TOMCAT – DEPLOYMENT USING ANSIBLE – JENKINS – INTEGRATION

Step1: Create 3 - Compute Instance VM (ansible, node1, node2) with Default - Service Account (SA) and Default VPC (in VPC firewall Add-fire wall rule: All-Ports – Any Where)

Step2**:** Login to master(ansible) and node1, node2 - VM – Instance SSH – execute the below given process

1. hostnamectl set-hostname ansible (master-vm)
2. hostnamectl set-hostname dev (node1-vm)
3. hostnamectl set-hostname test (node2-vm)
4. sudo –i
5. passwd root (set the password for root)
6. vim /etc/ssh/sshd_config (do the below changes and save this file

(uncomment line - 34: PermitRootLogin yes | line – 58: PasswordAuthentication no=yes)

7. systemctl restart sshd
8. systemctl status sshd

Step3**:** Login to master - VM – Instance (ansible) SSH – Install Maven-Jenkins-java17- Git and Ansible

ANSIBLE SERVER (master): Install Ansible using below script.

```
sudo apt update

sudo apt install software-properties-common

sudo add-apt-repository --yes --update ppa:ansible/ansible

sudo apt install ansible
```

Now Add the slave node IP in Inventory file

vim /etc/ansible/hosts (below line number 12 add the below give tags and Private-IP)

[dev]

172.31.81.244 (private IP of node1 instance)

[test]

172.31.91.255 (private IP of node2 instance)

Now generate SSH key in all 3 - VM instances using command (ssh-keygen)

- ssh-keygen -- > enter 4 times

Now connect to the host node from master-VM (ansible):

- ssh-copy-id root@private_IP of dev-- > yes -- > password
- ssh private_IP of dev (node1-vm)
- ctrl + d (exit)
- ssh-copy-id root@private_IP of test -- > yes -- > password
- ssh private_IP of test (node2-vm)
- ctrl + d (exit)

NOTE: The commands must run according to particular-VM Instance as mentioned above

Copy and paste the below scripts for Jenkins - Maven Installation Process:

RUN MANUALLY

- ***Installing your desired maven version in particular path:***
- *Download Maven:*

wget https://apache.osuosl.org/maven/maven-3/3.9.5/binaries/apache-maven-3.9.5-bin.tar.gz

- ***Extract the archive:*** *tar xzvf apache-maven-3.9.5-bin.tar.gz*
- ***Move Maven to /opt directory (optional):*** *sudo mv apache-maven-3.9.5 /opt*
- ***Set environment variables:*** *vim ~/.bashrc (copy paste below command)*

export M2_HOME=/opt/apache-maven-3.9.5

export PATH=$M2_HOME/bin:$PATH

- ***Run This Command:*** *source ~/.bashrc*
- ***Verify installation:*** *mvn --version*

Jenkins & Git - Installation:

Vim jenkins.sh (Copy & Paste the below script in this file):

sudo apt update

sudo apt install git -y

sudo apt install openjdk-17-jre -y

curl -fsSL https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key | sudo tee \

/usr/share/keyrings/jenkins-keyring.asc > /dev/null

echo deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] \

https://pkg.jenkins.io/debian-stable binary/ | sudo tee \

/etc/apt/sources.list.d/jenkins.list > /dev/null

sudo apt-get update

sudo apt-get install jenkins –y

To Run the script: sh jenkins.sh

TOMCAT INSTALLATION & DEPLOYMENT IN HOST NODES:

Step1 – In Master – VM (ansible) create

- **cd /etc/ansible/ -> (vim tomcat.sh)**
- **cd/etc/ansible/ -> (vim tomcat.yml)**

Now in the below given Git Repo:

https://github.com/SaravanaNani/ansible-setup-gcp.git

Step2 – Copy the content from **tomcat.sh** (tomcat install script) **and tomcat.yml** (playbook file) - paste in above created files in local **/etc/ansible/**

Step3 – Login to Jenkins Console and Install Plugins (**Ansible, Deploy to container**)

Step4 – Setup ansible path:

- manage Jenkins – Tools – ansible: name (ansible-path) | Path (/usr/bin)

Step8 – Generate pipeline syntax for deployment stage

-->Sample Step (Ansible Playbook : invoke an ansible playbook)

--> Playbook file path in workspace (/etc/ansible/tomcat.yml)

--> Inventory file path in workspace (/etc/anisble/hosts)

--> SSH connection credentials -> ADD (Jenkins) -> kind (username – password) -> username: root password (the password you created at initially) ->save -> select credentials

--> Disable the host SSH key check (select)

--> generate pipeline Syntax

Step5 – In the above given repo link you can fetch the pipeline or else use the below:

```
pipeline {
  agent any
  tools {
    maven "maven"
  }
  stages {
    stage('checkout') {
      steps {
        git 'https://github.com/SaravanaNani/jenkins-java-project.git'
      }
    }
    stage('artifact') {
      steps {
        sh 'mvn clean package'
      }
    }
    stage('ansible deployment') {
```

```
        steps {
            ansiblePlaybook credentialsId: 'ansible', disableHostKeyChecking: true, installation: 'ansible', inventory: '/etc/ansible/hosts', playbook: '/etc/ansible/tomcat.yml', vaultTmpPath: ''
        }
    }
  }
}
```

Therefore, tomcat is now installed on node1 and node2 – VM Instances and Application is deployed in tomcat.