**Install Jenkins on AWS EC2**

Jenkins is a self-contained Java-based program, ready to run out-of-the-box, with packages for Windows, Mac OS X and other Unix-like operating systems. As an extensible automation server, Jenkins can be used as a simple CI server or turned into the continuous delivery hub for any project.

**Prerequisites**

1. EC2 Instance
   * With Internet Access
   * Security Group with Port 8080 open for internet
2. Java v1.8.x

**Install Java**

1. We will be using open java for our demo, Get the latest version from <http://openjdk.java.net/install/>
2. yum install java-1.8\*

#yum -y install java-1.8.0-openjdk-devel

1. Confirm Java Version and set the java home
2. java -version
3. find /usr/lib/jvm/java-1.8\* | head -n 3
4. JAVA\_HOME=/usr/lib/jvm/java-1.8.0-openjdk-<Java version which seen in the above output>
5. export JAVA\_HOME
6. PATH=$PATH:$JAVA\_HOME
7. # To set it permanently update your .bash\_profile

vi ~/.bash\_profile

*The output should be something like this,*

[root@~]# java -version

openjdk version "1.8.0\_151"

OpenJDK Runtime Environment (build 1.8.0\_151-b12)

OpenJDK 64-Bit Server VM (build 25.151-b12, mixed mode)

**Install Jenkins**

You can install jenkins using the rpm or by setting up the repo. We will set up the repo so that we can update it easily in the future.

1. Get the latest version of jenkins from <https://pkg.jenkins.io/redhat-stable/> and install
2. yum -y install wget
3. sudo wget -O /etc/yum.repos.d/jenkins.repo https://pkg.jenkins.io/redhat-stable/jenkins.repo
4. sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io.key

yum -y install jenkins

**Start Jenkins**

# Start jenkins service

service jenkins start

# Setup Jenkins to start at boot,

chkconfig jenkins on

1. **Accessing Jenkins**

By default jenkins runs at port 8080, You can access jenkins at

http://YOUR-SERVER-PUBLIC-IP:8080

**Configure Jenkins**

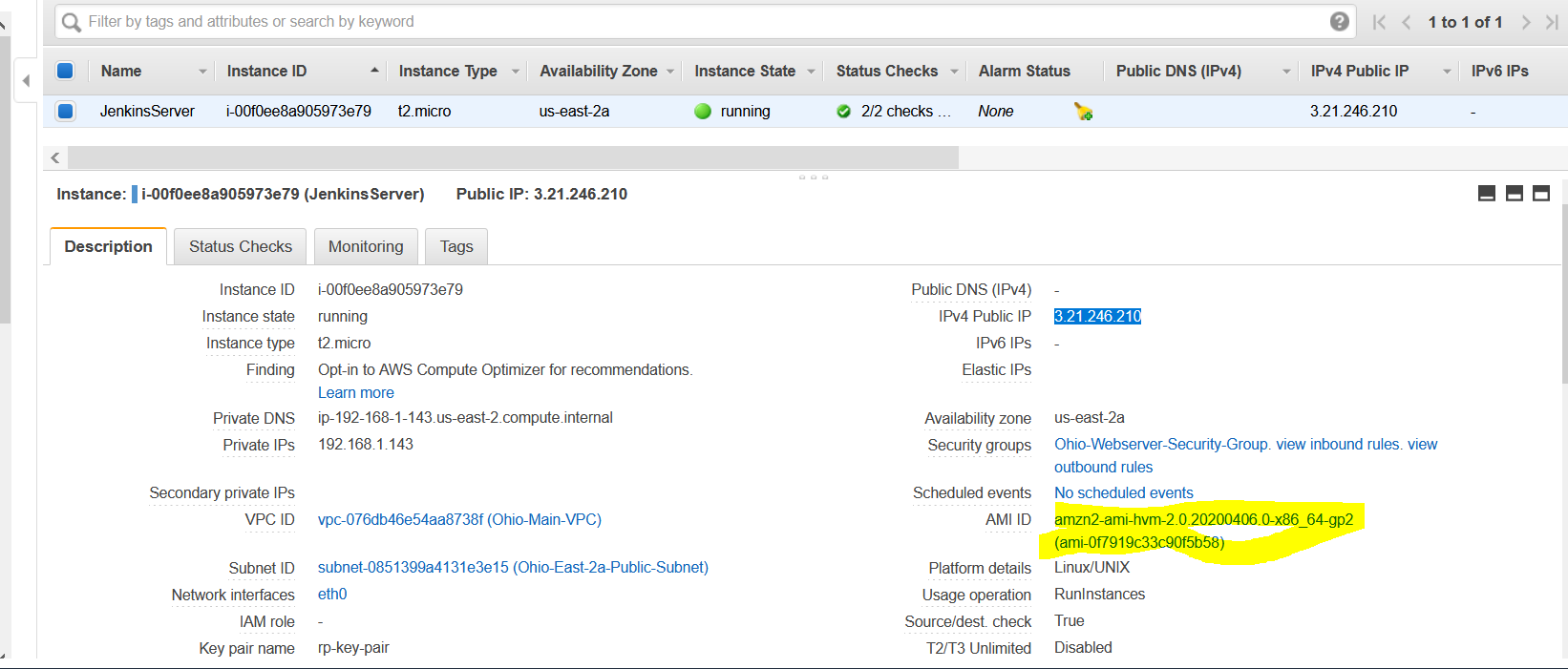
* The default Username is admin
* Grab the default password
* Password Location:/var/lib/jenkins/secrets/initialAdminPassword
* Skip Plugin Installation; *We can do it later*
* Change admin password
  + Admin > Configure > Password
* Configure java path
  + Manage Jenkins > Global Tool Configuration > JDK
* Create another admin user id

