Opentext Challenge- By Shivam Namdeo

I. Ansible Playbooks

1) Create an Ubuntu EC2 instance (16.04 version)
2) Allow inbound traffic by allowing SSH rules
3) Install Ansible in our host Ubuntu VM

```
sudo apt-add-repository ppa:ansible/ansible
sudo apt-get update
sudo apt-get install ansible
```

4) Install docker using ansible playbook-

- Vim hosts

```
[group A]
all

[all:vars]
ansible_connection=local
```

- Vim docker.yml

```
---
  - hosts: group A
    tasks:
    - name:    Install prerequisites
      apt:     name={{item}} update_cache=yes
      with_items:
       - apt-transport-https
       - ca-certificates
       - curl
       - software-properties-common
    - name:    Add Docker GPG key
      apt_key: url=https://download.docker.com/linux/ubuntu/gpg
    - name:    Add Docker APT repository
      apt_repository:
        repo: deb [arch=amd64] https://download.docker.com/linux/ubuntu
    {{ansible_distribution_release}} stable
    - name:    Install Docker
      apt:     name=docker-ce
```

5) Check if docker is installed

   sudo docker run hello-world

6) Create 3 docker containers

   sudo docker run -itd --name **ansible_master** ubuntu /bin/bash
   sudo docker run -itd --name **target2** ubuntu /bin/bash

   sudo docker run -itd --name **targer3** ubuntu /bin/bash

7) sudo docker ps //it will show all the docker containers
8) sudo docker exec -it ansible_master bash //it will start bash process in ansible_master

9) apt update //update ubuntu

10) apt install python ansible vim iputils-ping openssh-client -y

11) ansible -version //check ansible version

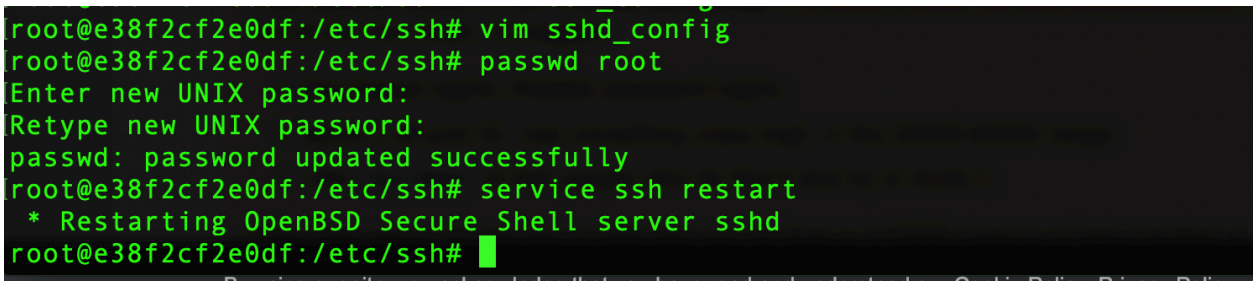
12) exit //exit ansible_master

13) sudo docker exec -it target1 bash //open target1 docker container
14) apt update //update it
15) apt install openssh-server /install open ssh server in this container
16) apt install python ansible vim iputils-ping openssh-client -y

17) cd /etc/ssh //go to ssh
18) vim sshd_config //open sshd_config and update below value

   PermitRootLogin- Yes
   :wq!

19) passwd root //change password
20) service ssh restart //restart ssh service
21) service ssh status //check ssh status



* sshd is running

22) Login to target 2 now and repeat the steps

sudo docker exec -it target2 bash
apt update
apt install openssh-server
apt install python ansible vim iputils-ping openssh-client -y

cd /etc/ssh

vim sshd_config

PermitRootLogin- Yes
:wq!

passwd root
service ssh restart
service ssh status
exit //exit target 2

23) Sudo docker inspect target1 // Check ip of target1

24) Sudo docker inspect target2 // Check ip of target2

25) Sudo docker ps //check docker processes
26) Sudo docker exec -it ansible_master bash //go to master again

27) cd /etc/ansible //go to ansible directory
28) ls -ltr

29) vi hosts //mention both the target ip addresses in this file

172.17.0.3
172.17.0.4

:wq!

