- create three instances master, testand prod- apt get update in all three instances

```
ubuntu@ip-172-31-30-102:~$ 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:XSvqslIoBxS9MemFUXC3fEMV7ssNEulfJxO41+LVztI ubuntu@ip-172-31-30-102
The key's randomart image is:
 ---[RSA 3072]---+
   .00*0 . ..0.
   . *..0 0 0 .
   0...+ + E
      ..0.
  ---[SHA256]----+
ubuntu@ip-172-31-30-102:~$ cat /home/ubuntu/.ssh/id rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABgQCv9NkUVA5odzhM78kns0YiEInNjJ4/XZVREYnz4xUauJ2Bc6CZpRhBdf3WTZ1hDJo0T14ODpRY8LpR+X1qWAMzTr0gp/ONB1sEKpu5xOGMqfE4Fo1vWPSNWPkJAh+ZcpjAixn4
zX2zfZrmri+6XC9n5u/JKMZawgFoGbTL8qmdpAYxtxv0tGHb5do61TgyMv0L60/HKqjA0/02DeE4y9TTwQIrTKZ3CnqTMu5o747XGNkha3sBs+APy6XKy58+BcdGJWstFLBayBNIjT1e06Gt5pd/hxAFEGr7Wg3DUZWCArwLm3/R
5PndwAo7h0reCFEbWRY96FFq8Pf0AQZ3tbp1B0uNRb0UUzIPnQtgbBByw+tcYxbLbbM8PNw5+UCEoiJY2bL6bUxIsWlG/Tgi0F1BJWsYD48T7BUVRGv5D0tAqL2TiW4DLJ5vrgruSV1pGm4N5p/9imITFdZozvEpOuTHnRVZ6q5T
LeA2PgKn1POazyER4IUB9PRt5thDQDD6d5E= ubuntu@ip-172-31-30-102
ubuntu@ip-172-31-30-102:~$ 🗍
```

```
ubuntu@ip-172-31-30-102:~$ ansible -m ping all
Enter passphrase for key '/home/ubuntu/.ssh/id_rsa': 172.31.22.86 | SUCCESS => {
    "ansible facts":
        "discovered interpreter python": "/usr/bin/python3"
    "changed": false,
    "ping": "pong"
172.31.24.165 | SUCCESS => {
    "ansible facts": {
        "discovered interpreter python": "/usr/bin/python3"
    "changed": false,
    "ping": "pong"
ubuntu@ip-172-31-30-102:~$ 🗍
```

```
ubuntu@ip-172-31-30-102:~$ sudo nano master.ssh
ubuntu@ip-172-31-30-102:~$ sudo nano master.sh
ubuntu@ip-172-31-30-102:~$ sudo nano slave.sh
ubuntu@ip-172-31-30-102:~$ rm master.ssh
rm: remove write-protected regular file 'master.ssh'? yes
ubuntu@ip-172-31-30-102:~$ ls
master.sh slave.sh
ubuntu@ip-172-31-30-102:~$ cat master.sh
sudo apt update
sudo apt install openjdk-11-jdk -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
ubuntu@ip-172-31-30-102:~$ cat slave.sh
sudo apt update
sudo apt install openjdk-11-jdk -y
sudo aptn install docker.io -y
ubuntu@ip-172-31-30-102:~$ 🗍
```

```
PLAY [Installation in Master] *********
ok: [localhost]
changed: [localhost]
Enter passphrase for key '/home/ubuntu/.ssh/id rsa':
sid
changed: [172.31.17.51]
changed: [172.31.17.60]
172.31.17.51
         : ok=2
             changed=1
                            skipped=0
                                      ignored=0
                  unreachable=0
                        failed=0
                                 rescued=0
172.31.17.60
         : ok=2
             changed=1
                        failed=0
                            skipped=0
                  unreachable=0
                                 rescued=0
                                      ignored=0
             changed=1
         : ok=2
                            skipped=0
localhost
                        failed=0
                                      ignored=0
                  unreachable=0
                                 rescued=0
ubuntu@ip-172-31-30-33:~$ ∏
```

i-0ebb3018a4288836d (Master)

PublicIPs: 13.53.198.31 PrivateIPs: 172.31.30.33

ubuntu@ip-172-31-17-51:~\$ sudo nano .ssh/authorized_keys ubuntu@ip-172-31-17-51:~\$ which java /usr/bin/java ubuntu@ip-172-31-17-51:~\$ which docker /usr/bin/docker ubuntu@ip-172-31-17-51:~\$ []

i-032caa78ab0c8ce96 (Test)

PublicIPs: 51.20.92.154 PrivateIPs: 172.31.17.51

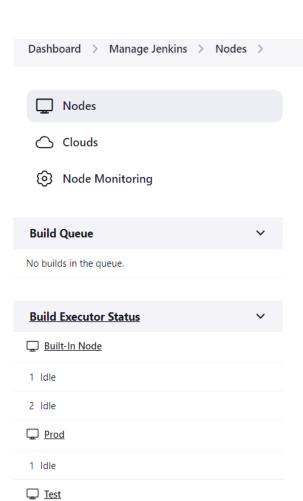
ubuntu@ip-172-31-17-60:~\$ sudo nano .ssh/authorized_keys ubuntu@ip-172-31-17-60:~\$ which java /usr/bin/java ubuntu@ip-172-31-17-60:~\$ which docker /usr/bin/docker ubuntu@ip-172-31-17-60:~\$ [

i-018d520fc704a9691 (Prod) PublicIPs: 51.20.70.239 PrivateIPs: 172.31.17.60

```
ubuntu@ip-172-31-30-33:~$ which jenkins
/usr/bin/jenkins
ubuntu@ip-172-31-30-33:~$ which java
/usr/bin/java
ubuntu@ip-172-31-30-33:~$ cat install.yaml
- name: Installation in Master
  hosts: localhost
  become: true
  tasks:
   - name: Run master.sh
     script: master.sh
 - name: Installation in Slaves
  hosts: all
  become: true
  tasks:
   - name: Run slave.sh
     script: slave.sh
ubuntu@ip-172-31-30-33:~$
```

i-0ebb3018a4288836d (Master)

