**Architecting Jenkins Pipeline for Scale**

1. Create three ec2 instances with ubuntu AMI and use this user data script to install Jenkins in master server. And create security group to allow traffic from ssh as well as http(custom TCP) on 8080

**User data Script:**

#! /bin/bash

sudo apt update -y

sudo apt install openjdk-11-jdk -y

sudo wget -O /usr/share/keyrings/jenkins-keyring.asc \

https://pkg.jenkins.io/debian/jenkins.io-2023.key

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

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

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

sudo apt-get update

sudo apt-get install Jenkins

1. **Adding two slave nodes to master:**

first create ec2 instance and allow ssh connection from master node by selecting master security group.

Then copy slave key pair in master node and do ssh login into slave node from master.

* ssh -i "slave1.pem" [ubuntu@**ec2-18-171-54-10**.eu-west-2.compute.amazonaws.com](mailto:ubuntu@ec2-18-171-54-10.eu-west-2.compute.amazonaws.com) (Private Ip 172.31.19.92)
* ssh -i "slave2.pem" ubuntu@ec2-3-8-117-23.eu-west-2.compute.amazonaws.com (Private Ip: 172.31.16.146)

now open Jenkins GUI in web “master node public IP:8080” and add node as slave by configuring the slave node details as below:

* remote directory: /home/ubuntu/
* host: private IP of slave node
* user ubuntu and copy and paste private key.

1. **Build Pipeline Job:**

Download and install maven integration plugin, Node and Label parameter plugin.

Manage Jenkins->plugins

Configure maven and JDK: Manage Jenkins – Tools – Select installed jdk path and maven path.

If we want to execute Maven project on slave nodes, Maven and JDK should be available in it.

For dynamic node selection to execute build on slave nodes, select project is parameterised.

A screenshot of a computer

Description automatically generated

**Pipeline script:**

pipeline {

agent {

node {

label node #node selection will be done at build time

}

}

stages {

stage('Node slection'){

steps {

sh 'echo $node'

}

}

stage('clone') {

steps {

// Get some code from a GitHub repository

git url: 'https://github.com/Ashwinirao22/maven-project.git'

}

}

stage("build code") {

steps{

sh "mvn clean install"

}

}

}

}