Create one vm in GCP and use ssh to login into it then create 3 ubuntu container inside it

Apt update && apt install docker.io -y

docker run -itd --name ansible_master ubuntu
docker run -itd --name target1 ubuntu
docker run -itd --name target2 ubuntu

```
root@cloudchuck:~# docker ps -a
CONTAINER ID   IMAGE     COMMAND       CREATED              STATUS              PORTS     NAMES
dda12acfcd02   ubuntu    "/bin/bash"   About a minute ago   Up About a minute             target2
500dfc5ae676   ubuntu    "/bin/bash"   About a minute ago   Up About a minute             target1
82a412060810   ubuntu    "/bin/bash"   2 minutes ago        Up 2 minutes                  ansible_master
```

docker exec -it ansible_master /bin/bash

install required services inside master

apt install vim openssh-client iputils-ping python3-is-python -y

install ansible inside the master

apt install software-properties-common
add-apt-repository --yes --update ppa:ansible/ansible
apt install ansible

Now login to target 1

docker exec -it target1 /bin/bash

apt update && apt install vim python-is-python3 openssh-client openssh-server iputils-ping -y

Exit

Follow the same cmd in all targets

docker exec -it target2 /bin/bash

apt update && apt install vim python-is-python3 openssh-client openssh-server iputils-ping -y

Exit

—----------

Next do configuration of SSH connection in all machine

First go to target machine 1 and do changes in ssh key file

docker exec -it target1 /bin/bash

Do changes in sshd_config file which is placed at /etc/ssh place

cd /etc/ssh
vi sshd_config

modify the permission to yes
PermitRootLogin yes
PasswordAuthentication yes

save it

Start the service ssh if its not running
service ssh status
service ssh start
service ssh status

now create password

passwd root
admin
admin

then exit

from main machine check ip for all container
docker inspect target1
docker inspect target2

let;s take ex target1 -172.17.0.3
and target 2 internal ip 172.17.0.4

now come inside the ansible and share keys

docker exec -it ansible_master /bin/bash

ssh-keygen enter 3times

Key pub and private will be generated

now we need to copy public key from this location to authorize.key location of target1 machine

ssh-copy-id root@172.17.0.3

now check if it's working or not

ssh root@172.17.0.3

by using this cmd we will inside the target1 using

exit

—----------

now you come back to ansible master

her go to this location

cd /etc/ansible

here all the ansible config files there and hosts file is there

we need to open hosts file to add internal ip inside it

vi hosts

add

172.17.0.3
172.17.0.4

save it

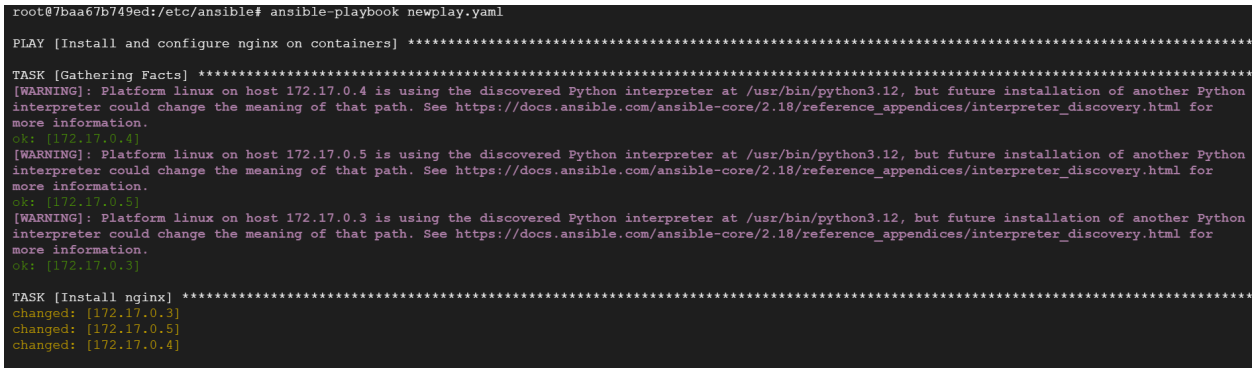
now create one yaml with

vi new.yaml

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

save it

then run cmd
ansible-playbook new.yaml



this will install nginx in 1 machine and give error for 2nd machine as we need to all setup ssh in target 2 machine as well

