f989a45c	✓ Running	t2.micro	✓ 2/2 checks passed	No alarms +	ap-south-1b

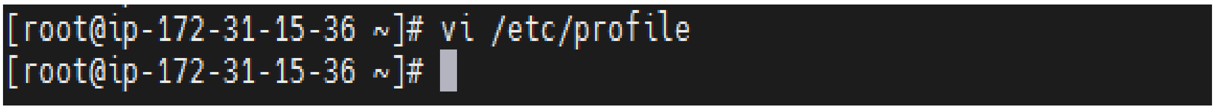
Jenkins server installation steps:

1. Login to Jenkins instance and Install the java. Setup the java path for user profile.

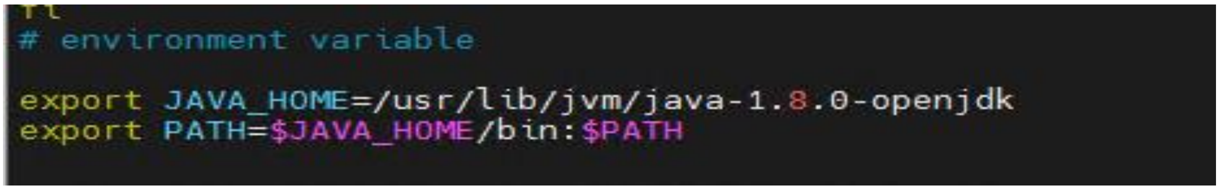
```
yum install java-1.8.0-openjdk-devel
vi  /etc/profile
export JAVA_HOME=/usr/lib/jvm/java-1.8.0-openjdk
export PATH=$JAVA_HOME/bin:$PATH
```



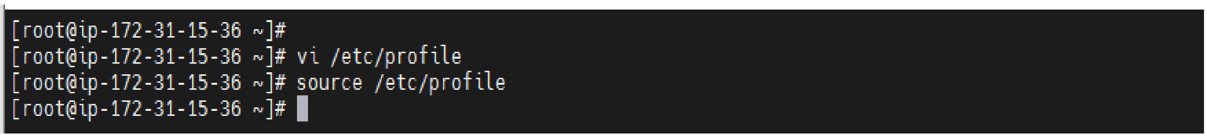
```
[root@ip-172-31-15-36 ~]#
[root@ip-172-31-15-36 ~]#
[root@ip-172-31-15-36 ~]# yum install java-1.8.0-openjdk-devel -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core
```



```
[root@ip-172-31-15-36 ~]# vi /etc/profile
[root@ip-172-31-15-36 ~]#
```



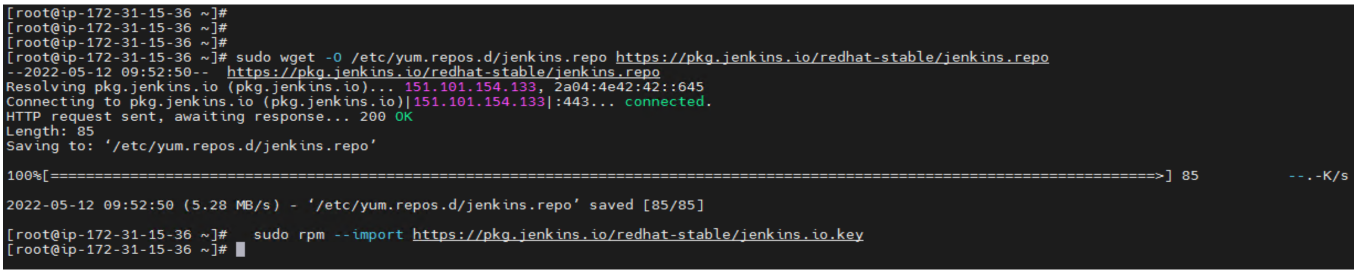
```
# environment variable

export JAVA_HOME=/usr/lib/jvm/java-1.8.0-openjdk
export PATH=$JAVA_HOME/bin:$PATH
```



```
[root@ip-172-31-15-36 ~]#
[root@ip-172-31-15-36 ~]# vi /etc/profile
[root@ip-172-31-15-36 ~]# source /etc/profile
[root@ip-172-31-15-36 ~]#
```

2. Go to URL https://pkg.jenkins.io/redhat-stable/ and copy the below command according to your distribution. Execute the command as per screen shot.

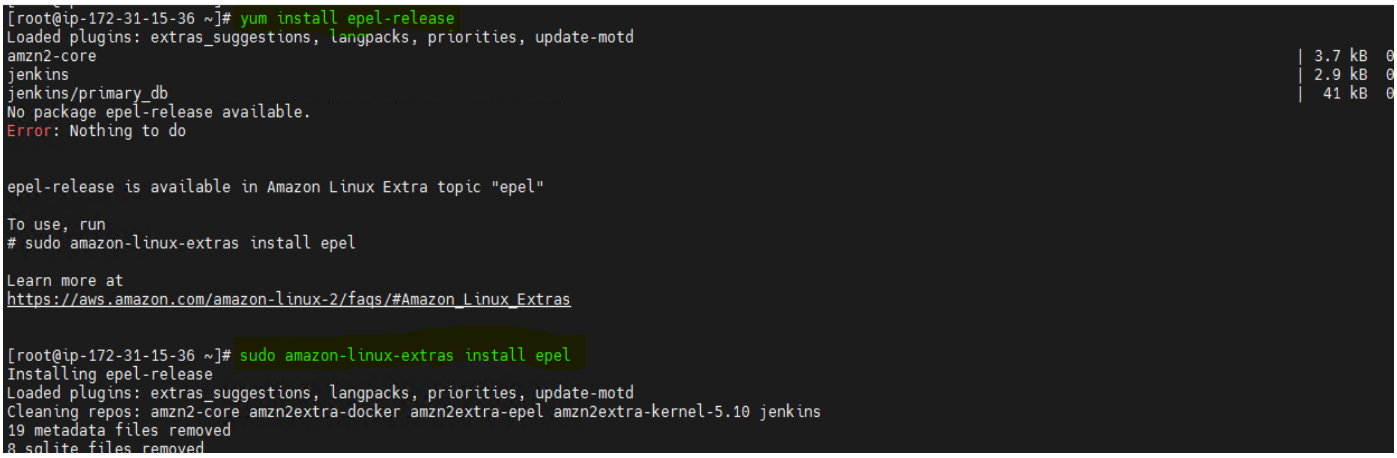
```
sudo wget -O /etc/yum.repos.d/jenkins.repo https://pkg.jenkins.io/redhat-stable/jenkins.repo
sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io.key
```



