DevOps Project Deployment

1.Choose High Medium Instance like t2.large.

2.Install all necessary things on that machine like.

$sudo yum install -y vim unzip wget git Java-11\* maven

3.Download and Install SonarQube (Running on port 9000)

$wget https://binaries.sonarsource.com/Distribution/sonarqube/sonarqube-7.5.zip

$unzip ~/sonarqube-7.5.zip

-->Start the Sonar

$ ~/sonarqube-7.5/bin/linux-x86-64/sonar.sh status

$ ~/sonarqube-7.5/bin/linux-x86-64/sonar.sh start

$ ~/sonarqube-7.5/bin/linux-x86-64/sonar.sh status

--> Open Sonarqube generate Token select language and copy the command for further use

like $mvn sonar:sonar \-Dsonar.host.url=http://3.111.245.205:9000 \-Dsonar.login=b7d69f5f2c5351a6f9f84c3c527349510f34d190

4.Download and install Sonar Nexus Repository(Running on port 8081)

$ wget https://download.sonatype.com/nexus/oss/nexus-2.14.18-01-bundle.tar.gz

$ tar xvf nexus-2.14.18-01-bundle.tar.gz

$ ~/nexus-2.14.18-01/bin/nexus start

5.Download and install tomcat Server.

$ wget https://archive.apache.org/dist/tomcat/tomcat-7/v7.0.94/bin/apache-tomcat-7.0.94.tar.gz

$ tar xvf apache-tomcat-7.0.94.tar.gz

--> After Unzip you have to run tomcat server on different port bcoz Jenkins is running on same port(8080) that why

--> You have to change 2 files.

i.server.xml ii.tomcat-users.xml

$vim apache-tomcat-7.0.94/conf/server.xml

--> then search /8080 after that in connector port change 8080 to 9090

<Connector port="9090" protocols=---> save and exit file

$vim apache-tomcat-7.0.94/conf/tomcat-users.xml

In that you have to add user configuration add the following line in below :-

<tomcat-users>

<user username="tomcat" password="tomcat" roles="manager-gui"/>

</tomcat-users>

--> Then start the Apache-tomcat server

$ ~/apache-tomcat-7.0.94/bin/startup.sh $ ~/apache-tomcat-7.0.94/bin/status.sh $~/apache-tomcat-7.0.94/bin/shutdown.sh

5.Setting Jenkins(make sure Java-11 version is installed)Running on port 8080

$sudo yum install -y epl-release

$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

$sudo yum -y install jenkins

$sudo systemctl start jenkins

$sudo cat /var/lib/jenkins/secrets/initialAdminPassword -->view password and open Jenkins

--> select plugins to install and select none plugin for timing.

6.In Jenkins view have to create multiple jobs and create job

-->first you have to install 2 plugins I. GitHub ii. build pipeline plugging

i).validate code(jobname):-

-->in that select source code give GitHub project link.

--> git link - https://github.com/Nil30/DevOpsProject.git

-->In Execute shell $mvn compile save and build job.

ii).Testing job-select for first project

-->change only shell $mvn test save and build project

iii. Sonar Analyzing

-->copy the sonar command

$mvn sonar:sonar \-Dsonar.host.url=http://3.111.245.205:9000 \-Dsonar.login=b7d69f5f2c5351a6f9f84c3c527349510f34d190

-->save and build project

iv).Clone project in your system $git clone https://github.com/Nil30/DevOpsProject.git then move to project directory then open pom.xml file add below code like.

-->in distribution management add Ip address like

<url>copy of nexus ip</url>

-->copy of nexus is available in nexus repo.

-->save file add file then push file to GitHub

$git add pom.xml

$git commit -m "change pom.xml"

$git push

-->Before running nexus project set the configuration

$sudo vim /usr/share/maven/conf/settings.xml -->Add code in server

<servers>

<server>

<id>releases</id>

<username>admin(username of nexus)</username>

<password>admin123(password of nexus)</password>

</server>

-->change id and password

--> then set the job -- Artifact(jobname) and then build the project.

-->open nexus server and copy link for further use it.

vi)first move your tomcat file to opt directory

$sudo mv apache-tomcat-7.0.94 /opt

-->then start again tomcat server $sudo ~/opt/apache-tomcat-7.0.94/bin/startup.sh

-->adding centos(user) in jenkins

$sudo visudo -->search for %wheel then add user

Jenkins ALL=(ALL) NOPASSWD: ALLL -->save the file and restart again the Jenkins

-->Deploy App(jobname) make sure you have to select git none in shell type below command

$cat /opt/apache-tomcat-7.0.94/webapps/

$sudo wget --user username(admin) --password password(admin123) linkofnexus(http://3.111.245.205:8081/nexus/service/local/repositories/releases/content/com/web/cal/WebAppCal/1.3.8/WebAppCal-1.3.8.war)

-->save the project and build.

7.Creating pipeline in Jenkins are two ways.

i)App pipeline

-->In Jenkins select + operation build pipeline view

--> goto Testing job->build trigger->select build after project are build->project name and like as sonar analyses project

A. Code validate

B. testing

C. Sonar Analysis

D. Publish Artifact

E. Deploy App

-->add also webhook trigger for first job for automation

ii. Using Pipeline

-->create pipeline script and update to github repo

-->create job using pipeline selector

-->In pipeline definition give GitHub link and also Jenkins file path save and apply. then build pipeline.

-->You have to change/conf file in localhost and then update to GitHub repo.

Jenkins File

pipeline {

agent any

stages {

stage('validate') {

steps {

echo 'Code Validate'

sh 'mvn compile'

}

}

stage('UnitTest') {

steps {

echo 'Unit Testing'

sh 'mvn test'

}

}

stage('Sonar') {

steps {

echo 'Sonar Analysing'

sh 'mvn sonar:sonar -Dsonar.host.url=http://3.111.245.205:9000 -Dsonar.login=b7d69f5f2c5351a6f9f84c3c527349510f34d190'

}

}

stage('Public Artifact') {

steps {

echo 'Providing Artifact'

sh 'mvn deploy'

}

}

stage('Deploy') {

steps {

echo 'Deploying App on Tomcat Server'

sh 'cd /opt/apache-tomcat-7.0.94/webapps/'

sh 'sudo wget --user admin --password admin123 http://3.111.245.205:8081/nexus/service/local/repositories/releases/content/com/web/cal/WebAppCal/1.3.8/WebAppCal-1.3.8.war'

}

}

}

}