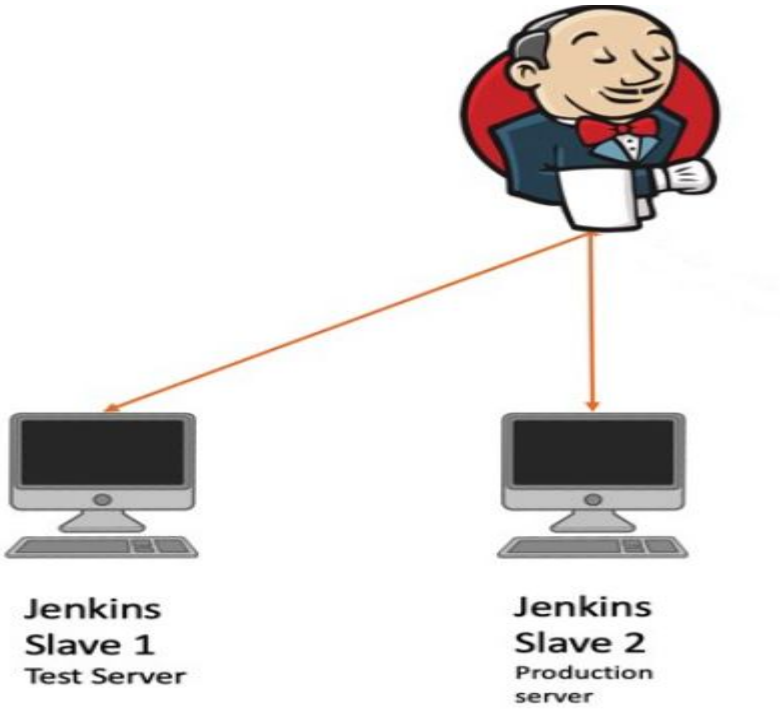
Problem statement : Need to create Jenkins master and slave architecture in AWS like below in AWS . here one instance will be Jenkins master and other two instances will be jenkins slave nodes namely Testing server and Production server



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.

☐	Jenkins master	i-052be4e5d6e698889
☐	production	i-0e3334780d894301b
☐	testing	i-0fc039440982544ed

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

3.Create ssh key at Jenkins master node and copy them to slaves 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
AAAAB3NzaC1yc2EAAAADAQABAAABAQC2INJ3xTJnUepfMyLnqQB6IojESx+44/QKWbLpeWJsJUHaLh6k9nscZVt8OD4XA/cTPCrhhrcciC0p9PHK4xF+HHDavvesQSjTlxzevv5GLFTbGNsyFLvHunpFA1Zwh0YbaASJB9VhGkasHwa2uQ2iPDvC5lv20cmsWVXrL9+ODDNpDTrsGv+ntGzjcD1ETiRjvDXALrUy2c0g8mJQIa92Ie3nQTUtbKZiDsusEE2Px/D2GazgQiuLQ6n3q4Wyp/WrLJsLV2FVj4I4ZClDCQWq4UXymKDXebUhIo3jbP5+/hjC/PDo2mqWS8E4u9fwWofJokIOWFZfnDfOrxdmgPfF ubuntu@ip-172-31-47-27

login at both slaves nodes and paste it into authorized_key section :
cd ~/.ssh/

echo
AAAAB3NzaC1yc2EAAAADAQABAAABAQC2INJ3xTJnUepfMyLnqQB6IojE
Sx+44/QKWbLpeWJsJUHaLh6k9nscZVt8OD4XA/cTPCrhhrcciC0p9PHK4xF+H
HDavvesQSjTlxzevv5GLFTbGNsyFLvHunpFA1Zwh0YbaASJB9VhGkasHwa2u
Q2iPDvC5lv20cmsWVXrL9+ODDNpDTrsGv+ntGzjcD1ETiRjvDXALrUy2c0g8
mJQIa92Ie3nQTUtbKZiDsusEE2Px/D2GazgQiuLQ6n3q4Wyp/WrLJsLV2FVj4I4
ZClDCQWq4UXymKDXebUhIo3jbP5+/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

Finaly 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 :