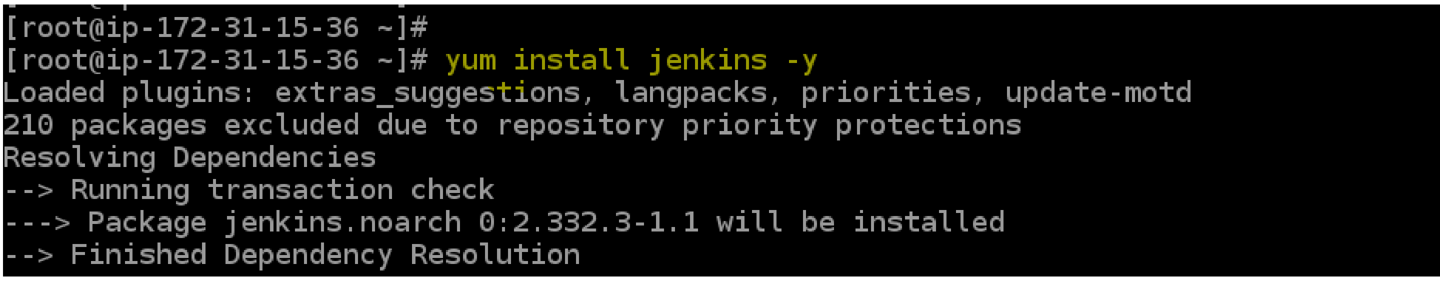
```
[root@ip-172-31-15-36 ~]#
[root@ip-172-31-15-36 ~]#
[root@ip-172-31-15-36 ~]#
[root@ip-172-31-15-36 ~]# sudo wget -O /etc/yum.repos.d/jenkins.repo https://pkg.jenkins.io/redhat-stable/jenkins.repo
--2022-05-12 09:52:50--  https://pkg.jenkins.io/redhat-stable/jenkins.repo
Resolving pkg.jenkins.io (pkg.jenkins.io)... 151.101.154.133, 2a04:4e42:42::645
Connecting to pkg.jenkins.io (pkg.jenkins.io)|151.101.154.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 85
Saving to: '/etc/yum.repos.d/jenkins.repo'

100%[===========================================================================================================>] 85          --.-K/s

2022-05-12 09:52:50 (5.28 MB/s) - '/etc/yum.repos.d/jenkins.repo' saved [85/85]

[root@ip-172-31-15-36 ~]#   sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io.key
[root@ip-172-31-15-36 ~]#
```

3. Install the Jenkins by executing below command.

```
yum install epel-release
sudo amazon-linux-extras install epel
yum install Jenkins –y
```



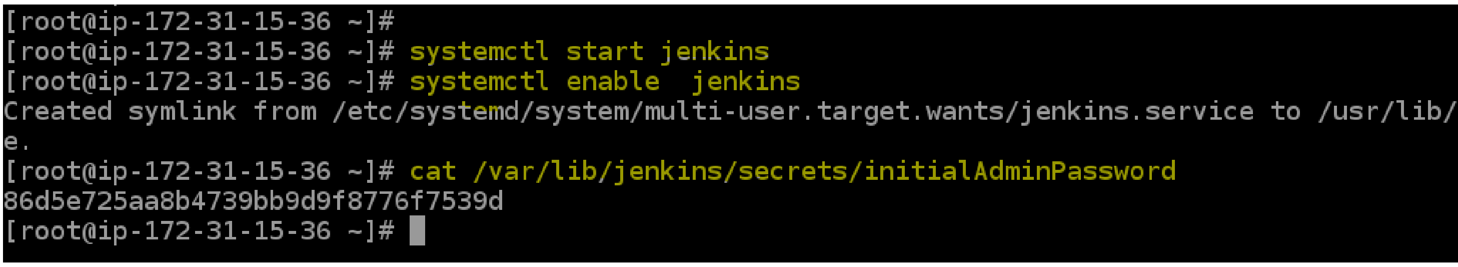
```
[root@ip-172-31-15-36 ~]# yum install epel-release
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core                                                                                                    | 3.7 kB  0
jenkins                                                                                                       | 2.9 kB  0
jenkins/primary_db                                                                                            |  41 kB  0
No package epel-release available.
Error: Nothing to do


epel-release is available in Amazon Linux Extra topic "epel"

To use, run
# sudo amazon-linux-extras install epel

Learn more at
https://aws.amazon.com/amazon-linux-2/faqs/#Amazon_Linux_Extras


[root@ip-172-31-15-36 ~]# sudo amazon-linux-extras install epel
Installing epel-release
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Cleaning repos: amzn2-core amzn2extra-docker amzn2extra-epel amzn2extra-kernel-5.10 jenkins
19 metadata files removed
8 sqlite files removed
```