**Test Jenkins Jobs**

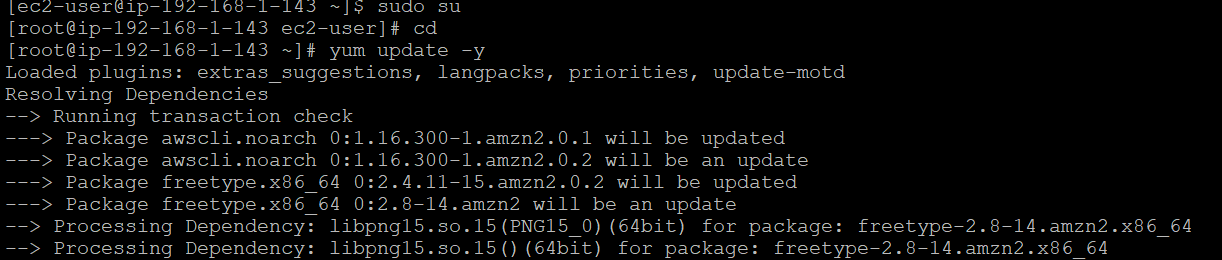
1. Create “new item”
2. Enter an item name – My-First-Project
   * Chose Freestyle project
3. Under the Build section Execute shell: echo "Welcome to Jenkins Demo"
4. Save your job
5. Build job
6. Check "console output"

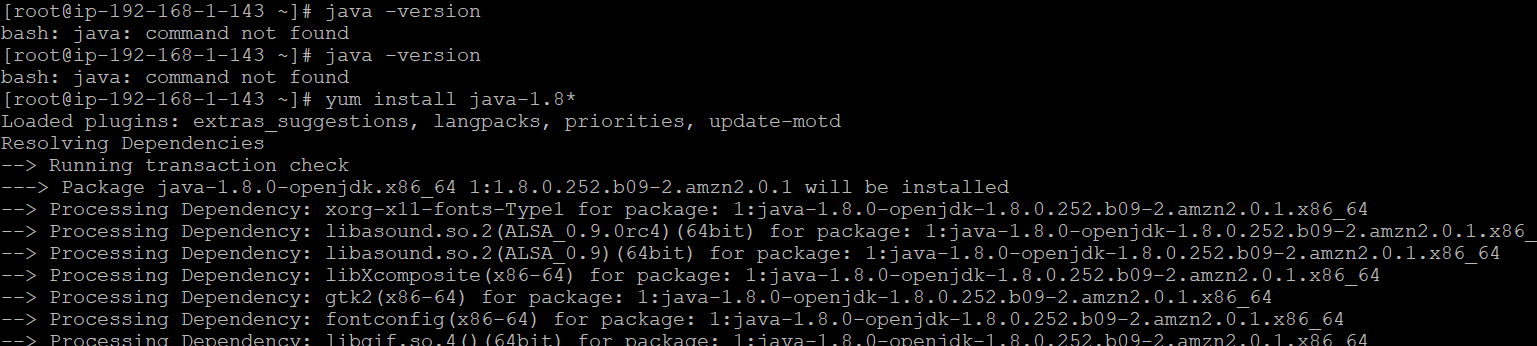
Following is screen shot step by step-

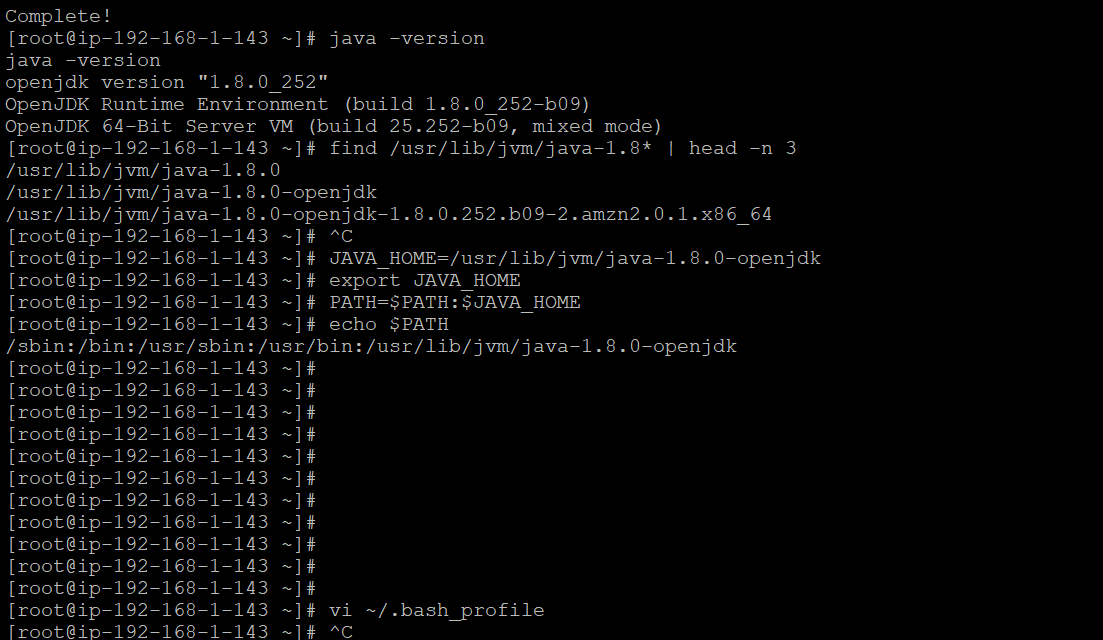
Provision EC2 Machine.

