



Configuring Github:

1. Run: **apt-get install git**
2. To check the version of Git or whether it is installed or not, run this command: **git version**
3. Run: **ssh -keygen -t rsa**
4. **cd /root/.ssh**
5. **cat id_rsa.pub**
6. Copy the whole key and proceed.
7. Open www.github.com and sign up for Github.
8. Go to **settings > SSH & GPG Keys > New SSH Key**
9. Now paste that key here and save it.

maven

Installing Maven:

1. Run: **apt-get install maven**
2. To check the version of Maven or whether it is installed or not, run this command: **mvn -version**

Configuring Maven:

1. After installing Java, we need to configure JAVA_HOME by editing bash profile and copying the following lines. Run: **vi ~/.bash_profile**

```
if [ -f ~/.bashrc ]; then
    . ~/.bashrc
fi
if [ -d ~/bin ] ; then
    PATH=~/bin:"${PATH}"
fi
JAVA_HOME=/usr/lib/jvm/<java_package_name>/jre
export JAVA_HOME
PATH=$PATH:$JAVA_HOME/bin
export M2_HOME=/usr/share/maven
export M2=$M2_HOME/bin
export MAVEN_OPTS="-Xms256m -Xmx512m"
export PATH
```
2. To check whether environment variable has been set or not. Run:

```
#echo $JAVA_HOME
#echo $M2
```

3. After integrating Jenkins with Github, the build got failed while giving the command **mvn clean install**.
4. For this we have to install maven in **home directory (/etc/maven/)** by the command **sudo apt-get install maven**.
5. Now **clone** the GitHub by **git clone <url>** (Game-of-life). It is to be kept in mind that the cloning must be done in **maven directory (/etc/maven/)**.
6. Check whether **pom.xml** file is there or not and give the command **mvn clean install**.



Installing Apache Tomcat:

1. Download **ApacheTomcat8.0.30.tar.gz**.
2. Using **Winscp** or **FileZilla**, move this file to your Virtual Machine using **port-22**.
3. Unzip that file using the command: **tar -xvzf <file_name>**

Configuring Jenkins:

1. Go to your **virtual machine > settings > Network Interfaces > <user_name> > Network Security Group > Inbound Security Rules**.
2. Give **Name > Tomcat & Port > 8080**.
3. Now download **Jenkins.war**.
4. Paste this file inside **/Apache Tomcat/Webapps**.
5. Run: **cd /Apache Tomcat/bin**
6. **./startup.sh**
7. Open any browser (better to go with Google Chrome). Browse **<Virtual_Machine_IP>:8080/Jenkins**
8. It will ask for the Initial Administrator Password. To get the password Run: **cat cd /root/.jenkins/secrets/initialAdminPassword**
9. Copy the entire password and paste in the required field in the browser.
10. Now configure Git and Maven in Jenkins by installing their **plugins**.