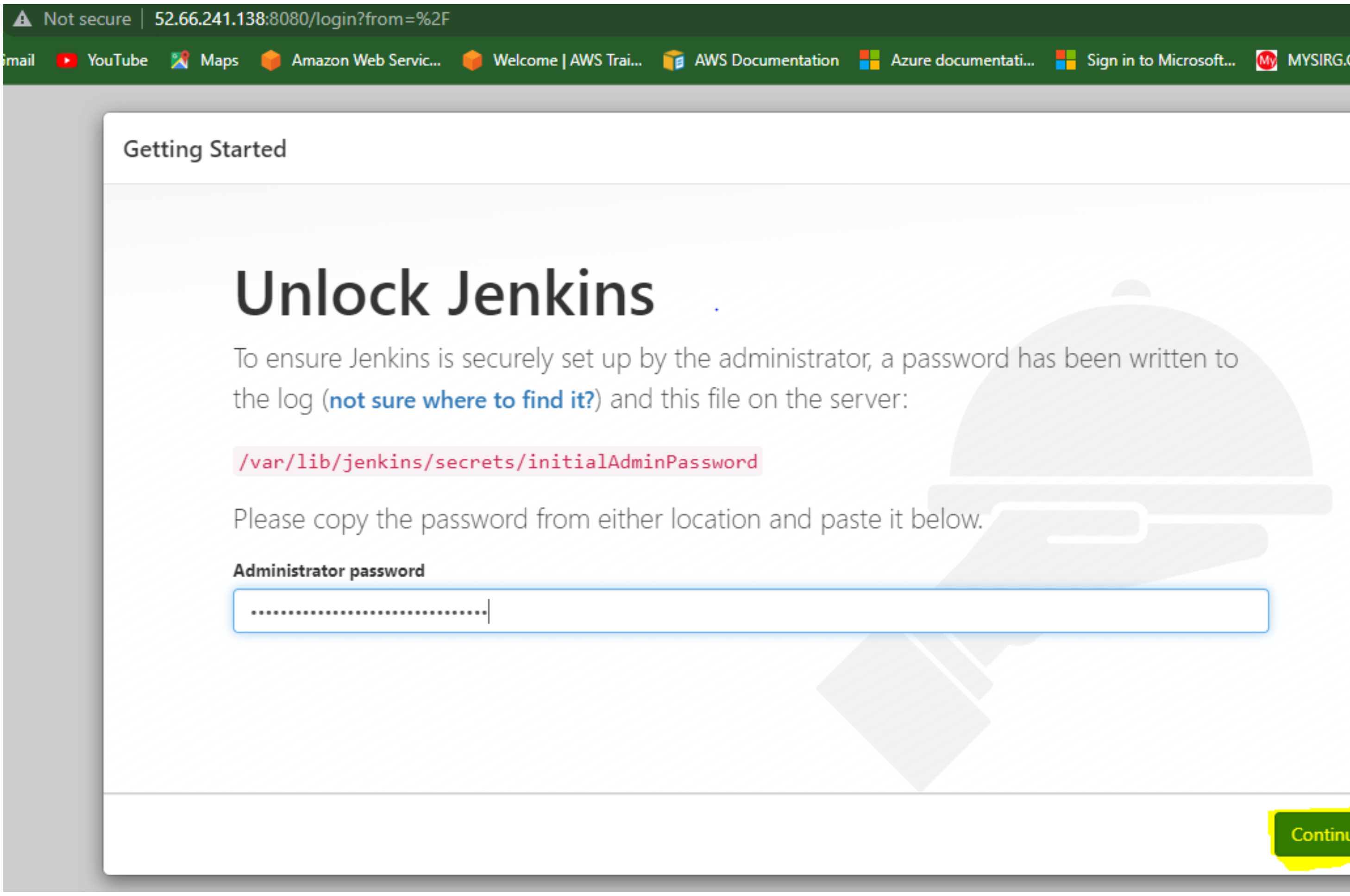
```
[root@ip-172-31-15-36 ~]#
[root@ip-172-31-15-36 ~]# yum install jenkins -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
210 packages excluded due to repository priority protections
Resolving Dependencies
--> Running transaction check
---> Package jenkins.noarch 0:2.332.3-1.1 will be installed
--> Finished Dependency Resolution
```

4. Start and enable Jenkins. Access the Jenkins from URL http://IPADDRESS:8080. Execute the below command for retrieving Jenkins admin password. Enter the admin password in the Jenkins console as per screen shot.

```
Systemctl start Jenkins
Systemctl enable Jenkins
cat /var/lib/jenkins/secrets/initialAdminPassword
```



```
[root@ip-172-31-15-36 ~]#
[root@ip-172-31-15-36 ~]# systemctl start jenkins
[root@ip-172-31-15-36 ~]# systemctl enable  jenkins
Created symlink from /etc/systemd/system/multi-user.target.wants/jenkins.service to /usr/lib/
e.
[root@ip-172-31-15-36 ~]# cat /var/lib/jenkins/secrets/initialAdminPassword
86d5e725aa8b4739bb9d9f8776f7539d
[root@ip-172-31-15-36 ~]# 
```



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:

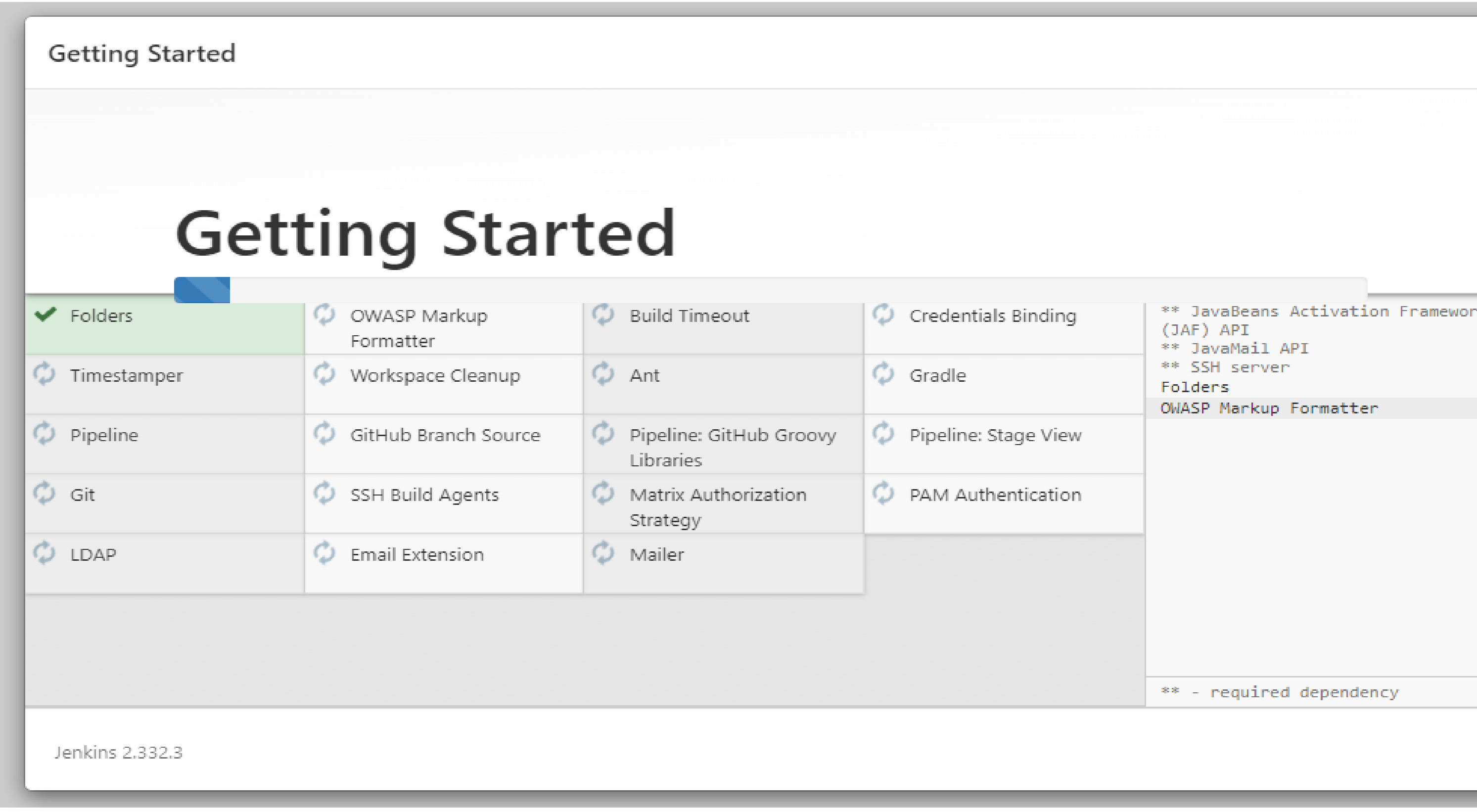
`/var/lib/jenkins/secrets/initialAdminPassword`