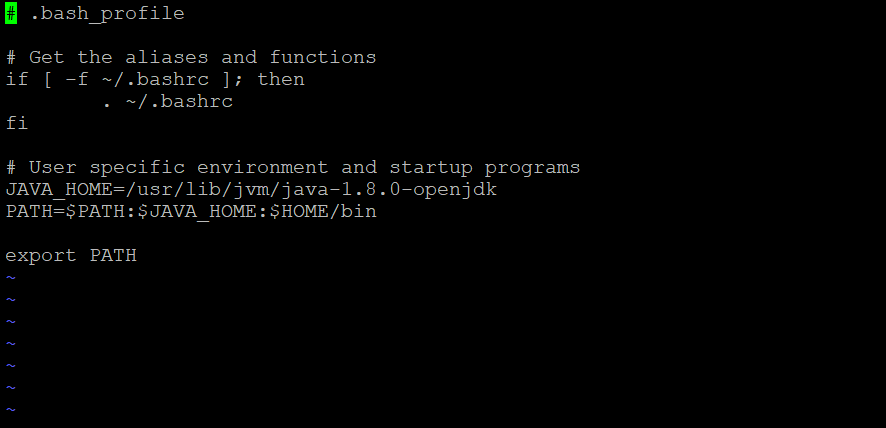


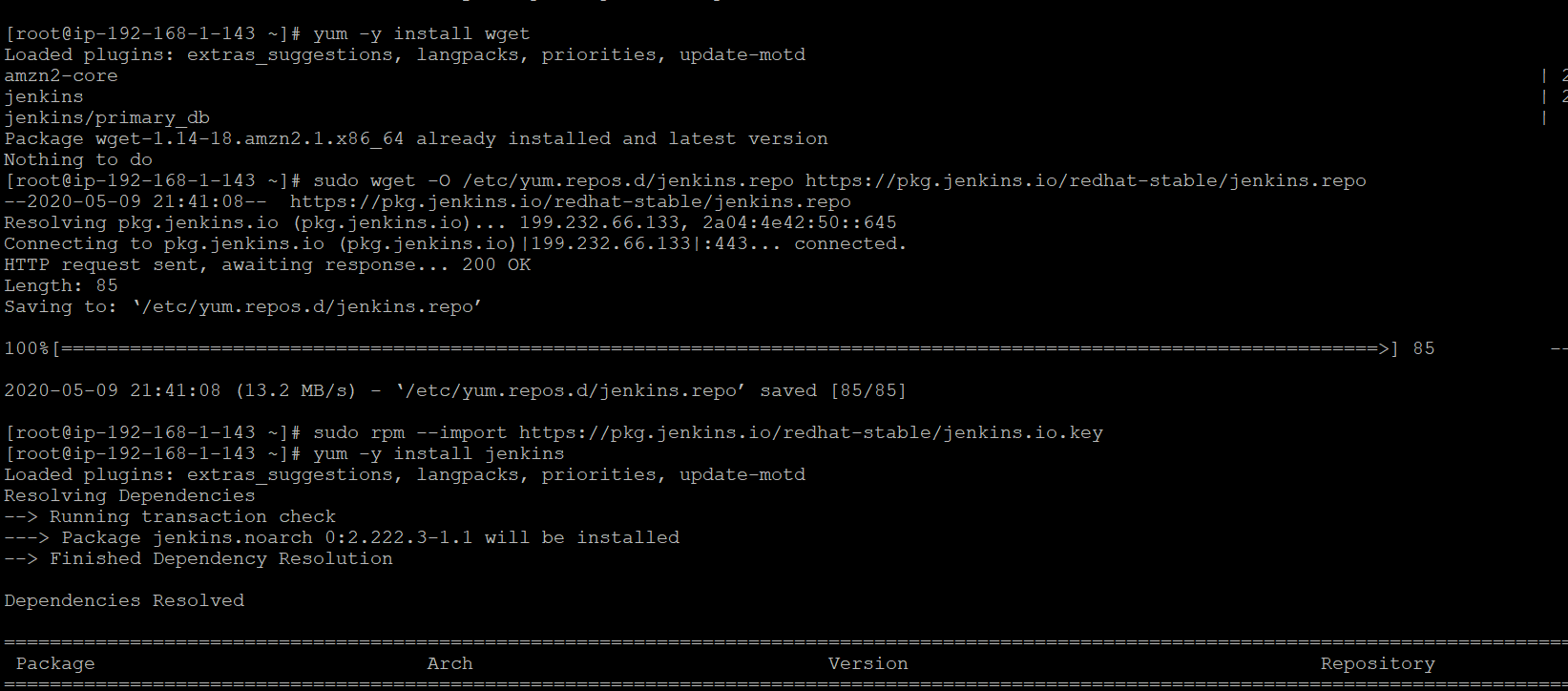
Login to EC2 Machine



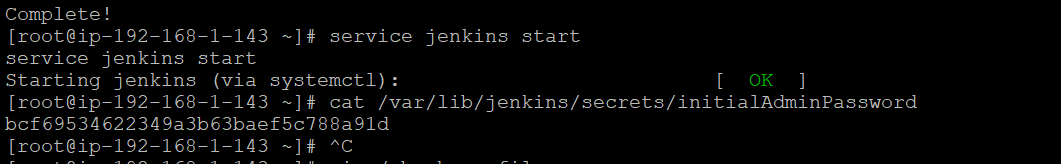


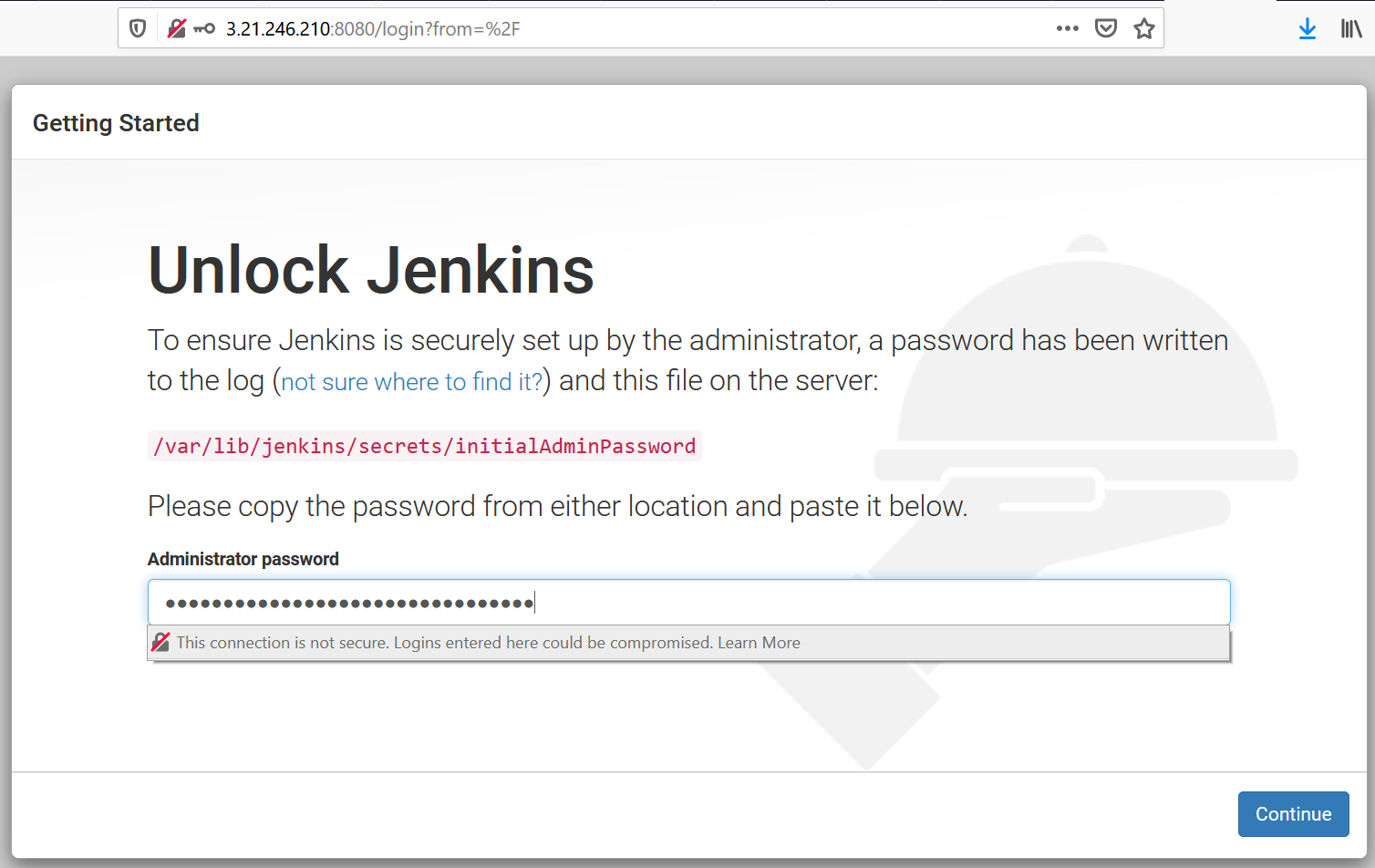


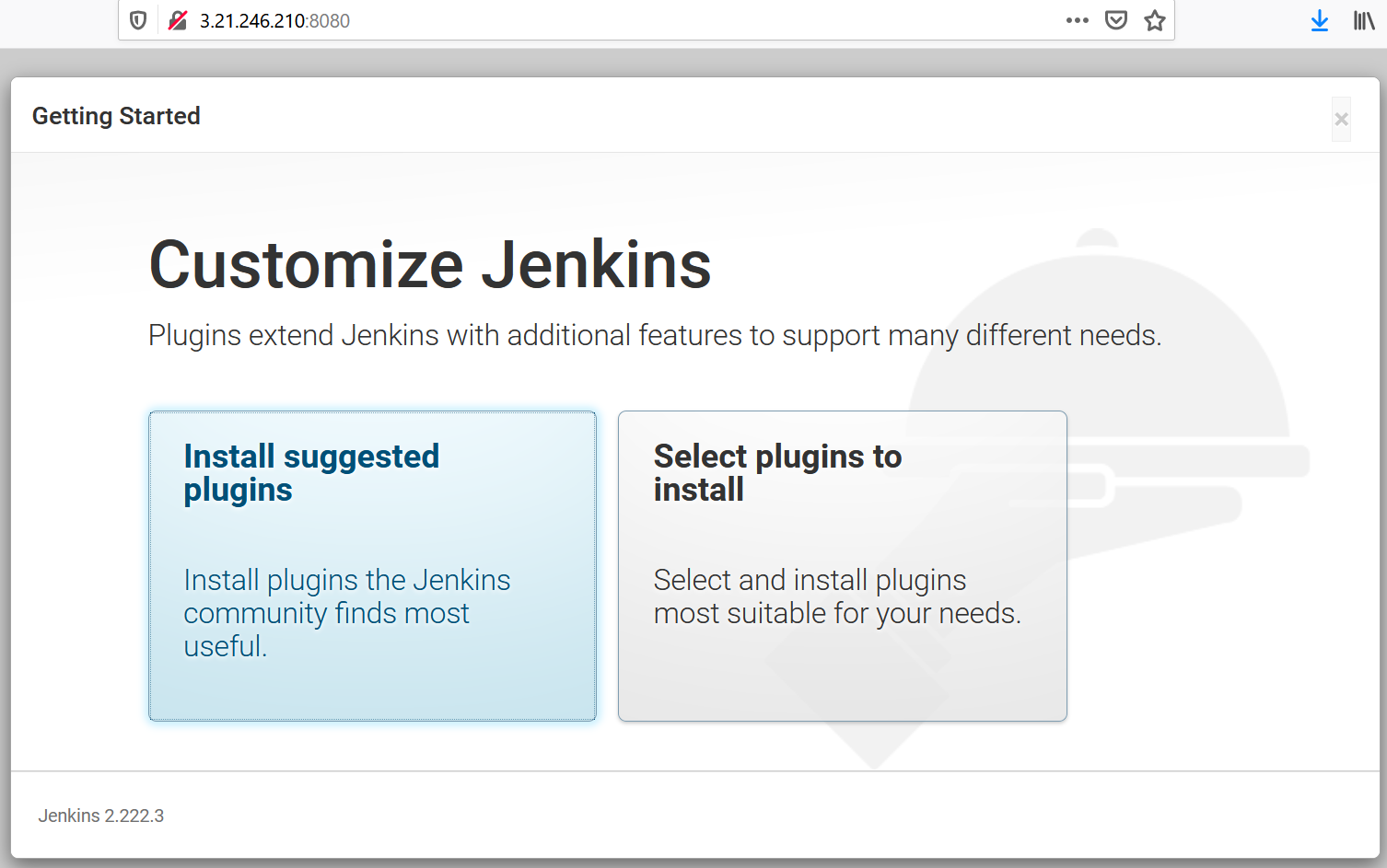


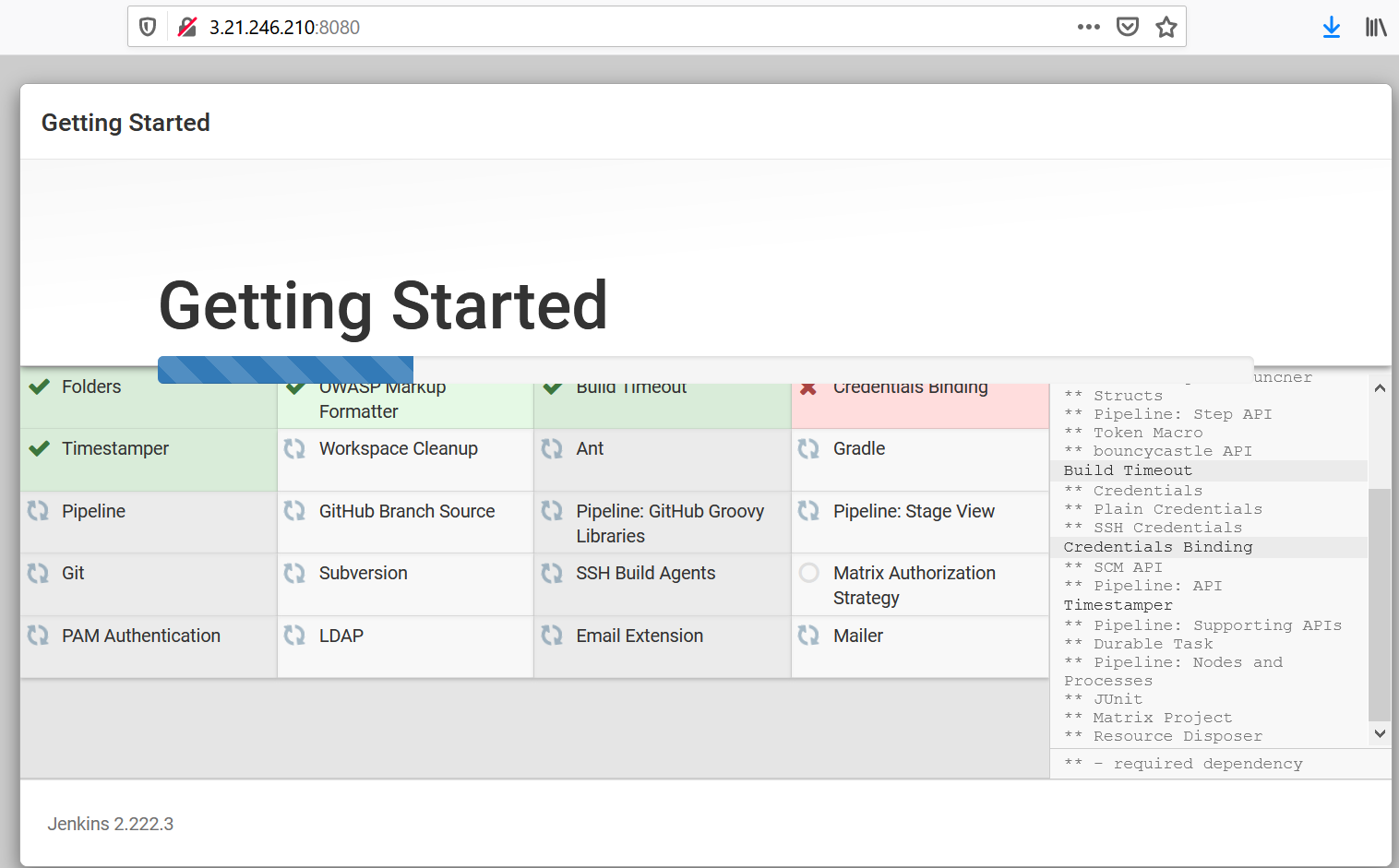


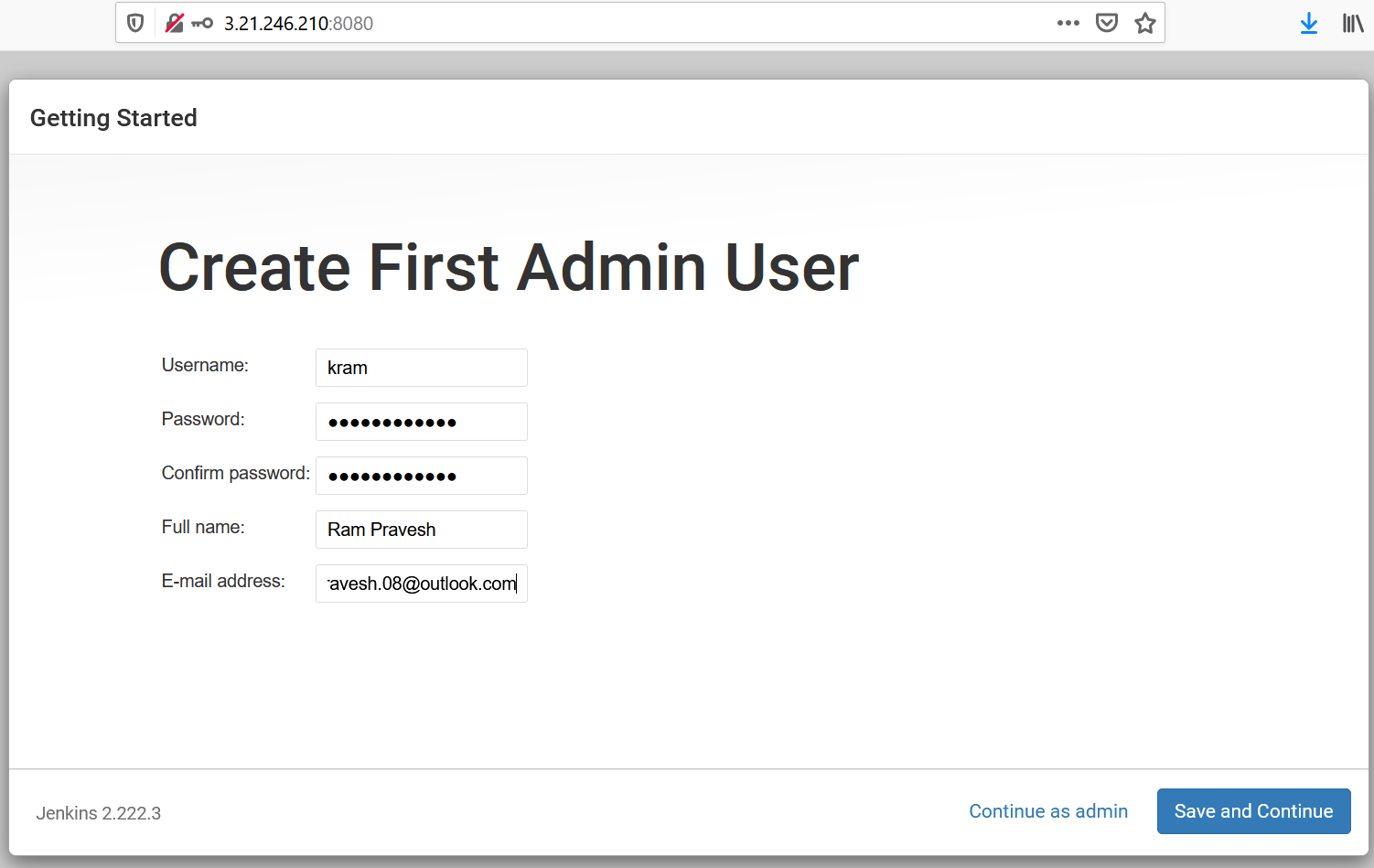


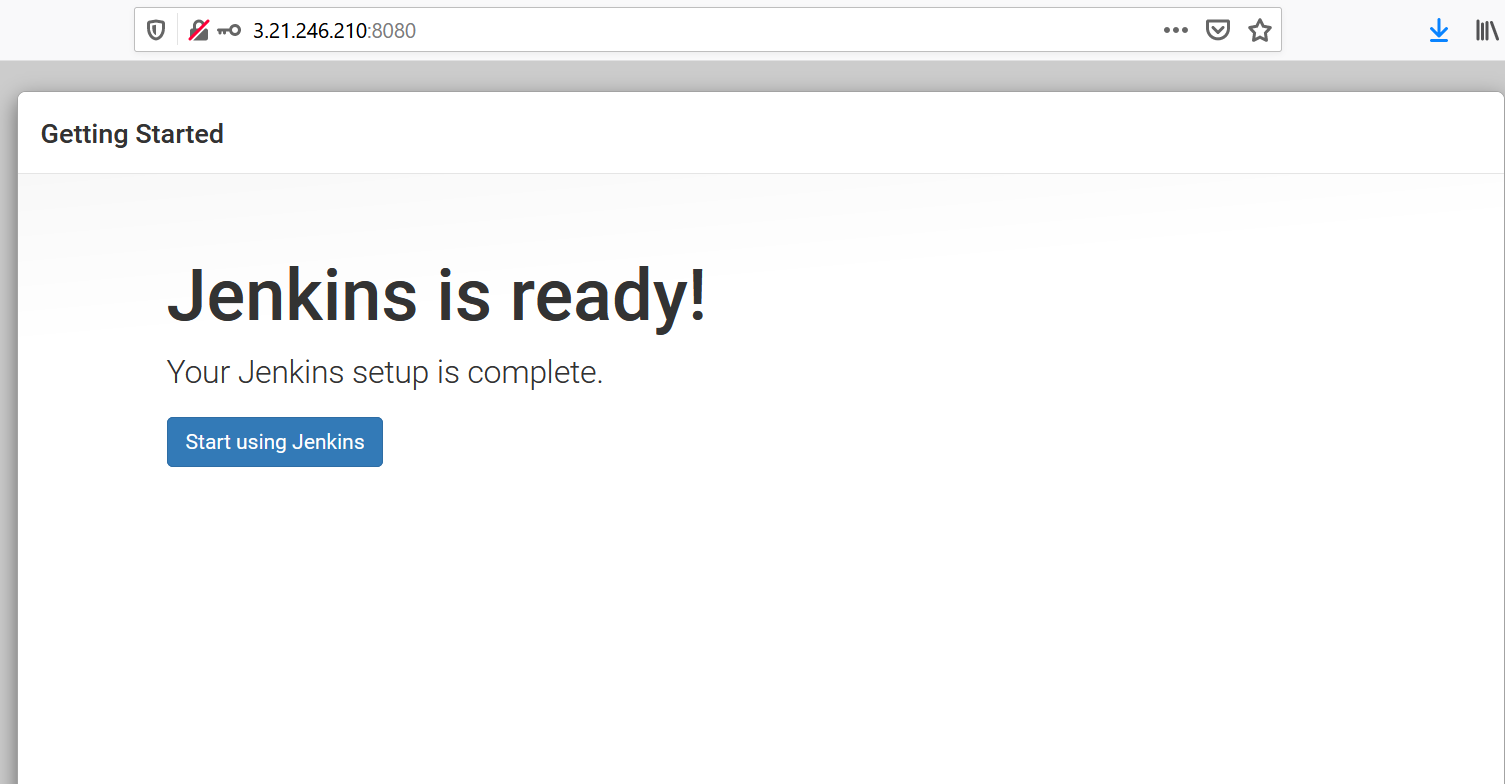


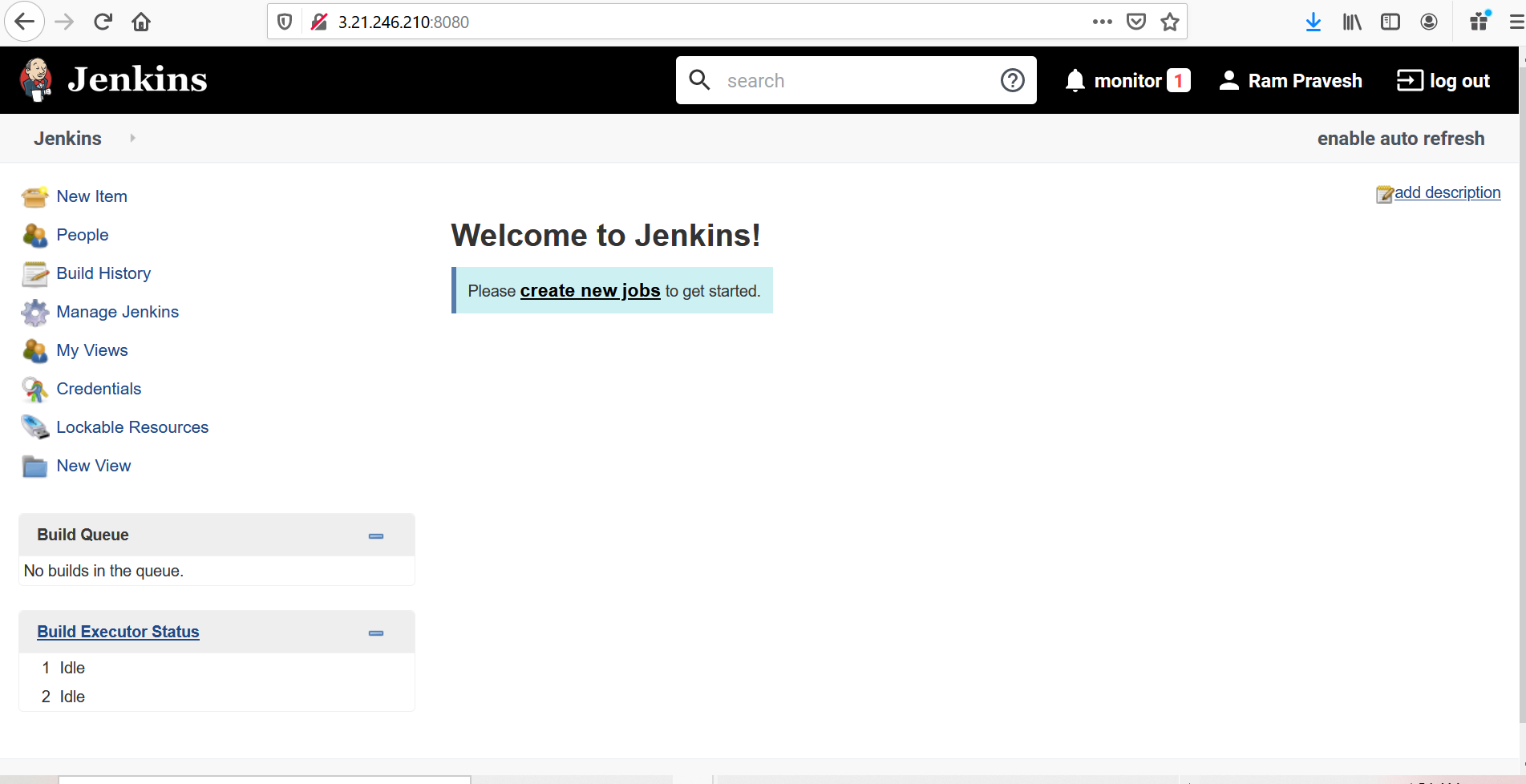












**Configure Git pulgin on Jenkins**

Git is one of the most popular tools for version control