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DevOps - Day 21

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JENKINS

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Project 2: JENKINS + GITHUB + MAVEN + TOMCAT - Integration

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~ Code is usually available in GITHUB Repo. We have to create a Jenkins job that job should take code from GITHUB repo. It should compile and package that code using Maven, and then the war gets generated. This war file should be deployed into the Tomcat Webserver. So, here we are going to do Build & Deployment Process.

~ By default the Tomcat will run on Port No. 8080

~ By default the Jenkins will run on Port No. 8080

Tasks:

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Part 1

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1. Create an EC2 Instance - Connect to the instance using MobaXTerm Tool.

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Part 2

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JENKINS INSTALLATION ON LINUX EC2 INSTANCE

2.1 sudo wget -O /etc/yum.repos.d/jenkins.repo https://pkg.jenkins.io/redhat-stable/jenkins.repo

2.2 sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io.key

2.3 sudo yum install java -y

2.4 java -version

2.5 sudo yum install jenkins

2.6 sudo service jenkins status

2.7 sudo service jenkins start

2.8 sudo service jenkins status

2.9 Check the jenkins accessibility. By default the Jenkins will run on Port No. 8080.

So, open Port No. 8080 for EC2 instance to access Jenkins

"Check" the instance ----> Security ----> Click on the link under SGs ----> Add Rules ----> Custom TCP, 8080, Anwhere ----> Save Rules.

Open new tab: <Paste the Public IP of Instance>:8080 ----> You will see the Jenkins Home Page ----> Now we have to Unlock the Jenkins ----> You will see a code in the red colour ----> Copy the code in red colour ----> Go to MobaXTerm ----> sudo cat <paste the red color code> ----> You will see a password. Copy that password and paste in jenkins home page ----> Click on suggested plugins ----> You will see "Create First Admin User" ----> Enter Username, Password, Name, Email Id ----> Save and Continue ----> Jenkins URL:http://52.14.0.208:8080/ ----> Save and Finish ----> You will see "Jenkins is ready!" ----> Click on "Start using jenkins" ----> Now you can see the jenkins home page and here you can create Jenkins Jobs.

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Part 3

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TOMCAT WEBSERVER INSTALLATION ON LINUX EC2 INSTANCE

https://tomcat.apache.org/download-90.cgi ----> Downloads ----> Tomcat 9 ----> Copy the link of tar.gz file ----> https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.73/bin/apache-tomcat-9.0.73.tar.gz ----> sudo wget https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.73/bin/apache-tomcat-9.0.73.tar.gz ----> ls -l ----> You will the tomcat file in red colour. This is a tar.gz file and we have to extract the tar.gz file ----> tar -xvf <enter the name of tomcat file in red colour> ----> All the files will get extracted ----> ls -l ----> You will see the list of extracted files

Lets start the tomcat server:

Inorder to start the tomcat server, we need a file called "starup.sh"

This "startup.sh" file will be there in "bin" folder ----> cd bin ----> ls -l ----> you will see startup.sh file ----> ./startup.sh ----> You will see "Tomcat Started"

Lets access the tomcat server:

Since, the tomcat also runs on Port No. 8080, we cannot access tomcat as on the same port no. jenkins is also running.

Now, we have to change the Port No. of Tomcat. (Tomcat Port No. 9090)

How to change the port no. of Tomcat?

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In order to change the port no. of Tomcat, we will configure a file known as "server.xml" This server.xml file will be available in "conf" folder.

cd .. ----> pwd ----> /home/ec2-user/apache-tomcat-9.0.73 ----> ls -l ----> cd conf ----> ls -l ----> you will see server.xml file ----> vi server.xml ----> scroll down till you see "connector port=8080" ----> press "i" ----> Change the port no to 9090 instead of 8080 ----> escape ----> :wq

Check the Tomcat accessibility. By default the Tomcat will also run on Port No. 8080. But on the same port no. jenkins is also running.

So we have to add the port no. to 9090 in ec2 instance to access Tomcat:

"Check" the instance ----> Security ----> Click on the link under SGs ----> Add Rules ----> Custom TCP, 9090, Anwhere ----> Save Rules.

Shutdown the tomcat server ----> cd bin ----> ./shutdown.sh ----> ./startup.sh

Open new tab: <Paste the Public IP of Instance>:9090 ----> You will see the Tomcat Home Page

Go to browser and check for tomcat accessibility. You are now able to access Tomcat and Jenkins in the same instance.

Here we can access only the Home page of Tomcat.

Inorder to access complete tomcat server, we need to do the configuration in "context.xml" file.

apache-tomcat-9.0.73/webapps/manager/META-INF/context.xml

cd apache-tomcat-9.0.73/webapps/manager/META-INF/context.xml ----> vi context.xml ----> You will see a valve tag. You have to edit "Allow" tag ----> ".\*" />

Configuring the Users in Tomcat

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we need to edit the tomcat-users.xml to configure the users.

The "tomcat-users.xml" file is available in "conf" folder

<role rolename="manager-gui" />

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

<role rolename="admin-gui" />

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

cd bin

./shutdown.sh

./startup.sh

Access Tomcat on Browser ----> Click on Server Status ----> Enter the username (admin) and password (admin)

Jenkins Port No.: 8080

Tomcat Port No.: 9090

Steps to create the jenkins job with GITHUB Repo. + Maven + Tomcat Server:

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Connect to the Tomcat Server

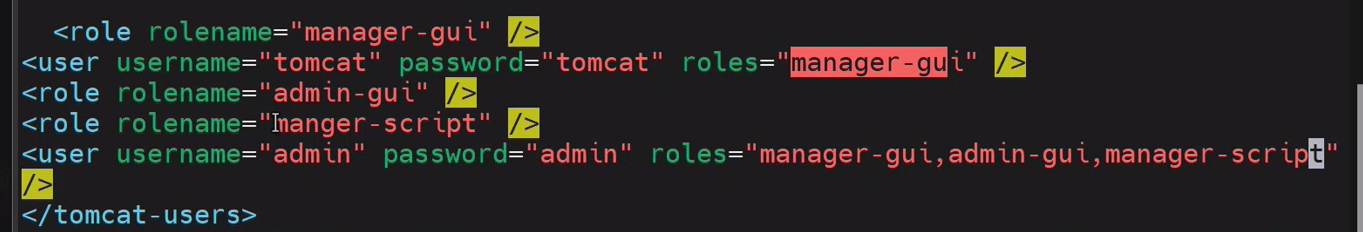
Connect to the Jenkins Software

Inorder to do the automation, Jenkins is going to execute some script to deploy the war file into the Tomcat Webserver.

Step 1: Adding the manager-script role in tomcat-users.xml file

In order to do the automation, Tomcat user should have a "manager-script" permission. There should be one user in the Tomcat with the "manager-script" permission. Then with that user credentials we can automate the deployment process.

Goto MobaXTerm and Connect to the Instance ----> ls -l ----> cd apache-tomcat-9.0.73 ----> ls -l ----> cd conf ----> ls -l ----> You can see tomcat-users.xml ----> vi tomcat-users.xml



Step 2: Installing deploy-container plugin in Jenkins software

Jenkins Dashboard ----> Manage Jenkins ----> Mange Plugins ----> Available Plugins ----> In the search bar, type deploy to container and check the same ----> Install without restart ----> Click on "Go back to the top page.

Step 3: Creating a Jenkins job and for that Jenkins job we will give permission to deploy

JDK

GIT

MAVEN

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By

Kastro Kiran V