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

Administrator password

································

5. Select the “install suggested plugins” option. It will start downloading the suggested plugin automatically. Create the admin user and password for Jenkins server authentication and follow the below screenshot.



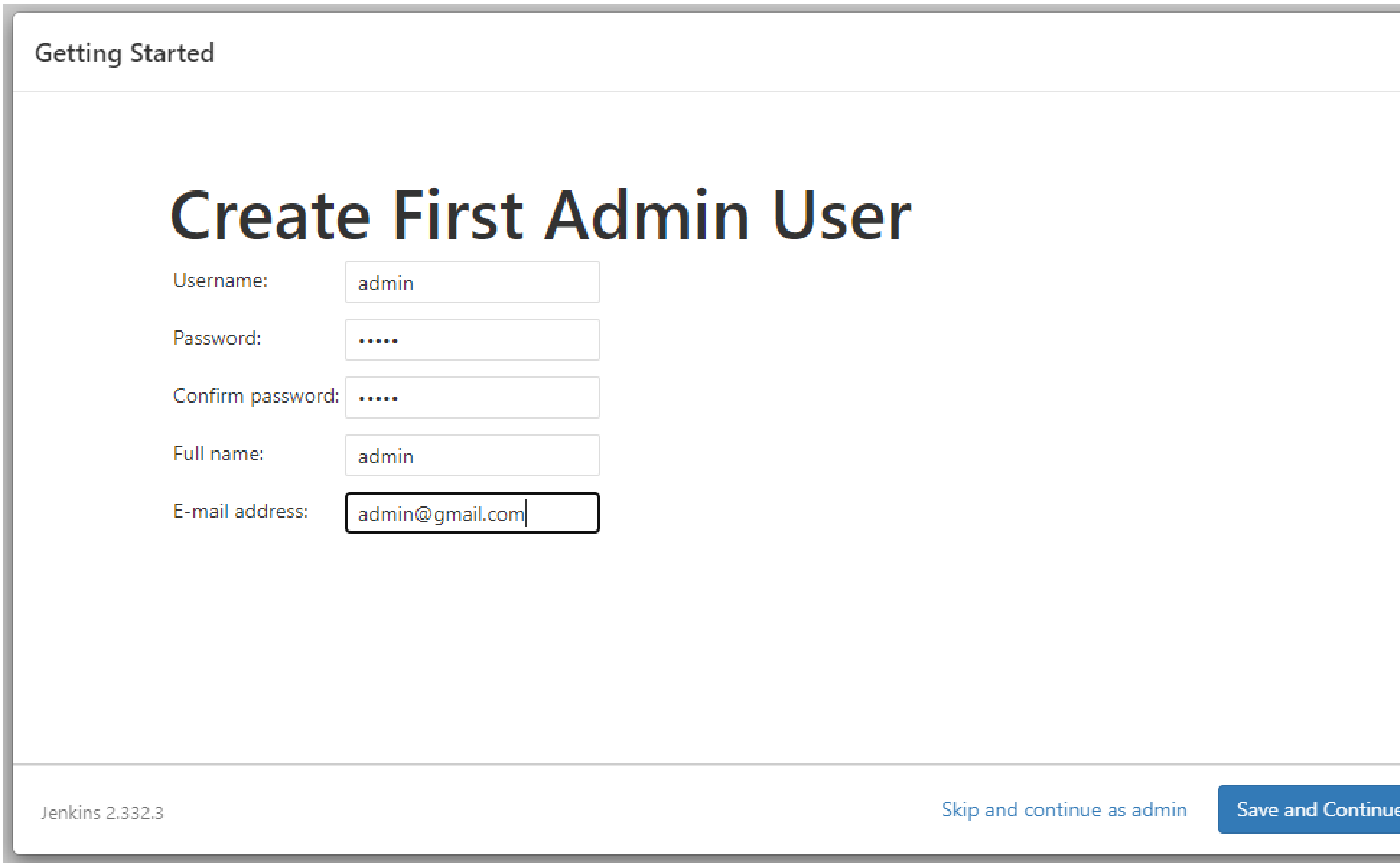
Getting Started

Getting Started

✓ Folders	OWASP Markup Formatter	Build Timeout	Credentials Binding
Timestamper	Workspace Cleanup	Ant	Gradle
Pipeline	GitHub Branch Source	Pipeline: GitHub Groovy Libraries	Pipeline: Stage View
Git	SSH Build Agents	Matrix Authorization Strategy	PAM Authentication
LDAP	Email Extension	Mailer	

```
** JavaBeans Activation Framewor
(JAF) API
** JavaMail API
** SSH server
Folders
OWASP Markup Formatter

** - required dependency
```

