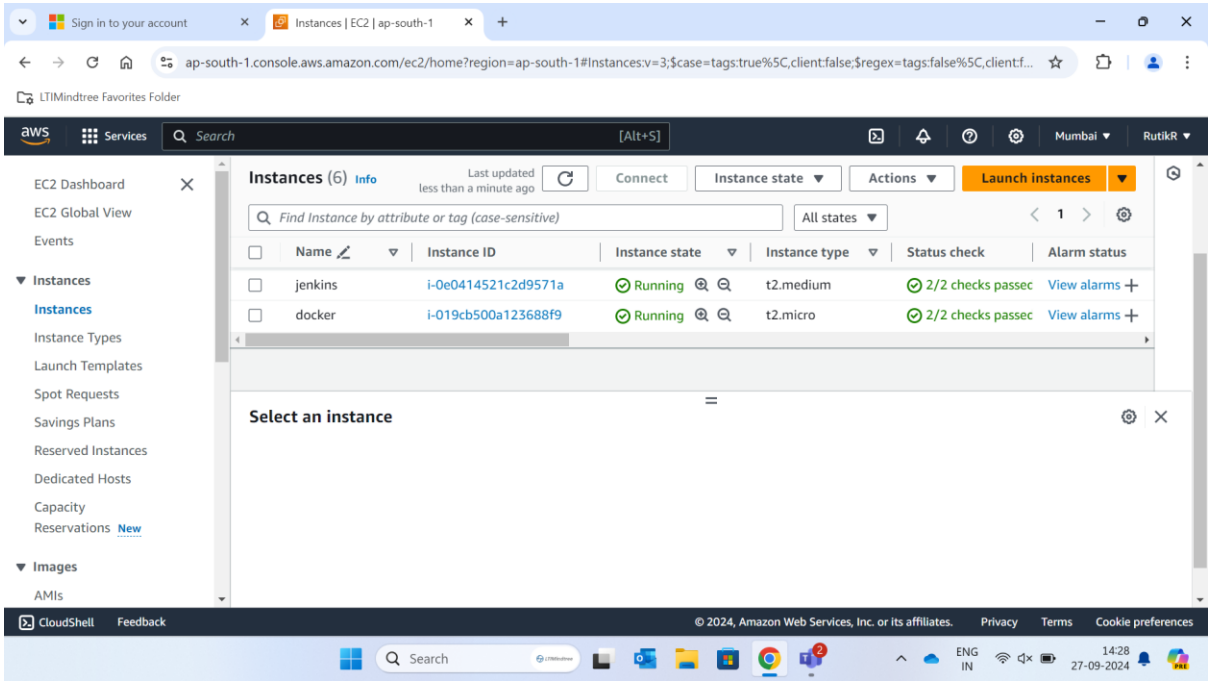
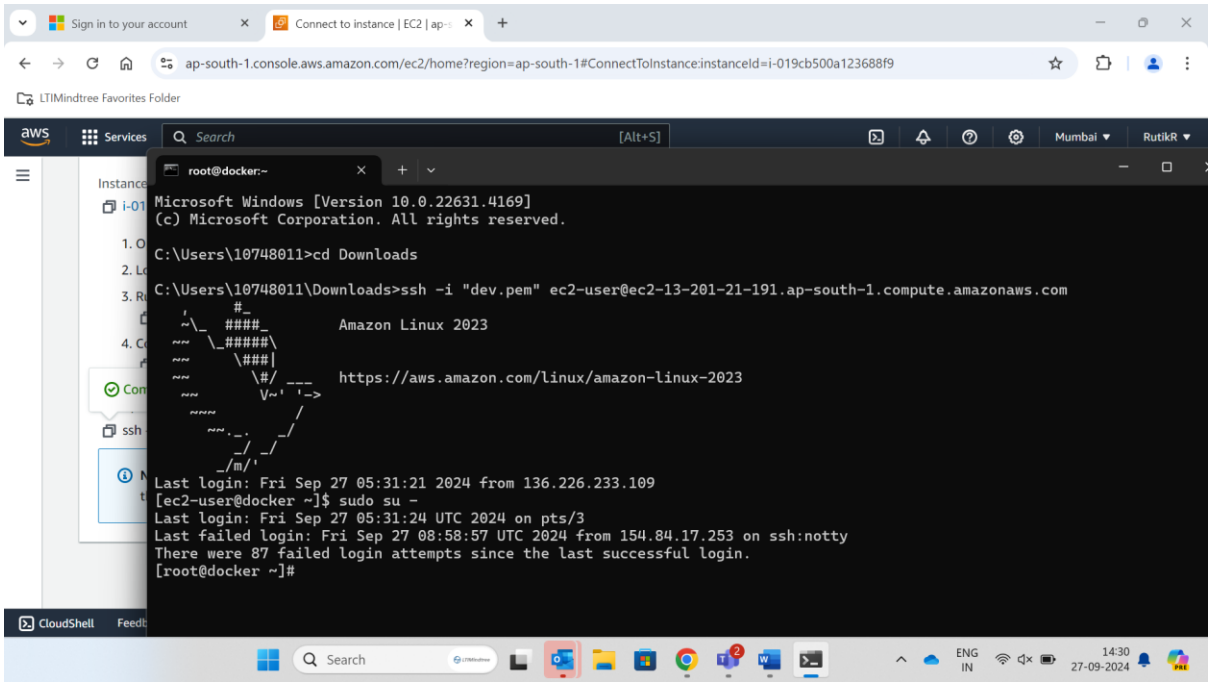
Q1) Pull the Ubuntu image from Docker hub and Launch a web application in the container on port no. 8080 and this application should be reachable globally.

