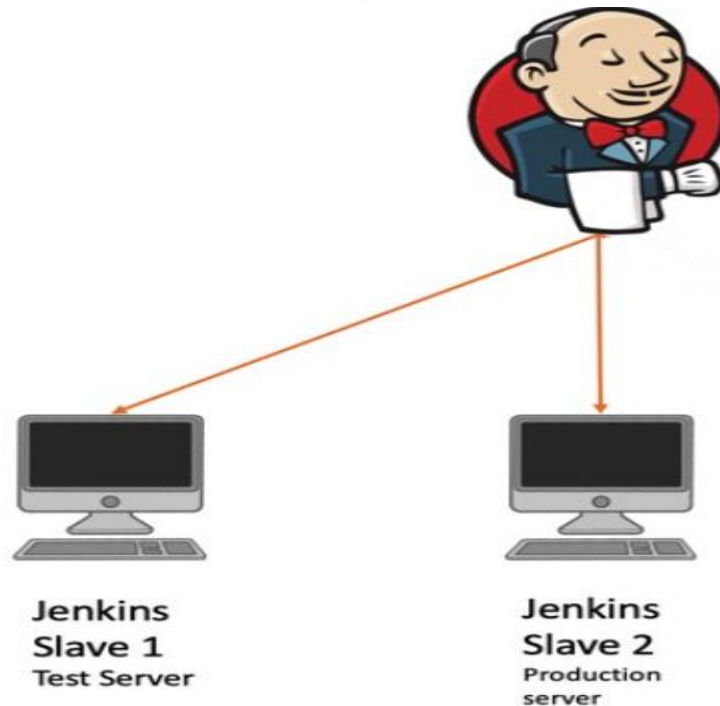


Problem statement : Need to create Jenkins master and slave architecture in AWS like below in AWS . here one instance will be Jenkins master and other two nodes will be jenkins slave nodes as Testing server and Production server



Solution : Solution is given below as per the steps

1.Launch three instance at AWS with Ubuntu:18.04 AMI , note that all three nodes need to be in same aviability zone, otherwise AWS can charge for bandwidth for different aviability zone.

2.Allow port 22, 80, ICMP, 8080 in security group

<input type="checkbox"/>	Jenkins master	i-052be4e5d6e698889
<input type="checkbox"/>	production	i-0e3334780d894301b
<input type="checkbox"/>	testing	i-0fc039440982544ed

3.Create ssh key at Jenkins master node and copy them to master and login once

```
ubuntu@ip-172-31-47-27:~$ ssh-keygen
```

Generating public/private rsa key pair.

Enter file in which to save the key (/home/ubuntu/.ssh/id_rsa):

Enter passphrase (empty for no passphrase):

Enter same passphrase again:

Your identification has been saved in /home/ubuntu/.ssh/id_rsa.

Your public key has been saved in /home/ubuntu/.ssh/id_rsa.pub.

The key fingerprint is:

SHA256:JghMm5W3533KM4isNY3KS/UHnAx4dxa3+tmlLcNaxFU
ubuntu@ip-172-31-47-27

The key's randomart image is:

+---[RSA 2048]-----+

```
| ..  .. E|
| o +...  o . .|
| = ..o.. o . .|
| . o.=.+ . . .|
| . ooS.. o .|
| . *.....= + |
| ..+.oo.oo B .|
| o oo...= o o |
| =o  o.  |
```

+----[SHA256]-----+

Now the newly created ssh keys need to install at both slaves nodes at
authorized_keys section

```
cat .ssh/id_rsa.pub
```

```
ssh-rsa
```

```
AAAAB3NzaC1yc2EAAAADAQABAAQBAQC2INJ3xTJnUepfMyLnqQ
B6IoJESx+44/QKWbLpeWJsJUHaLh6k9nscZVt8OD4XA/cTPCrhrcciC0p
9PHK4xF+HHDavvesQSjTlxzevv5GLFTbGNsyFLvHunpFA1Zwh0YbaAS
JB9VhGkasHwa2uQ2iPDvC5lv20cmsWVXrL9+ODDNpDTrsGv+ntGzjcD
1ETiRjvDXALrUy2c0g8mJQIa92Ie3nQTUtbKZiDsusEE2Px/D2GazgQiuL
Q6n3q4Wyp/WrLJsLV2FVj4I4ZC1DCQWq4UXymKDXebUhIo3jbP5+/hj
C/PDo2mqWS8E4u9fwWofJokIOWFZfnDfOrxdmgPfF ubuntu@ip-172-
31-47-27
```