Jenkins 2.332.3

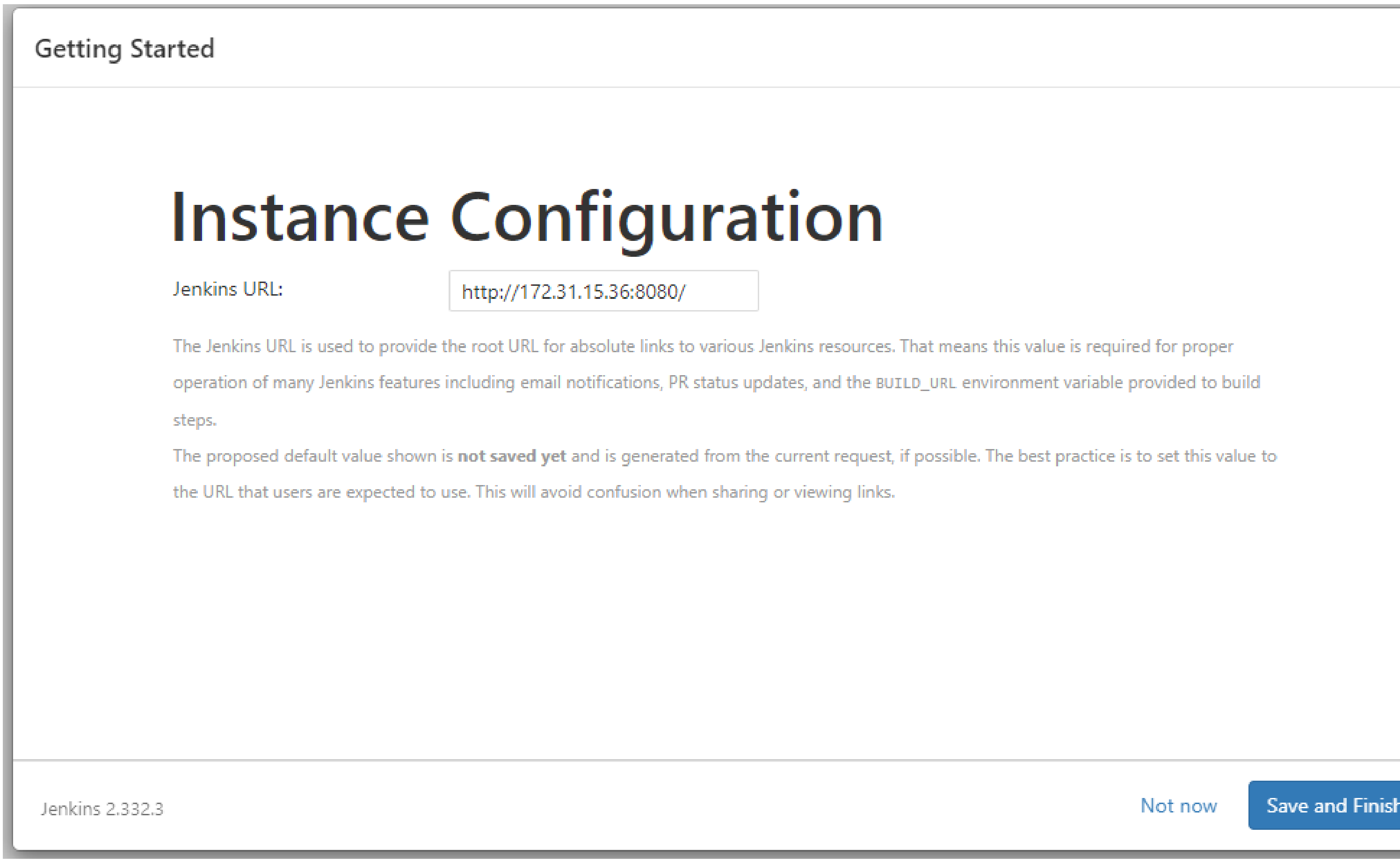


Getting Started

Create First Admin User

Username:	admin
Password:	•••••
Confirm password:	•••••
Full name:	admin
E-mail address:	admin@gmail.com