Steps:

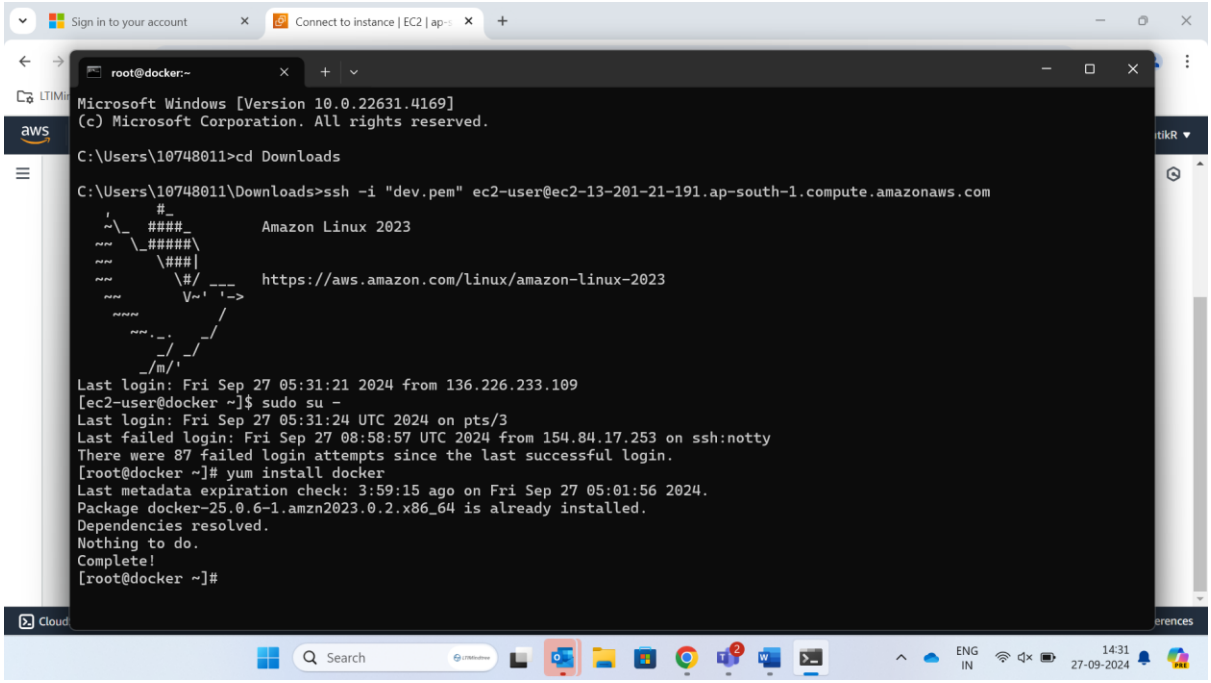
Created instance where I can configure docker to use it .



Connected to instance to access it.

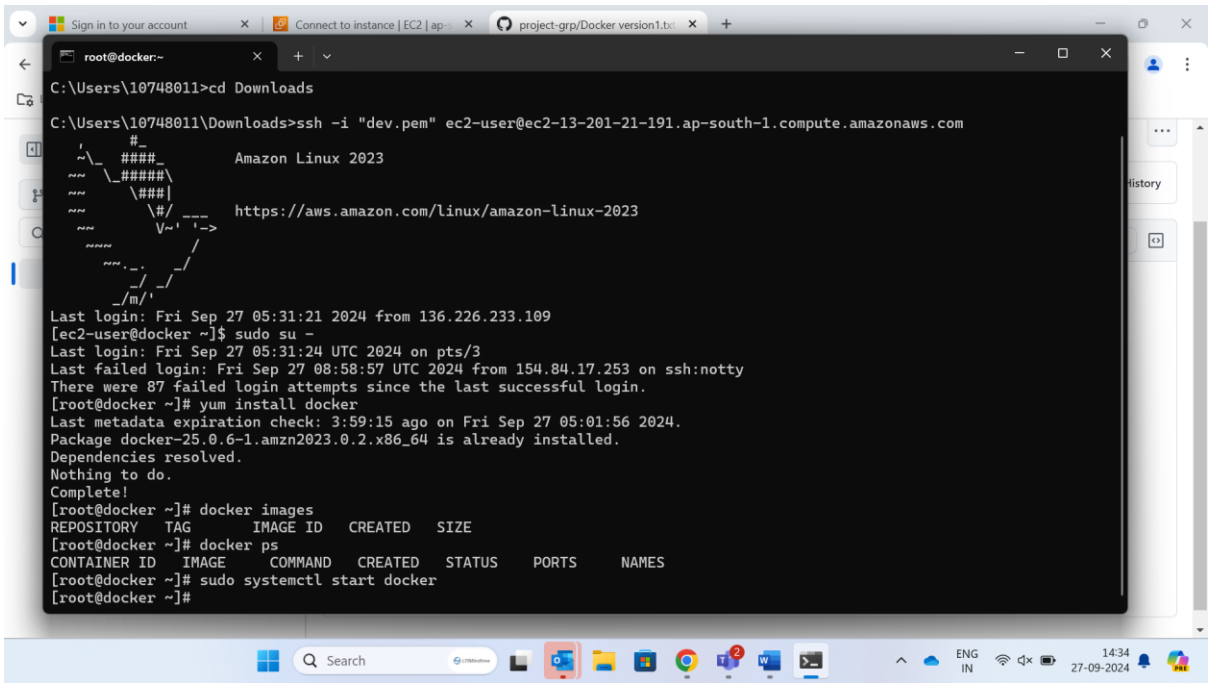


Now install docker using yum install docker -y command



Package is there as I am using existing instance.