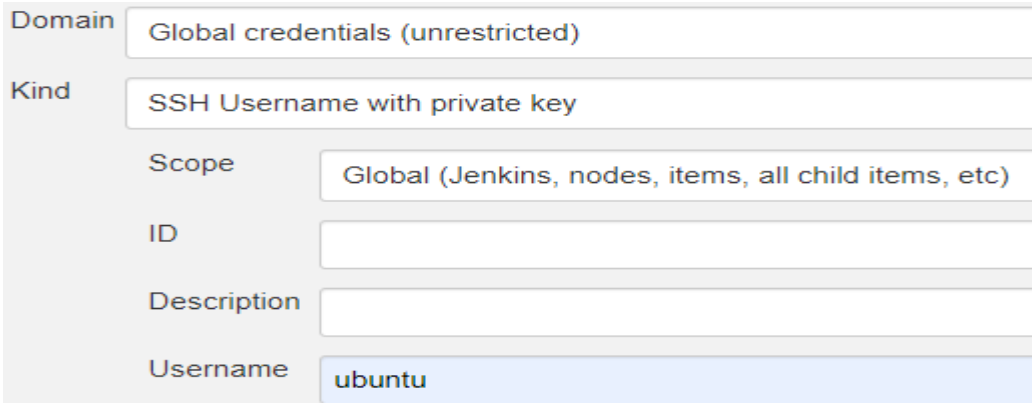
Domain: Global

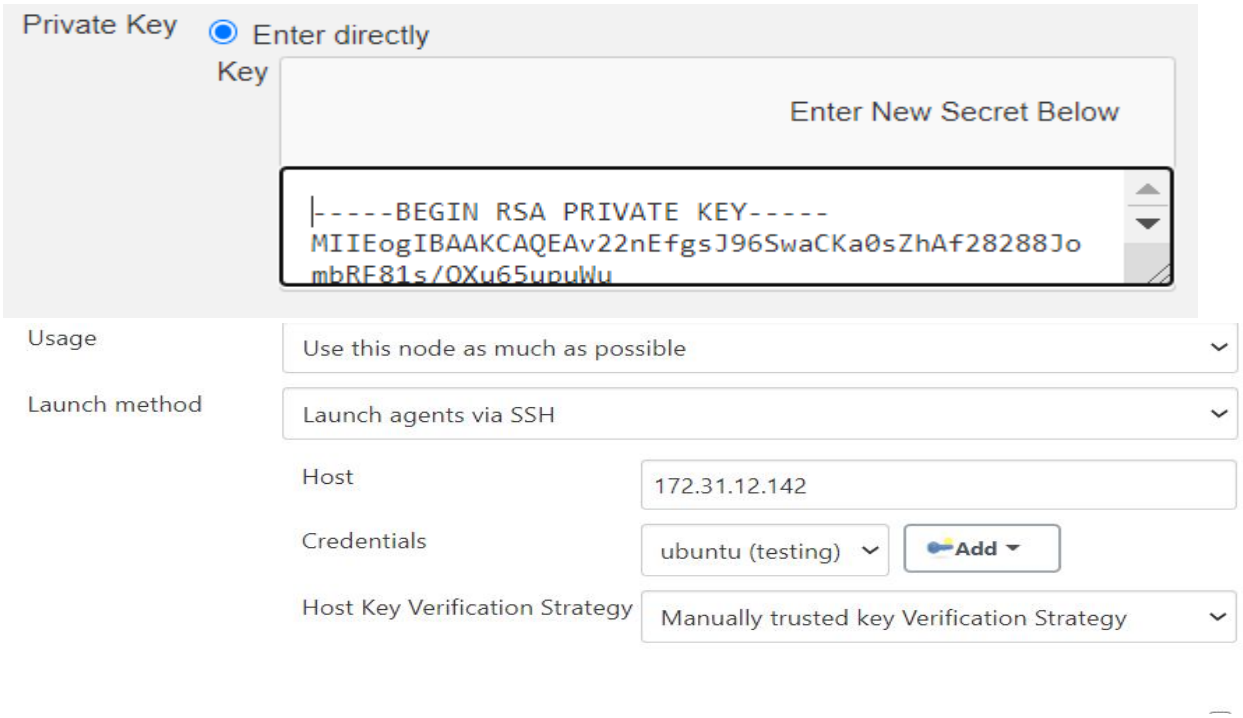
Kind : SSH username with private key

Username : ubuntru

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

Host Key Verification Strategy : Manually trusted verification strategy





Similar way connect 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	