30) Try to ping now
ping 172.17.0.3
ping 172.17.0.4

31) ssh-keygen //generate public rsa key

32) ssh-copy-id root@172.17.0.3 //copy rsa pub key to targert 1
33) ssh-copy-id root@172.17.0.4 // copy rsa pub key to targert 2

34) Try to ssh into your target container

ssh root@172.17.0.3 //successful
exit

ssh root@172.17.0.4 //successful
exit

sudo docker ps //check docker processes

35) Go to home directory in ansible_master

cd

36) Vim install_nginx.yml //create install_nginx.yml and input below data

-hosts:all

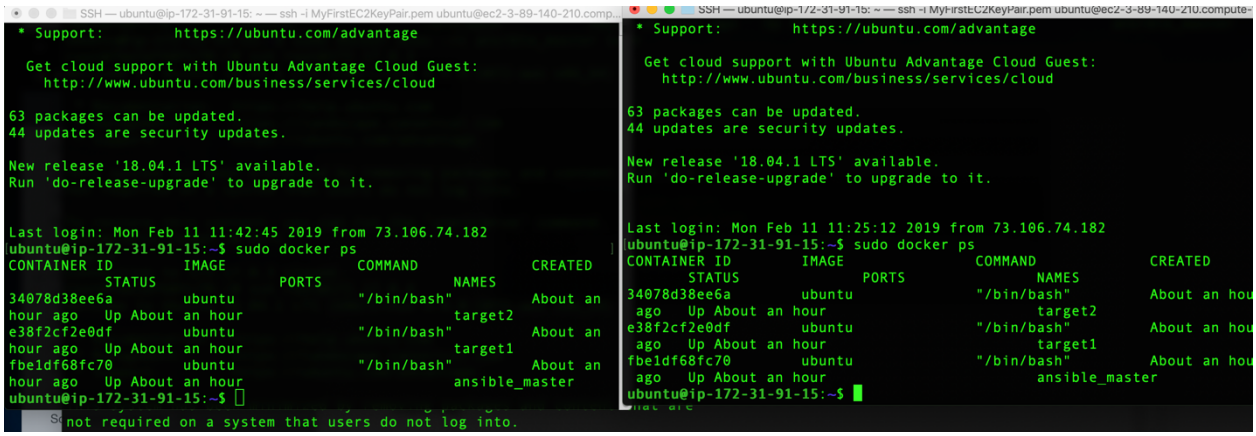
tasks:
-name:ensure nginx is at the latest version
apt: name=nginx state=latest

-name: start nginx
service:
name:nginx
state:started

```
---

-hosts:all

tasks:
        -name:ensure nginx is at the latest version
        apt: name=nginx state=latest

        -name: start nginx
        service:
                name:nginx
                state:started

~
~
~
~
```