Docker is started and checked if images and container exixts.



There were no images so pulled image of ubuntu from docker hub.

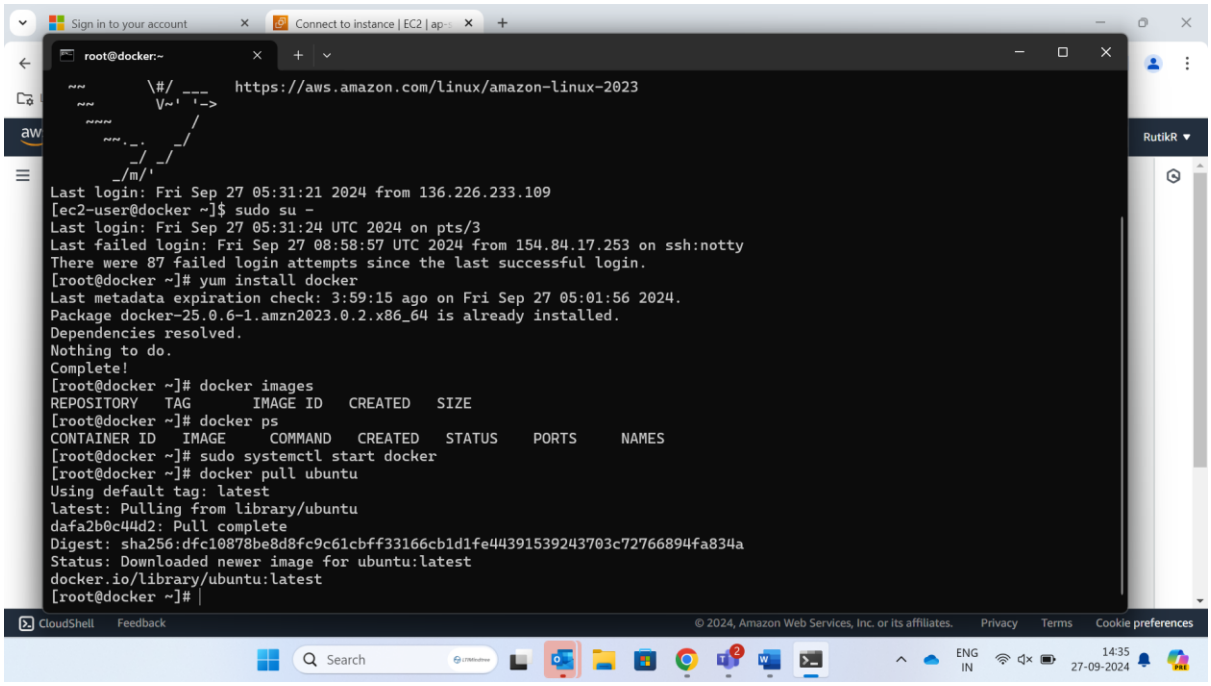


Image is successufully pulled .

```
docker.io/library/ubuntu:latest
[root@docker ~]# docker images
REPOSITORY    TAG       IMAGE ID       CREATED       SIZE
ubuntu        latest    b1e9cef3f297   4 weeks ago   78.1MB
[root@docker ~]#
```

Created container with the help of docker command and attached this image to it.

```
REPOSITORY    TAG       IMAGE ID       CREATED       SIZE
ubuntu        latest    b1e9cef3f297   4 weeks ago   78.1MB
[root@docker ~]# docker run -it --name container1 -p 8080:80 ubuntu:latest bin/bash
```

Installed apache and started the service. Also created index.html to host it globally.

```
Running hooks in /etc/ca-certificates/update.d...
done.
root@04c08deb18e6:/# service apache2 start
 * Starting Apache httpd web server apache2
AH00558: apache2: Could not reliably determine the server's fully qua
erName' directive globally to suppress this message
 *
root@04c08deb18e6:/# cd /var/www/html
root@04c08deb18e6:/var/www/html# ls
index.html
root@04c08deb18e6:/var/www/html# cat > index.html
<h1> Hi, Welcome to this site! <h1>
root@04c08deb18e6:/var/www/html# cat index.html
<h1> Hi, Welcome to this site! <h1>
root@04c08deb18e6:/var/www/html# cd
root@04c08deb18e6:~#
```

```
1  apt update
2  apt install apache2
3  service apache2 start
4  cd /var/www/html
5  ls
6  cat > index.html
7  cat index.html
8  cd
9  history
t@04c08deb18e6:~#
```