Jenkins 2.332.3



Getting Started

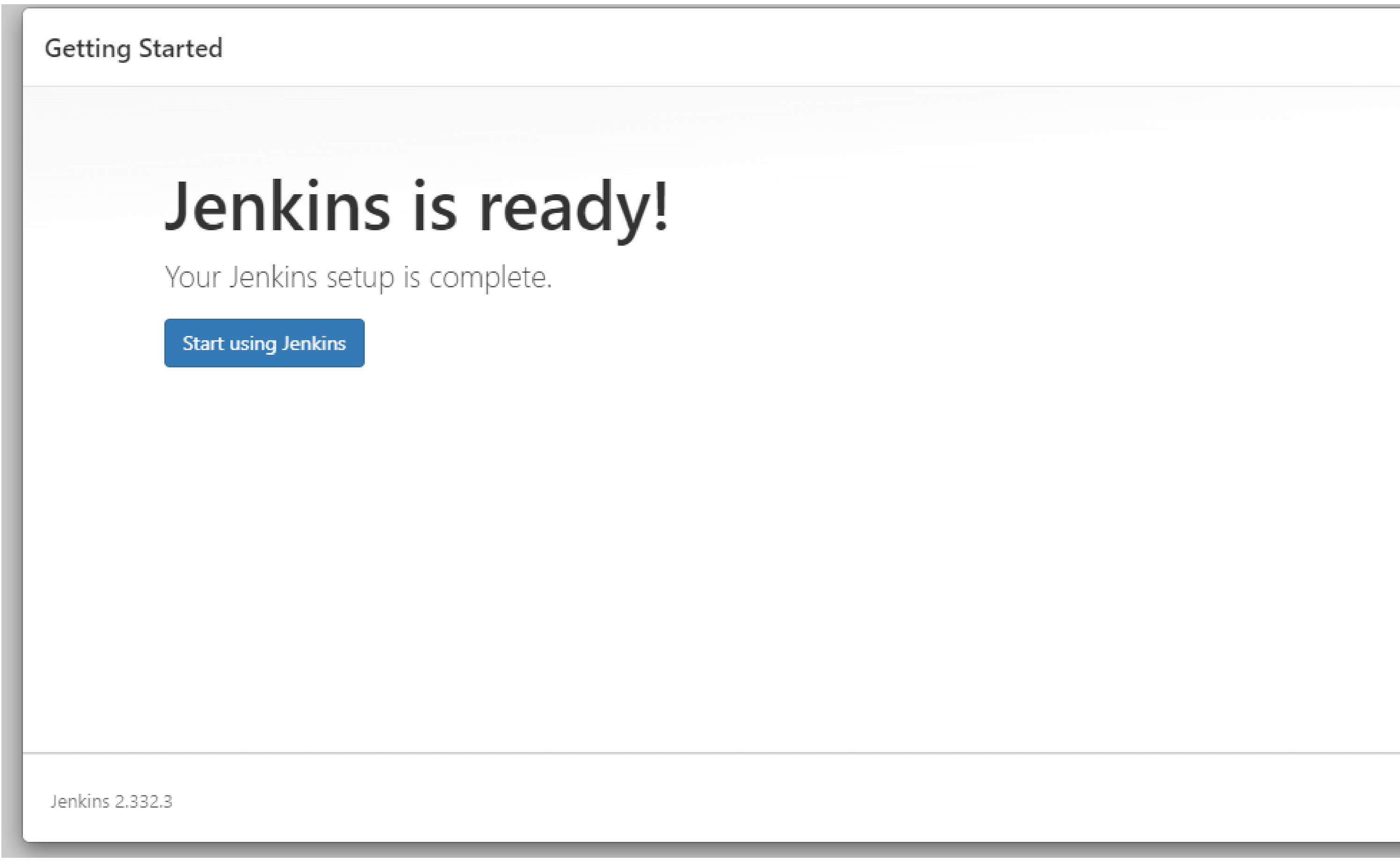
Instance Configuration

Jenkins URL: http://172.31.15.36:8080/

The Jenkins URL is used to provide the root URL for absolute links to various Jenkins resources. That means this value is required for proper operation of many Jenkins features including email notifications, PR status updates, and the `BUILD_URL` environment variable provided to build steps.

The proposed default value shown is **not saved yet** and is generated from the current request, if possible. The best practice is to set this value to the URL that users are expected to use. This will avoid confusion when sharing or viewing links.

Jenkins 2.332.3



Getting Started

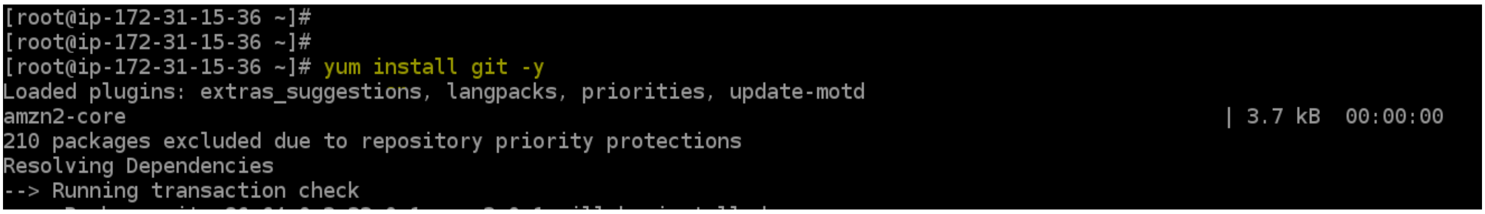
Jenkins is ready!

Your Jenkins setup is complete.

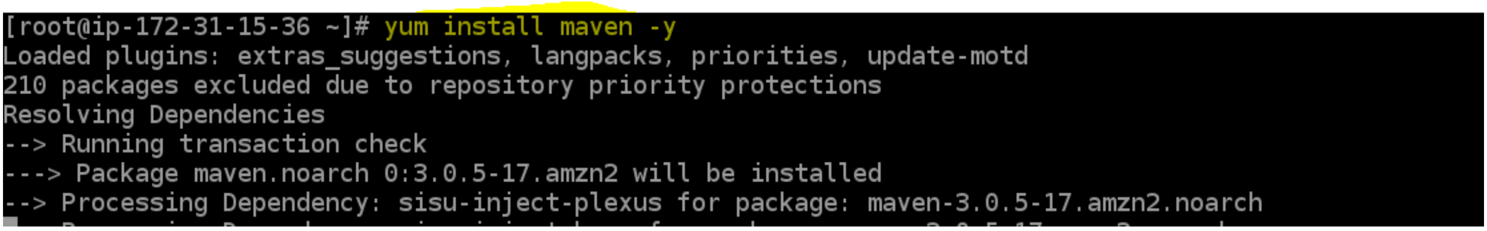
Jenkins 2.332.3

6. Install git and maven in Jenkins server. Get the home path of java, git and maven for global tool configuration.

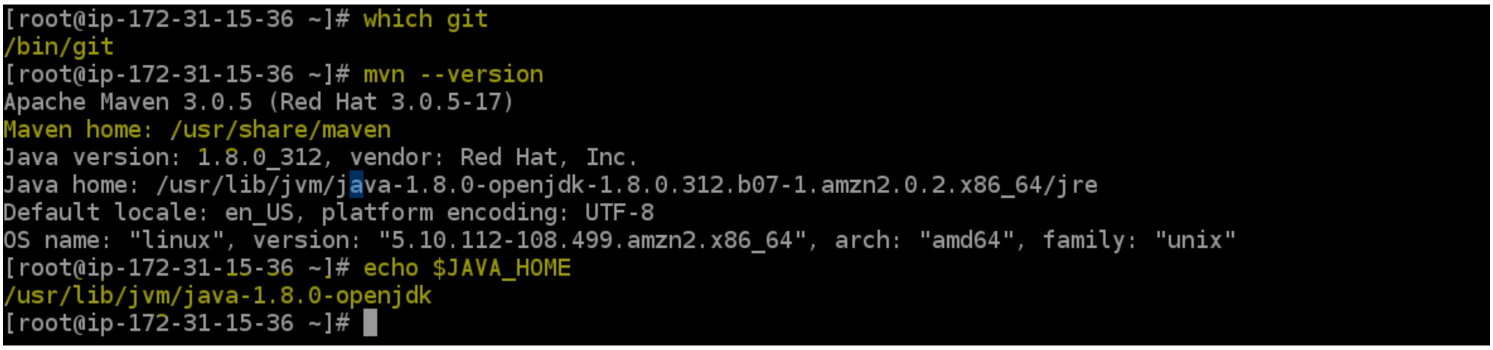
   yum install git –y
   yum install maven –y
   which git
   echo $JAVA_HOME
   mvn --version



```
[root@ip-172-31-15-36 ~]#
[root@ip-172-31-15-36 ~]#
[root@ip-172-31-15-36 ~]# yum install git -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core                                                                                     | 3.7 kB  00:00:00
210 packages excluded due to repository priority protections
Resolving Dependencies
--> Running transaction check
```