now uninstall ngix using this playbook we need to copy this code new 2nd file like uni.yaml

```
---
- hosts: all
  tasks:
    - name: ensure nginx is not installed
      apt: name=nginx state=absent
```

ansible-playbook uni.yaml

```
root@7baa67b749ed:/etc/ansible# ansible-playbook uninstall.yaml

PLAY [all] ***********************************************************************************************************************************************************

TASK [Gathering Facts] ***********************************************************************************************************************************************
[WARNING]: Platform linux on host 172.17.0.3 is using the discovered Python interpreter at /usr/bin/python3.12, but future installation of another Python
interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.18/reference_appendices/interpreter_discovery.html for
more information.
ok: [172.17.0.3]
[WARNING]: Platform linux on host 172.17.0.5 is using the discovered Python interpreter at /usr/bin/python3.12, but future installation of another Python
interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.18/reference_appendices/interpreter_discovery.html for
more information.
ok: [172.17.0.5]
[WARNING]: Platform linux on host 172.17.0.4 is using the discovered Python interpreter at /usr/bin/python3.12, but future installation of another Python
interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.18/reference_appendices/interpreter_discovery.html for
more information.
ok: [172.17.0.4]

TASK [ensure nginx is not installed] *********************************************************************************************************************************
changed: [172.17.0.5]
changed: [172.17.0.3]
changed: [172.17.0.4]

PLAY RECAP ***********************************************************************************************************************************************************
172.17.0.3                 : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
172.17.0.4                 : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
172.17.0.5                 : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```

Task 4 do it from IP

```
root@7baa67b749ed:/etc/ansible# ansible-playbook -i "172.17.0.3,172.17.0.4,172.17.0.5" instal.yaml

PLAY [all] ***********************************************************************************************************************************************************

TASK [Gathering Facts] ***********************************************************************************************************************************************
[WARNING]: Platform linux on host 172.17.0.5 is using the discovered Python interpreter at /usr/bin/python3.12, but future installation of another Python
interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.18/reference_appendices/interpreter_discovery.html for
more information.
ok: [172.17.0.5]
[WARNING]: Platform linux on host 172.17.0.3 is using the discovered Python interpreter at /usr/bin/python3.12, but future installation of another Python
interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.18/reference_appendices/interpreter_discovery.html for
more information.
ok: [172.17.0.3]
[WARNING]: Platform linux on host 172.17.0.4 is using the discovered Python interpreter at /usr/bin/python3.12, but future installation of another Python
interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.18/reference_appendices/interpreter_discovery.html for
more information.
ok: [172.17.0.4]

TASK [ensure nginx is at the latest version] *************************************************************************************************************************
changed: [172.17.0.5]
changed: [172.17.0.4]
changed: [172.17.0.3]

PLAY RECAP ***********************************************************************************************************************************************************
172.17.0.3                 : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
172.17.0.4                 : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
172.17.0.5                 : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```

Advance things—----------

instead of doing in password wise we can do it password less doing this changes in ssh file

go inside the ansible master file create pub and private key

ssh-keygen -t rsa -b 4096 -C "master@container"

OR

ssh-keygen

as

- `-t rsa`: Generates an RSA key
- `-b 4096`: Uses 4096-bit encryption (more secure)
- `-C`: Adds a comment (usually your email)

go inside the below location here our public key are present

cat ~/.ssh/id_rsa.pub

now copy then and paste in targets machine

docker exec -it target1 /bin/bash

cd ~/.ssh

echo "PASTE_PUBLIC_KEY_HERE" >> ~/.ssh/authorized_keys
chmod 600 ~/.ssh/authorized_keys