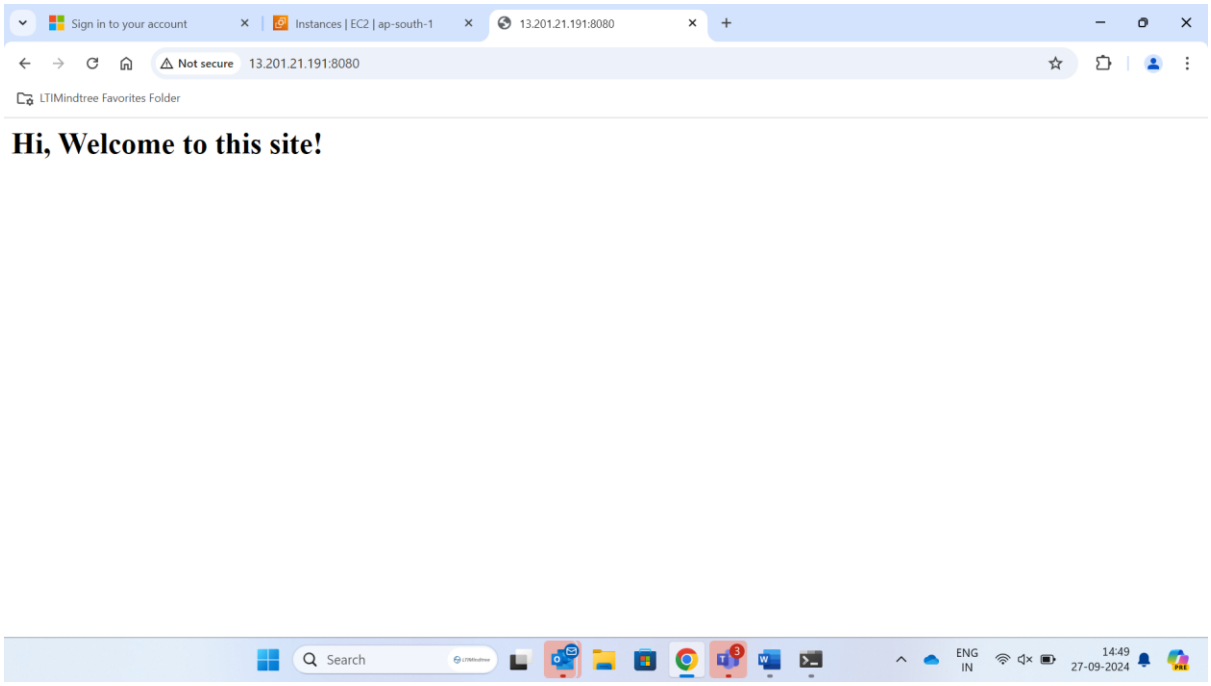
Exited container to check if it is available or not.

```
[root@docker ~]# docker ps
CONTAINER ID   IMAGE          COMMAND      CREATED         STATUS         PORTS                                       NAMES
04c08deb18e6   ubuntu:latest   "bin/bash"   9 minutes ago   Up 9 minutes   0.0.0.0:8080->80/tcp, :::8080->80/tcp   conta
iner1
[root@docker ~]#
```

The website is available globally. Using public ip of instance.

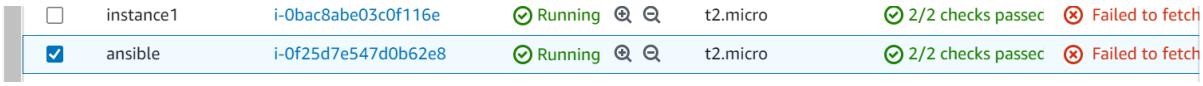
```
[root@docker ~]# curl http://172.17.0.1:8080
<h1> Hi, Welcome to this site! <h1>
[root@docker ~]#
```

The website is hosted and available globally


Sign in to your account
Instances | EC2 | ap-south-1
13.201.21.191:8080
Not secure
13.201.21.191:8080
LTIMindtree Favorites Folder
Hi, Welcome to this site!
Search
ENG
IN
14:49
27-09-2024