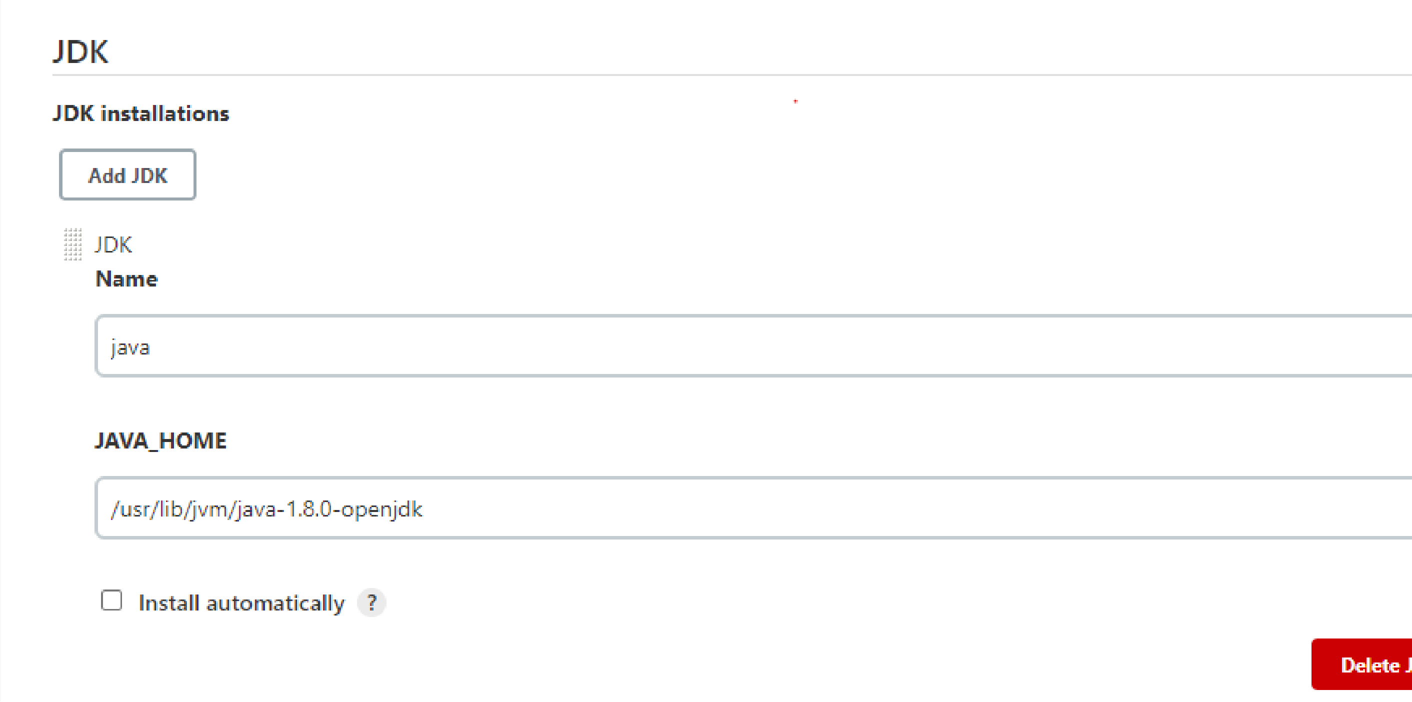


```
[root@ip-172-31-15-36 ~]# yum install maven -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
210 packages excluded due to repository priority protections
Resolving Dependencies
--> Running transaction check
---> Package maven.noarch 0:3.0.5-17.amzn2 will be installed
--> Processing Dependency: sisu-inject-plexus for package: maven-3.0.5-17.amzn2.noarch
```



```
[root@ip-172-31-15-36 ~]# which git
/bin/git
[root@ip-172-31-15-36 ~]# mvn --version
Apache Maven 3.0.5 (Red Hat 3.0.5-17)
Maven home: /usr/share/maven
Java version: 1.8.0_312, vendor: Red Hat, Inc.
Java home: /usr/lib/jvm/java-1.8.0-openjdk-1.8.0.312.b07-1.amzn2.0.2.x86_64/jre
Default locale: en_US, platform encoding: UTF-8
OS name: "linux", version: "5.10.112-108.499.amzn2.x86_64", arch: "amd64", family: "unix"
[root@ip-172-31-15-36 ~]# echo $JAVA_HOME
/usr/lib/jvm/java-1.8.0-openjdk
[root@ip-172-31-15-36 ~]#
```