login at both slaves nodes and paste it into authorized_key section :

```
cd ~/.ssh/
```

echo

```
AAAAB3NzaC1yc2EAAAADAQABAAQBAQC2INJ3xTJnUepfMyLnqQB6IoJE  
Sx+44/QKWbLpeWJsJUHaLh6k9nscZVt8OD4XA/cTPCrhhrcciC0p9PHK4xF+H  
HDavvesQSjTlxzevv5GLFTbGNsyFLvHunpFA1Zwh0YbaASJB9VhGkasHwa2u  
Q2iPDvC5lv20cmsWVXRl9+ODDNpDTrsGv+ntGzjcD1ETiRjvDXALrUy2c0g8  
mJQIa92Ie3nQTUtbKZiDsusEE2Px/D2GazgQiuLQ6n3q4Wyp/WrLJsLV2FVj4I4  
ZCiDCQWq4UXymKDXebUhIo3jbP5+/hjC/PDo2mqWS8E4u9fwWofJokIOWF  
ZfnDfOrxdmgPff ubuntu@ip-172-31-47-27 >> .ssh/authorized_keys
```

Then from jenkins master node ssh login to upcoming slave node at once

```
ssh ubuntu@slave-private-ip
```

4.Install Jenkins at Jenkins master server

```
sudo apt update  
sudo apt install openjdk-8-jdk -y  
wget -q -O - https://pkg.jenkins.io/debian-stable/jenkins.io.key | sudo apt-  
key add -  
sudo sh -c 'echo deb https://pkg.jenkins.io/debian-stable binary/ > \  
/etc/apt/sources.list.d/jenkins.list'  
sudo apt-get install jenkins -y  
service jenkins status  
● jenkins.service - LSB: Start Jenkins at boot time  
   Loaded: loaded (/etc/init.d/jenkins; generated)  
   Active: active (exited) since Fri 2020-10-23 13:35:14 UTC; 1min 37s ago  
     Docs: man:systemd-sysv-generator(8)  
    Process: 19407 ExecStart=/etc/init.d/jenkins start (code=exited,
```

Now login at Jenkins GUI , first need to collect admin password from below file and put it to login page

```
cat /var/lib/jenkins/secrets/initialAdminPassword  
42467d9c18db461687498744acf6c9db
```

And then login and install suggested plugin from GUI page
Finally login to Jenkins GUI

5.Install java at slave nodes

```
sudo apt update  
sudo apt install openjdk-8-jdk -y
```

6.Configure Jenkins slave and connect with master

Login slave node and create directory

```
sudo mkdir -p /home/ubuntu/jenkins
```

```
sudo chmod 777 /home/ubuntu/jenkins
```

Jenkins master GUI -> Manage Jenkins -> Manage node and cloud -> New node -> then below parameters

Node name = testing server

Click permanent agent

Remote root directory = /home/ubuntu/jenkins

Usage = Use this node as much as possible

Launch method = Launch agents via SSH

Host = private ip of the testing server (172.31.36.7)

Then press Add key and give following parameters :

Domain: Global

Kind : SSH username with private key

Username : ubuntu

Private key : copy private key from jenkins master file .ssh/id_rsa file and paste here

Host Key Verification Strategy : Manually trusted verification strategy

Domain	Global credentials (unrestricted)
Kind	SSH Username with private key
Scope	Global (Jenkins, nodes, items, all child items, etc)
ID	
Description	
Username	ubuntu

Private Key

☒ Enter directly

Key

Enter New Secret Below

```
|-----BEGIN RSA PRIVATE KEY-----
MIIEogIBAAKCAQEA22nEfgsJ96SwaCKa0sZhAf28288Jo
mbRE81s/OXu65upuWu
```

Usage

Use this node as much as possible

Launch method

Launch agents via SSH

Host

172.31.12.142

Credentials




ubuntu (testing)

Add

Host Key Verification Strategy

Manually trusted key Verification Strategy

Similar way connect testing production server as well. Then finally you will able to see two slave nodes testing and production server as synced state as showing below

S	Name ↓	Architecture	Clock Difference	Free Disk Space	Free Swap Space	Fr
	master	Linux (amd64)	In sync	5.64 GB	0 B	
	production	Linux (amd64)	In sync	6.02 GB	0 B	
	testing	Linux (amd64)	In sync	6.02 GB	0 B	