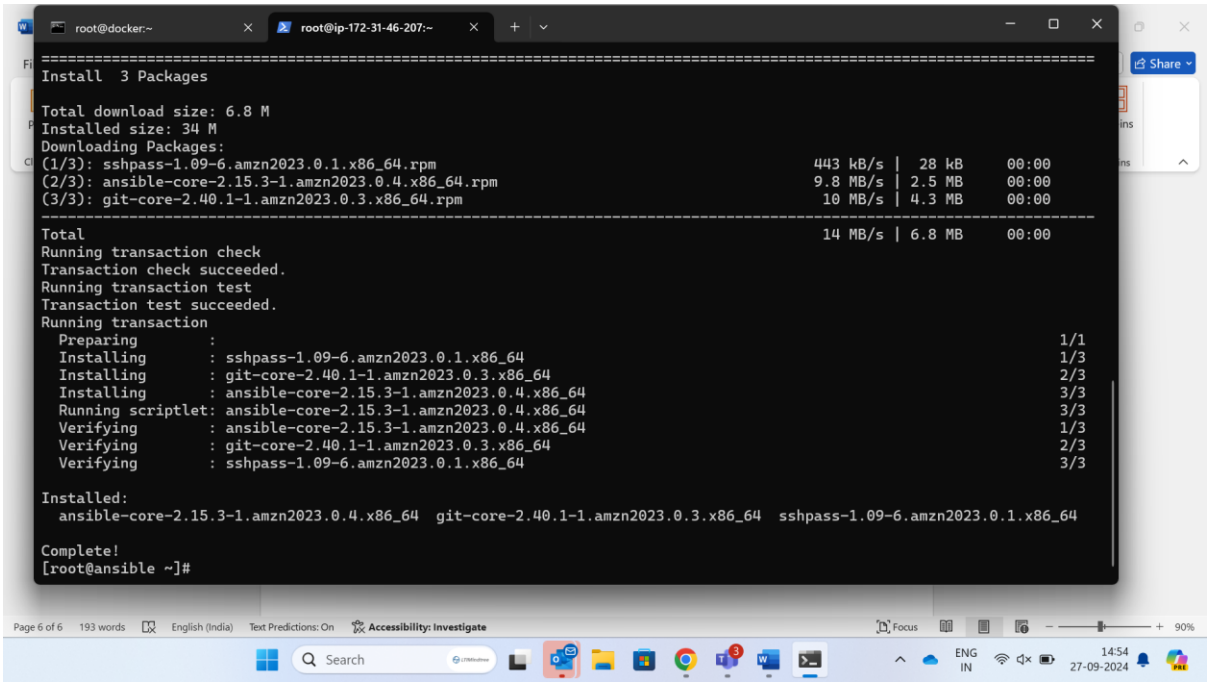
Q2) using of the Ansible configuration management tool install httpd package and start and make it enable of this service. and copy a fstab file in the /tmp folder on the remote server via Playbook.

Created instance where I can configure ansible and use it.



☐	instance1	i-0bac8abe03c0f116e	Running	t2.micro	2/2 checks passec	Failed to fetch
☑	ansible	i-0f25d7e547d0b62e8	Running	t2.micro	2/2 checks passec	Failed to fetch

Connected to the instance and installed ansible inside it.

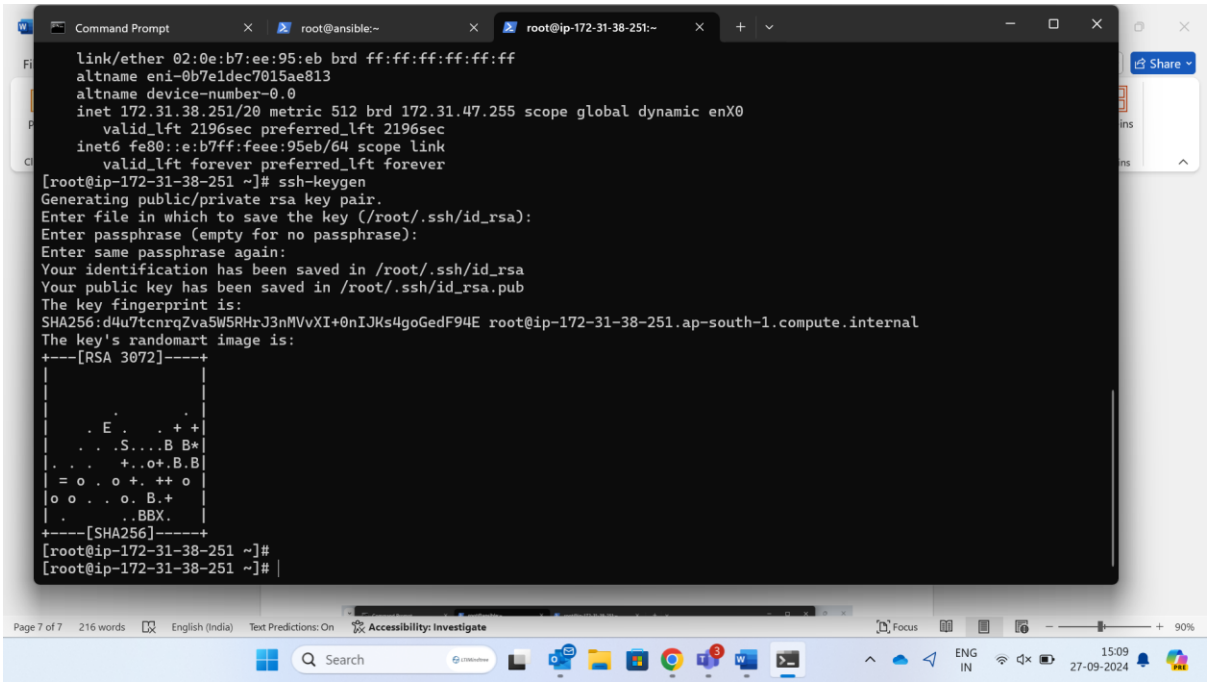


```
root@docker:~   root@ip-172-31-46-207:~
================================================================================
Install  3 Packages

Total download size: 6.8 M
Installed size: 34 M
Downloading Packages:
(1/3): sshpass-1.09-6.amzn2023.0.1.x86_64.rpm          443 kB/s |  28 kB     00:00
(2/3): ansible-core-2.15.3-1.amzn2023.0.4.x86_64.rpm   9.8 MB/s | 2.5 MB     00:00
(3/3): git-core-2.40.1-1.amzn2023.0.3.x86_64.rpm        10 MB/s | 4.3 MB     00:00
--------------------------------------------------------------------------------
Total                                                   14 MB/s | 6.8 MB     00:00
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing        :                                                        1/1
  Installing       : sshpass-1.09-6.amzn2023.0.1.x86_64                     1/3
  Installing       : git-core-2.40.1-1.amzn2023.0.3.x86_64                  2/3
  Installing       : ansible-core-2.15.3-1.amzn2023.0.4.x86_64              3/3
  Running scriptlet: ansible-core-2.15.3-1.amzn2023.0.4.x86_64              3/3
  Verifying        : ansible-core-2.15.3-1.amzn2023.0.4.x86_64              1/3
  Verifying        : git-core-2.40.1-1.amzn2023.0.3.x86_64                  2/3
  Verifying        : sshpass-1.09-6.amzn2023.0.1.x86_64                     3/3

Installed:
  ansible-core-2.15.3-1.amzn2023.0.4.x86_64  git-core-2.40.1-1.amzn2023.0.3.x86_64  sshpass-1.09-6.amzn2023.0.1.x86_64

Complete!
[root@ansible ~]#
```