7. Go to (Manage Jenkins → Global tool configuration) and provide home path for maven, git and JDK. Click on save.



JDK

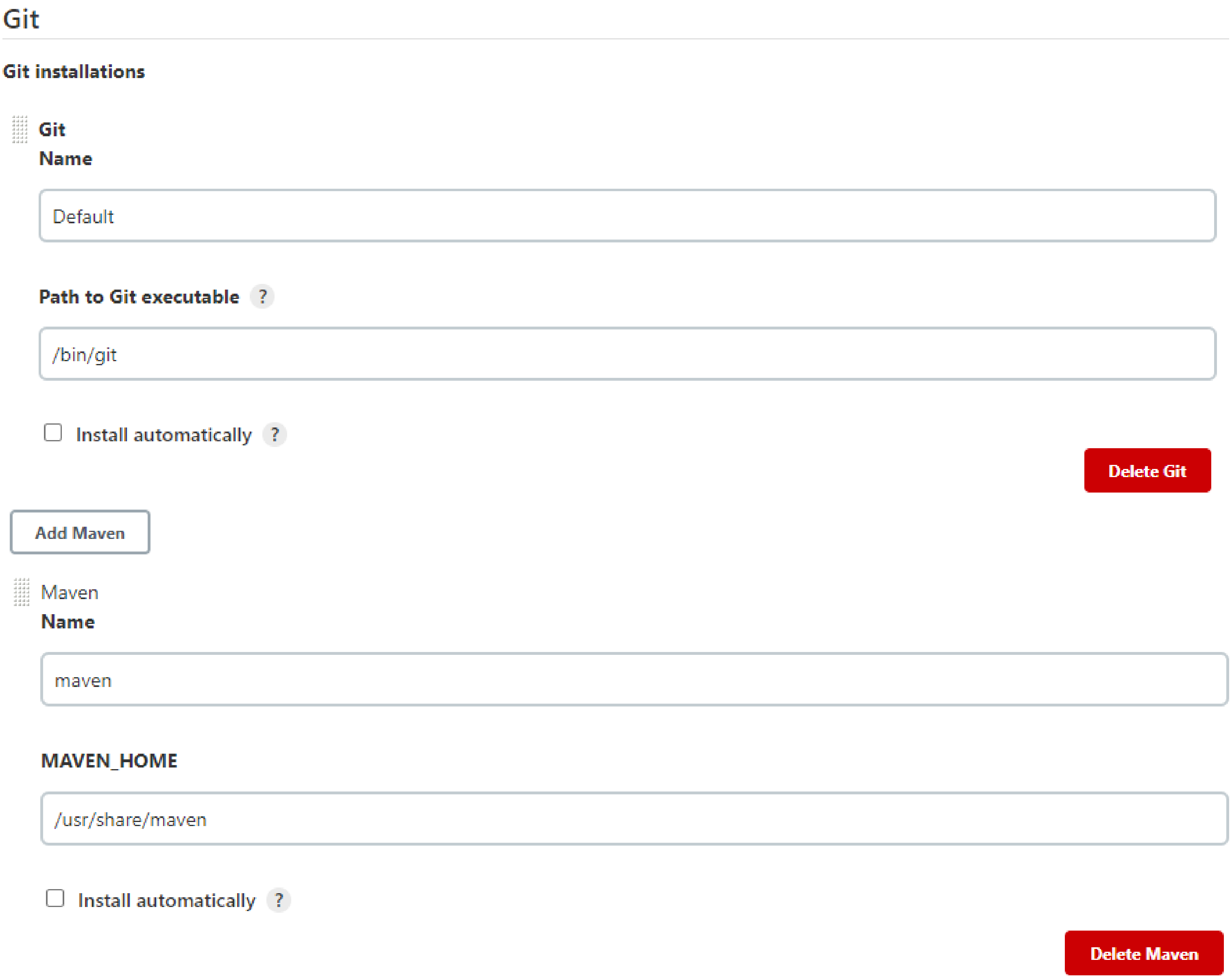
JDK installations

JDK

Name: java

JAVA_HOME: /usr/lib/jvm/java-1.8.0-openjdk

☐ Install automatically



Git

Git installations

Git

Name

Default

Path to Git executable ?

/bin/git

□ Install automatically ?

Maven

Name

maven

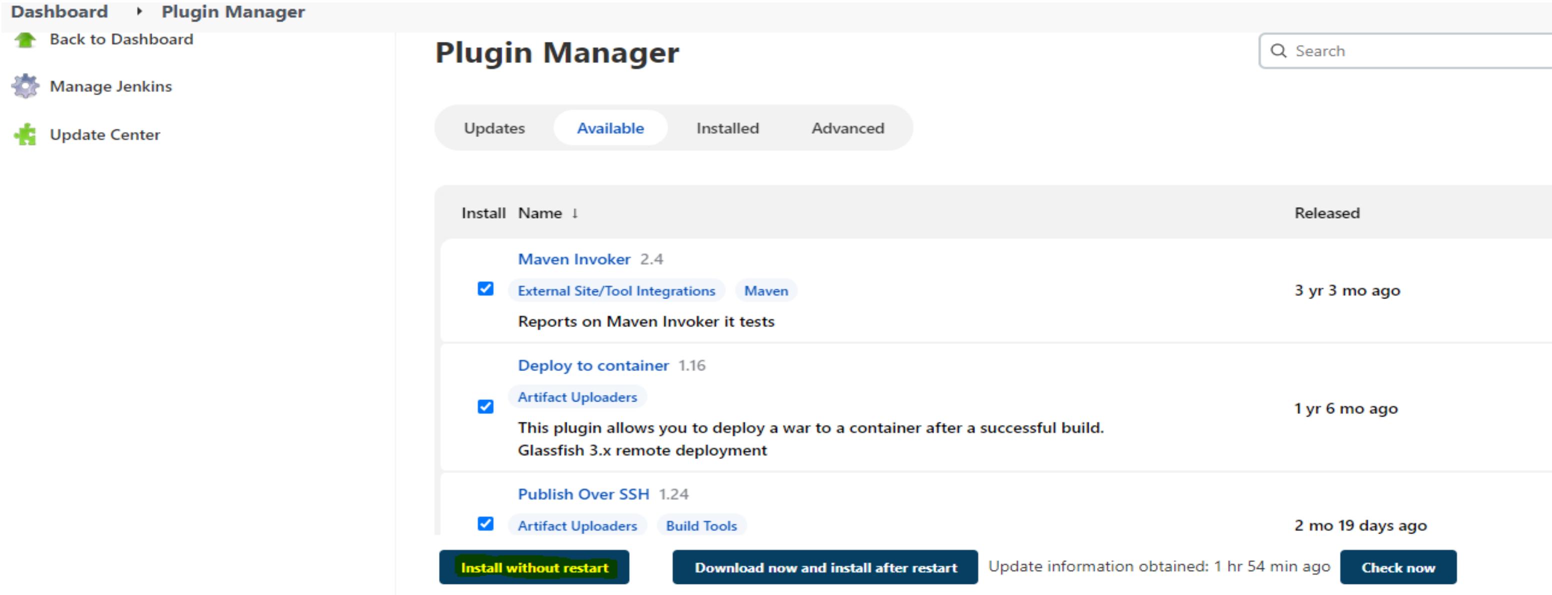
MAVEN_HOME

/usr/share/maven

□ Install automatically ?

8. Go to (Manage Jenkins → Mange plugins) and install the below plugins.

- Maven invoker
- Maven integration
- Deploy to container
- Publish over SSH



Dashboard › Plugin Manager

Back to Dashboard

Manage Jenkins

Update Center

Plugin Manager

Search

Updates | Available | Installed | Advanced

Install	Name ↓	Released
☑	Maven Invoker 2.4 External Site/Tool Integrations · Maven Reports on Maven Invoker it tests	3 yr 3 mo ago
☑	Deploy to container 1.16 Artifact Uploaders This plugin allows you to deploy a war to a container after a successful build. Glassfish 3.x remote deployment	1 yr 6 mo ago
☑	Publish Over SSH 1.24 Artifact Uploaders · Build Tools	2 mo 19 days ago

Install without restart | Download now and install after restart | Update information obtained: 1 hr 54 min ago | Check now