system. you can pull code from git repositories using jenkins if you use github plugin.

**Prerequisites**

1. Jenkins server

**Install Git on Jenkins server**

1. Install git packages on jenkins server

yum install git -y

**Setup Git on jenkins console**

* Install git plugin without restart
  + Manage Jenkins > Jenkins Plugins > available > github
* Configure git path
  + Manage Jenkins > Global Tool Configuration > git

# Install & configure Maven build tool on Jenkins

Maven is a code build tool which used to convert your code to an artifact. this is a widely used plugin to build in continuous integration

#### Prerequisites

1. Jenkins server

#### Install Maven on Jenkins

1. Download maven packages <https://maven.apache.org/download.cgi> onto Jenkins server. In this case, I am using /opt/maven as my installation directory

* Link : <https://maven.apache.org/download.cgi>
* # Creating maven directory under /opt
* mkdir /opt/maven
* cd /opt/maven
* # downloading maven version 3.6.0
* wget http://mirrors.estointernet.in/apache/maven/maven-3/3.6.1/binaries/apache-maven-3.6.1-bin.tar.gz

tar -xvzf apache-maven-3.6.1-bin.tar.gz

1. Setup M2\_HOME and M2 paths in .bash\_profile of the user and add these to the path variable
2. vi ~/.bash\_profile
3. M2\_HOME=/opt/maven/apache-maven-3.6.1
4. M2=$M2\_HOME/bin

PATH=<Existing\_PATH>:$M2\_HOME:$M2

#### Checkpoint

1. logoff and login to check maven version

mvn --version

So far we have completed the installation of maven software to support maven plugin on the jenkins console. Let's jump onto Jenkins to complete the remaining steps.

### Setup maven on Jenkins console

1. Install maven plugin without restart

* Manage Jenkins > Jenkins Plugins > available > Maven Invoker
* Manage Jenkins > Jenkins Plugins > available > Maven Integration

1. Configure maven path

* Manage Jenkins > Global Tool Configuration > Maven

# Ansible integration with Jenkins

Follow this on [**YouTube**](https://www.youtube.com/watch?v=nE4b9mW2ym0)

### Prerequisites:

1. Ansible server [**Get Help Here**](https://www.youtube.com/watch?v=79xFyOc_eEY)
2. Jenkins Server [**Get Help Here**](https://www.youtube.com/watch?v=M32O4Yv0ANc)

### Part-01 Integration Setps

Install "publish Over SSH"

* Manage Jenkins > Manage Plugins > Available > Publish over SSH

Enable connection between Ansible and Jenkins

* Manage Jenkins > Configure System > Publish Over SSH > SSH Servers
  + SSH Servers:
    - Hostname:<ServerIP>
    - username: ansadm
    - password: \*\*\*\*\*\*\*

Test the connection "Test Connection"