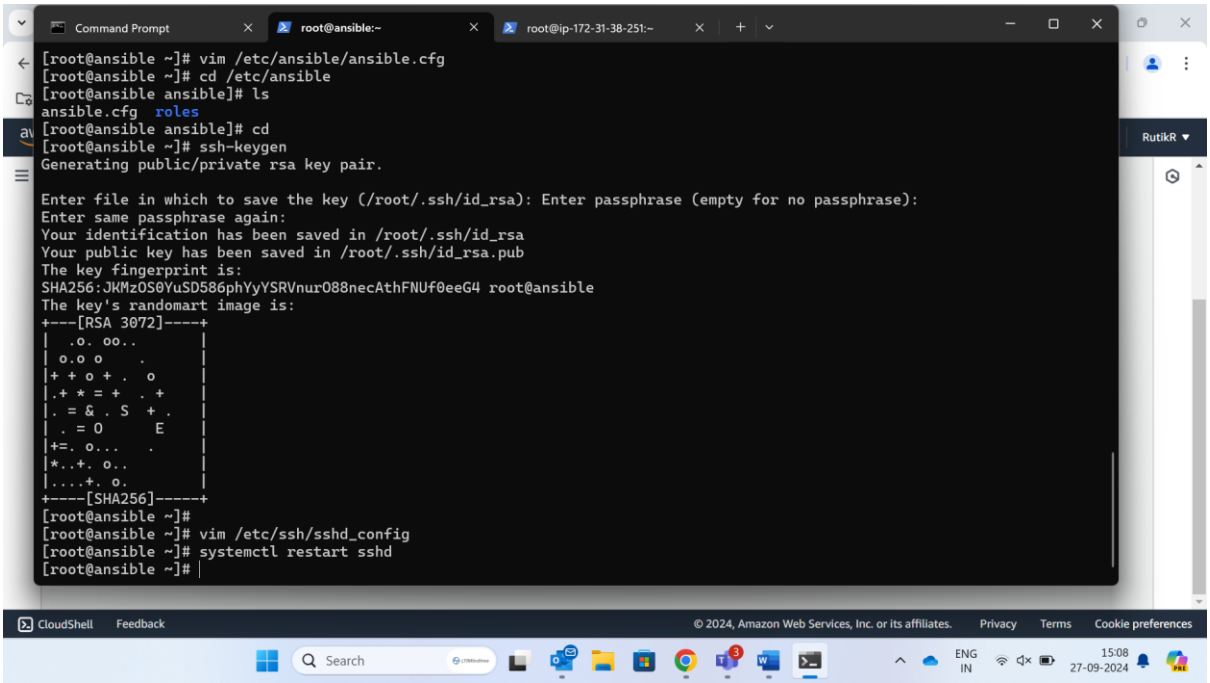
Configured ansible using ansible.cfg file.

```
inventory = /etc/ansible/hosts
~
~
~
~
~
~
~
~
~
```

So need another remote host so launched an instance and connected to it.



Configured sshd file to allow password authentication to copy ssh key to the remote host.



Configured sshd at remote server side to copy ssh key

```
[root@ip-172-31-38-251 .ssh]# history
    1  ip a s
    2  ssh-keygen
    3  passwd root
    4  vim /etc/ssh/sshd_config
    5  systemctl restart sshd
    6  cd .ssh'
    7  cd .ssh
    8  ls
    9  cat authorized_keys
   10  ip a s
   11  history
[root@ip-172-31-38-251 .ssh]#
```