37) Open two more terminals and login to EC2 instance

38) Check sudo docker ps on both the new terminals

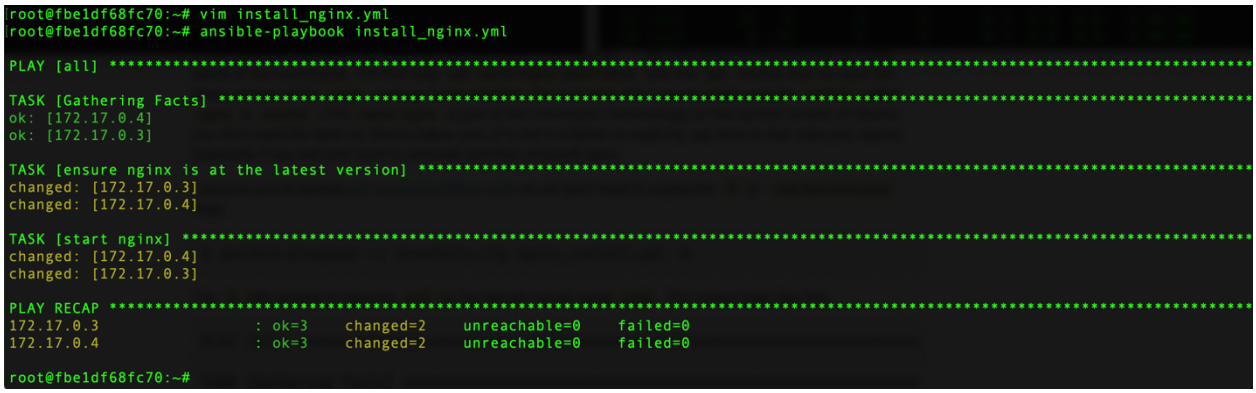


On the second terminal

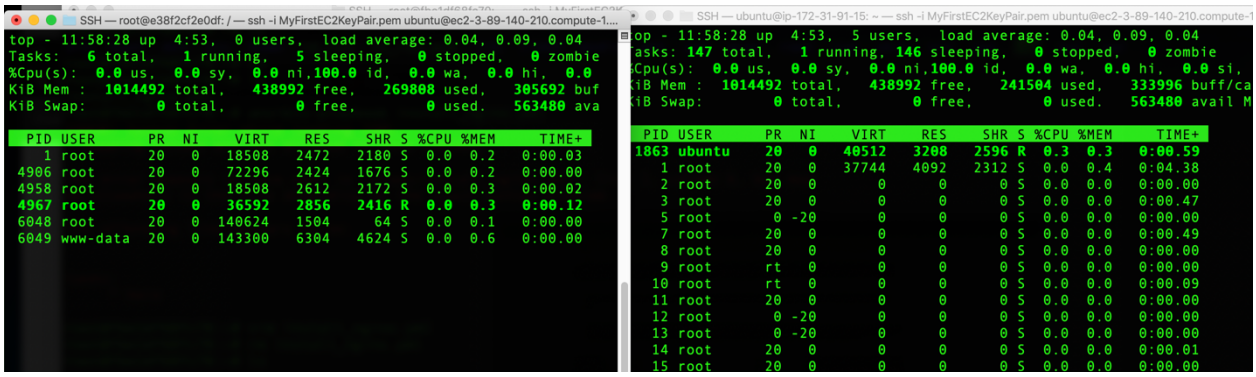
sudo docker exec -it target1 bash
top //no nginx running

On the third terminal
sudo docker exec -it target2 bash
top //no nginx running

39) ansible-playbook install_nginx.yml //run the playbook on the main terminal



40) nginx will start in the **target containers** as well



II. Static website on AWS

Create a new directory in our ubuntu vm

mkdir mysite //create a new doirectory

cd mysite //change directory to mysite

vim index.html //change the content of index.html

<html>
<header><title>Hello World !! </title></header>
<body>
Hello world by Shivam Namdeo
</body>
</html>

docker run -d -P -v $HOME/mysite:/usr/share/nginx/html \
//run a new docker container using nginx

A new prompt will open

- --name mysite nginx
  It will give you info about your ports

  sudo docker inspect <containername>

  Open browser and type the url with the port number //That's it

  docker stop mysite //to stop mysite

  docker ps -a //list all docker containers

  docker start mysite //start again
  docker port mysite //port number changes every time so make sure you start it again

III. <u>Since my above approach didn't work out on AWS instance, I did this challenge with an alternate approach</u>

In the main Ubuntu terminal perform below steps-

sudo apt update	//Update Ubuntu
sudo apt-get install nginx	//Install nginx
cd /etc	//go to etc directory
ls -ltr	//list files and directories
cd nginx/	//go to nginx directory
ls -ltr	//list files and directories
cat nginx.conf	//Check the content of nginx.conf
sudo vim nginx.conf	//update nginx.conf with below data

```
events{

}

http {

        server {
                location / {
                        root /data/www;
                }

        }
}
~
```

We have changed the root in this so that our nginx won't redirect to default html

ls -ltr	//list files and directories
cd sites-enabled/	//go to sites-enabled directory
ls -ltr	//list files and directories

cat default //check default file. root /var/www/html; By default nginx points to this default html path

mkdir -p /data /www	//create data and www directories
cd /data/www	//go to /data/www
sudo vim index.html	//create index.html

```
<!DOCTYPE html>
<html>
<body>

<h1>Hello World by Shivam Namdeo !!!</h1>
<p id="demo">Try below button !! </p>
<button type="button" onclick="myFunction()">Try it</button>

<script>
function myFunction() {
 document.getElementById("demo").innerHTML = "Do you like it ? Let me know ASAP ";
}
</script>

</body>
</html>
~
~
```

sudo service nginx reload //reload nginx service

Now try to access the public ip address of your ubuntu VM by its public ip

http://3.89.140.210/