Then come to below loc

cd /etc/ssh

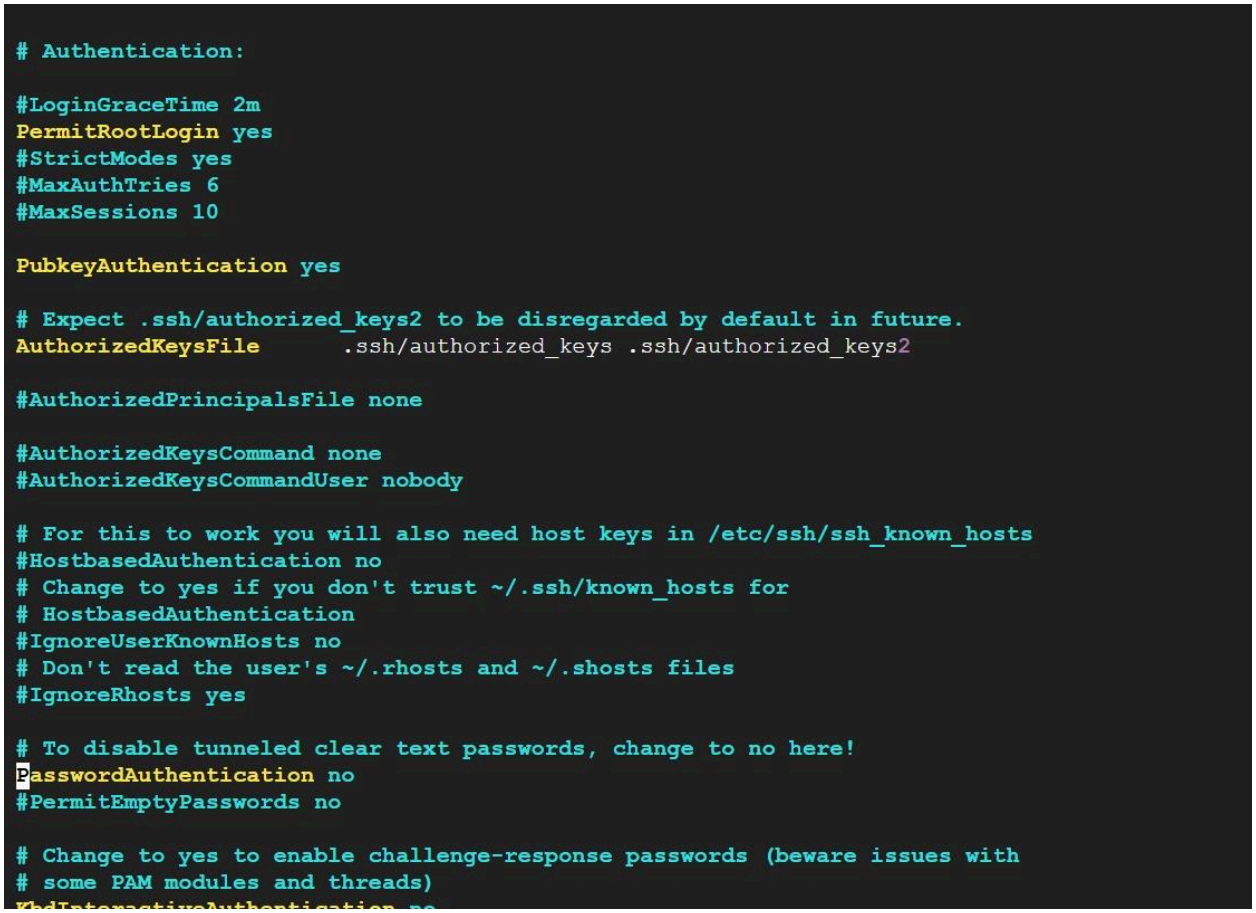
ls -la

there will be sshd_config

configure this –

uncomment below with these cmd

PermitRootLogin yes —this will allow root to login
PubkeyAuthentication yes —--- this will allow pubkey to authenticate
AuthorizedKeysFile .ssh/authorized_keys .ssh/authorized_keys2 —this authorizekeys
PasswordAuthentication no —----this make passauthenticator enable without password



DONE

do service ssh restart

exit

go back to ansible and check

if you are able to connect target from here

ssh root@172.17.0.3

great we are inside target

```
root@7baa67b749ed:/# ssh root@172.17.0.4
Welcome to Ubuntu 24.04.2 LTS (GNU/Linux 5.15.0-1078-gcp x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

This system has been minimized by removing packages and content that ar
not required on a system that users do not log into.

To restore this content, you can run the 'unminimize' command.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

root@9ef096a9d857:~# exit
logout
Connection to 172.17.0.4 closed.
root@7baa67b749ed:/# docker ps
bash: docker: command not found
```