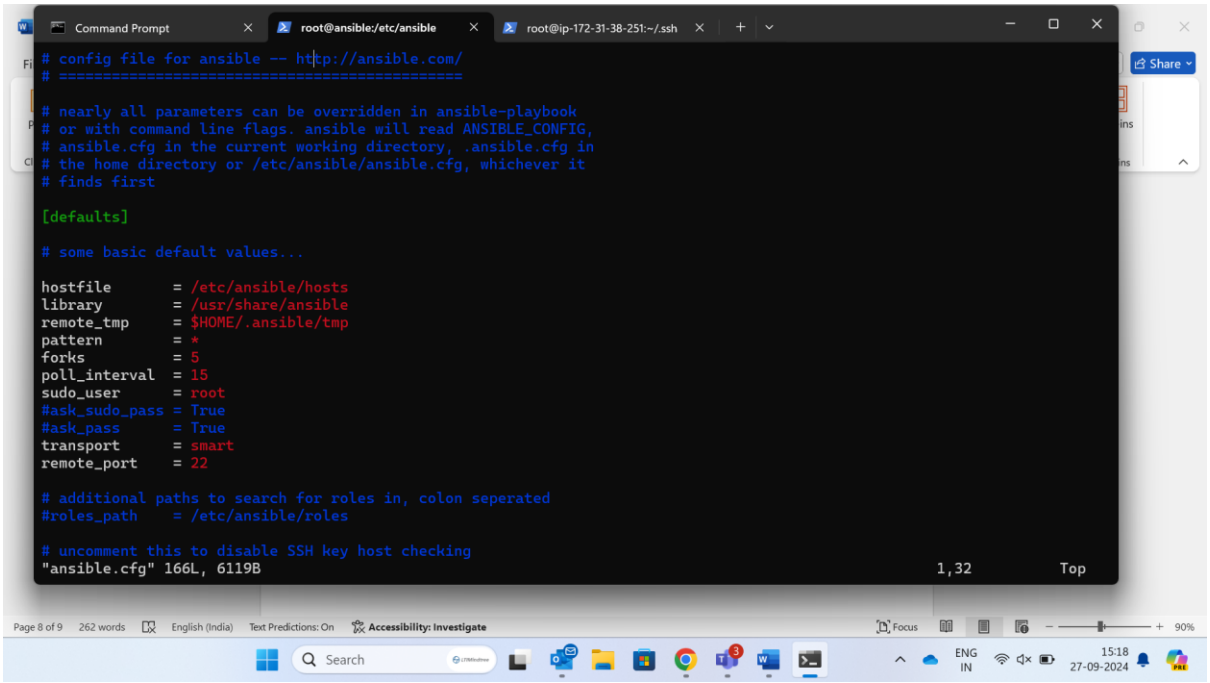
Key is copied into remote server.

```
[root@ip-172-31-38-251 .ssh]# cat authorized_keys
no-port-forwarding,no-agent-forwarding,no-X11-forwarding,command="echo 'Please login as the user \"ec2-user\" rather tha
n the user \"root\".';echo;sleep 10;exit 142" ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABAQCVFtWaMXE0FEUAY1GHrH13uUxTwoTV2DiorG
rpZhcKxxSYmR8WyQ/pDQkWP7+JSeXerkwKxBNfhgxCmDhj/f/rzPySnMk2fNgv8beCIa/5myj3Gn5d7M6vi8zqGRXLJMX3e1M8n7gcTpiHUF/zOj+4772UHt
IcYHH2LWySgweiFNG3dBcmHkR/D4t73EBcCBlga5eRoLL36zXs2tzMFXkwnfL/78zUjaE3gDyLAPU2hr64Y0UmjLPuCZaTb++NKS8cq+Hx4bQ9f1N8eXdjN1
SmBt9Jz6AbuNCRbTQ3n2utnfudyeQ7VvEtA0SzX022AWE68zvqf5yxuHl5YCt3RhQF dev
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABgQDKAYQQIgSssWTzvuQ+R6CbE5H3mlQOack9wWbYQFp1dHbAai7uC5WHmBirKRpYXIRHtqtK497gZD03CSFg
iQK2sry7VkWqK6XBgoWY7oiyNHZP7SDvwHVIMEWTu8x1uOShRk08vd9/hNkK2zeyE+W+3uHnuLFZmWxu5RtFjzb2kOCUfC0ysG9sOFUv0EAb+dLgpwT54rsN
fMvNv2f9SH/PfWFQQrC+SgRuj23v3Quk7xf3DVfQyzDdjNhlXTjw3HB0C+GvwX9QUFlqJi6iMlyAkHu6tNDaaIcNzV4bfA2w0/Mf2ikCCvCqKm8dcUSYOnXf
pcLWCYiJ1AxCRGIM0pbThu3QSSiytpuqZz691mmujxP0W4T26KqkWhL8SDfCvneZsoM3F5C6o6OmZiaiAc6KGxFSufrFgmTUfrs4ZHu29kDWx5/RC3NeHQQr
LfPHRQS/F58Rn5ZVubWaoa75Af+IcS2Qy957Qh2HIH3eXEbd4DPzRGClw7yHA/9iKene/IM= root@ansible
```

Now add this host ip into hosts file onto ansible configured server.

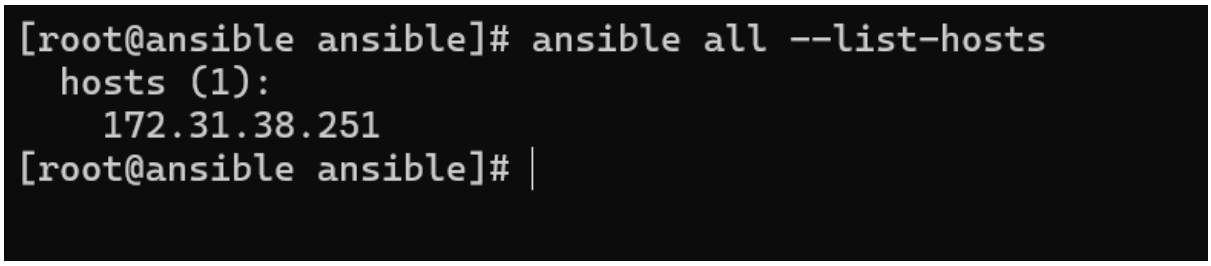
```
[root@ansible ~]# cd /etc/ansible
[root@ansible ansible]# ls
ansible.cfg  roles
[root@ansible ansible]# vim hosts
[root@ansible ansible]# vim ansible.cfg
[root@ansible ansible]# ls
ansible.cfg  hosts  roles
[root@ansible ansible]# cat hosts
[india]
172.31.38.251
[root@ansible ansible]#
```

Ansible.cfg is configured.

