**Deliverables**: This demonstration will simulate a completely automated CI/CD deployment pipeline using Jenkins. It will essentially do the following steps (phases):

1. Pull the source code for a Java EE based Project from GIT. (SCM AUTOMATION)
2. Compile (build) the code using Maven to generate the .war file (BUILD AUTOMATION)
3. Run Test cases & ensure they pass. (TEST AUTOMATION)
4. Copy the .war to a Docker build workspace (DEPLOYMENT AUTOMATION)
5. Build a Docker image for Jboss server to run the war file. (DEPLOYMENT AUTOMATION)
6. Deploy the Docker container on a target node. (DEPLOYMENT AUTOMATION)

**Prerequisites**: This demonstration has the following prerequisites:

1. Jenkins should be installed with git, maven and shell plugins.
2. In Jenkins Server install using # yum -y install git maven docker before trying out this demo.
3. Changes to be made for Jenkins to be able to run docker.

Install Java

yum install java-1.8\*

#yum -y install java-1.8.0-openjdk

Confirm Java Version

java -version

find /usr/lib/jvm/java-1.8\* | head -n 3 #copy the java path and update in .bash\_profile file

vi .bash\_profile

.bash\_profile -

JAVA\_HOME=/usr/lib/jvm/java-1.8.0-openjdk-1.8.0.222.b10-0.el8\_0.x86\_64

PATH=$PATH:$JAVA\_HOME:$HOME/bin

source ~/.bash\_profile

Configure java path

 Manage Jenkins --> Global Tool Configuration --> JDK --> Add the details and save

Name: Java1.8

JAVA\_HOME: /usr/lib/jvm/java-1.8.0-openjdk-1.8.0.222.b10-0.el8\_0.x86\_64

==================================================================================================

02.

Creating maven directory under /opt

 mkdir /opt/maven

 cd /opt/maven

Downloading maven version 3.6.2

 wget http://apachemirror.wuchna.com/maven/maven-3/3.6.2/binaries/apache-maven-3.6.2-bin.tar.gz

 tar -xvzf apache-maven-3.6.2-bin.tar.gz

Setup M2\_HOME and M2 paths in .bash\_profile of the user and add these to the path variable

 vi ~/.bash\_profile

 M2\_HOME=/opt/maven/apache-maven-3.6.2

 M2=$M2\_HOME/bin

 PATH=<Existing\_PATH>:$M2\_HOME:$M2

 echo $M2\_HOME; echo $M2

 source $M2\_HOME; source $M2

 echo $PATH

Setup Maven in Jenkins

Setup maven on Jenkins console

Install maven plugin without restart

Manage Jenkins > Jenkins Plugins > available > Maven Invoker

Manage Jenkins > Jenkins Plugins > available > Maven Integration

Configure maven path

Manage Jenkins > Global Tool Configuration > Maven

Name: Maven

Path: /opt/maven/apache-maven-3.6.2

=======================================================================================

echo "jenkins ALL=(ALL) NOPASSWD: ALL" >> /etc/sudoers

echo 'Defaults:jenkins !requiretty' >> /etc/sudoers

setenforce 0 # Else disable SELINUX in /etc/sysconfig/selinux and reboot

======================================================================================