PublicIPs: 13.53.198.31 PrivateIPs: 172.31.30.33



1 Idle

Nodes



S	Name ↓	Architecture	Clock Difference	Free Disk Space	Free Swap Space	Free Temp Space	Response Time
	Built-In Node	Linux (amd64)	In sync	4.36 GB	1 0 B	4.36 GB	0ms 🧔
	Prod	Linux (amd64)	In sync	5.08 GB	① 0 B	5.08 GB	94ms 🧿
_	Test	Linux (amd64)	In sync	5.08 GB	① 0 B	5.08 GB	59ms 🧿
	Data obtained	0.27 sec	0.27 sec	0.27 sec	0.27 sec	0.27 sec	0.27 sec



```
ubuntu@ip-172-31-19-54:~$ sudo nano .ssh/authorized keys
ubuntu@ip-172-31-19-54:~$ which java
/usr/bin/java
ubuntu@ip-172-31-19-54:~$ which docker
/usr/bin/docker
ubuntu@ip-172-31-19-54:~$ sudo docker images
REPOSITORY
              TAG
                        IMAGE ID
                                       CREATED
                                                        SIZE
masterapp
                        94d33632c5d5
                                       41 seconds ago
                                                        303MB
              latest
developapp
                        0004dd9cf95b
              latest
                                       30 minutes ago
                                                        303MB
hshar/webapp
              latest
                        0cbc1f535ed8
                                                        303MB
                                       4 years ago
ubuntu@ip-172-31-19-54:~$ sudo docker ps
CONTAINER ID
              IMAGE
                           COMMAND
                                                    CREATED
                                                                         STATUS
                                                                                             PORTS
                                                                                                                                 NAMES
                                                                                                                                 unruffled cerf
                                                                         Up About a minute
21ab9181311e
                           "/bin/sh -c 'apachec..."
                                                    About a minute ago
                                                                                             0.0.0.0:81->80/tcp, :::81->80/tcp
              masterapp
                                                                                                                                 quizzical thompson
3548f9f69dab
                           "/bin/sh -c 'apachec..."
                                                    31 minutes ago
                                                                         Up 31 minutes
                                                                                             0.0.0.0:82->80/tcp, :::82->80/tcp
              developapp
ubuntu@ip-172-31-19-54:~$
```









```
ubuntu@ip-172-31-20-137:~$ sudo nano .ssh/authorized keys
ubuntu@ip-172-31-20-137:~$ which java
/usr/bin/java
ubuntu@ip-172-31-20-137:~$ which docker
/usr/bin/docker
ubuntu@ip-172-31-20-137:~$ sudo docker images
REPOSITORY
              TAG
                        IMAGE ID
                                      CREATED
                                                       SIZE
finalrelease latest
                        7c83af73e4d3
                                      41 seconds ago
                                                      303MB
                       Ocbc1f535ed8 4 years ago
hshar/webapp latest
                                                       303MB
ubuntu@ip-172-31-20-137:~$ sudo docker ps
CONTAINER ID IMAGE
                        COMMAND CREATED
                                          STATUS
                                                     PORTS
                                                               NAMES
ubuntu@ip-172-31-20-137:~$ sudo docker ps
CONTAINER ID IMAGE
                        COMMAND CREATED STATUS
                                                     PORTS
                                                              NAMES
ubuntu@ip-172-31-20-137:~$ sudo docker ps -a
CONTAINER ID IMAGE
                            COMMAND
                                                     CREATED
                                                                         STATUS
                                                                                                        PORTS
                                                                                                                  NAMES
9809e821f210 finalrelease "/bin/sh -c 'apachec..." About a minute ago Exited (0) About a minute ago
                                                                                                                  optimistic jennings
ubuntu@ip-172-31-20-137:~$ sudo docker logs 9809e821f210
AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 172.17.0.2. Set the 'ServerName' directive globally to suppress this message
httpd (pid 8) already running
ubuntu@ip-172-31-20-137:~$ sudo docker images
REPOSITORY
                        IMAGE ID
                                      CREATED
              TAG
                                                      SIZE
                       7c83af73e4d3 9 minutes ago
finalrelease latest
                                                      303MB
hshar/webapp latest
                       Ocbc1f535ed8 4 years ago
                                                      303MB
ubuntu@ip-172-31-20-137:~$ sudo docker ps
CONTAINER ID IMAGE
                            COMMAND
                                                     CREATED
                                                                     STATUS
                                                                                     PORTS
                                                                                                                        NAMES
c7f2c8eadce4 finalrelease
                            "/bin/sh -c 'apachec..."
                                                    52 seconds ago
                                                                    Up 51 seconds
                                                                                    0.0.0.0:80->80/tcp, :::80->80/tcp vibrant vaughan
ubuntu@ip-172-31-20-137:~$ 🗍
```

i-03be57beb899c0322 (Prod)

PublicIPs: 16.171.115.205 PrivateIPs: 172.31.20.137

Hello world!