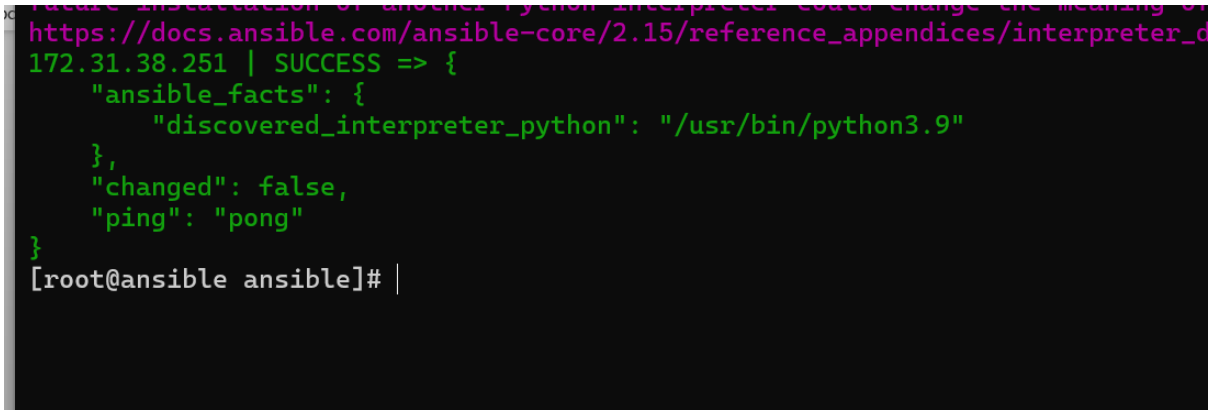


Now lets check if the remote server is reachable.

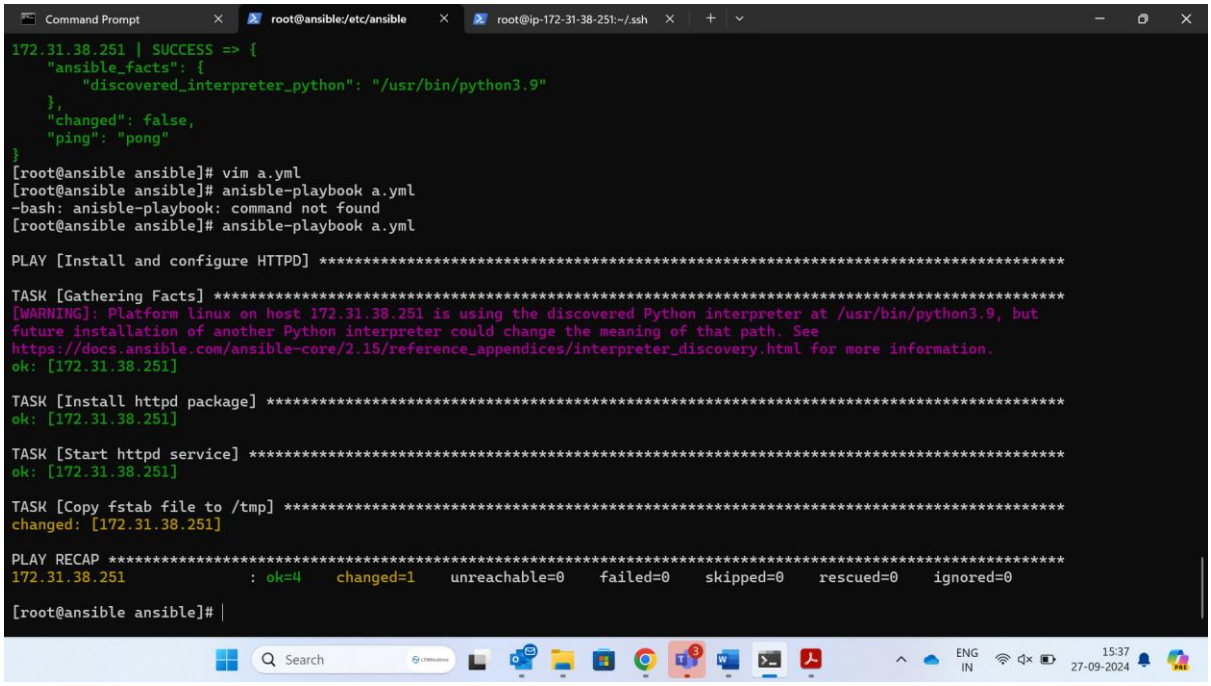
First check ih hosts are listed



Check if hosts are reachable



Now create playbook to host website and also change fstab file.



Done this on th host server.