Software Provisioning and Configuration Management

LAB FILE SUBMITTED BY:

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BATCH: 1 Devops

Lab Exercise 01

Creating Static Host Inventory

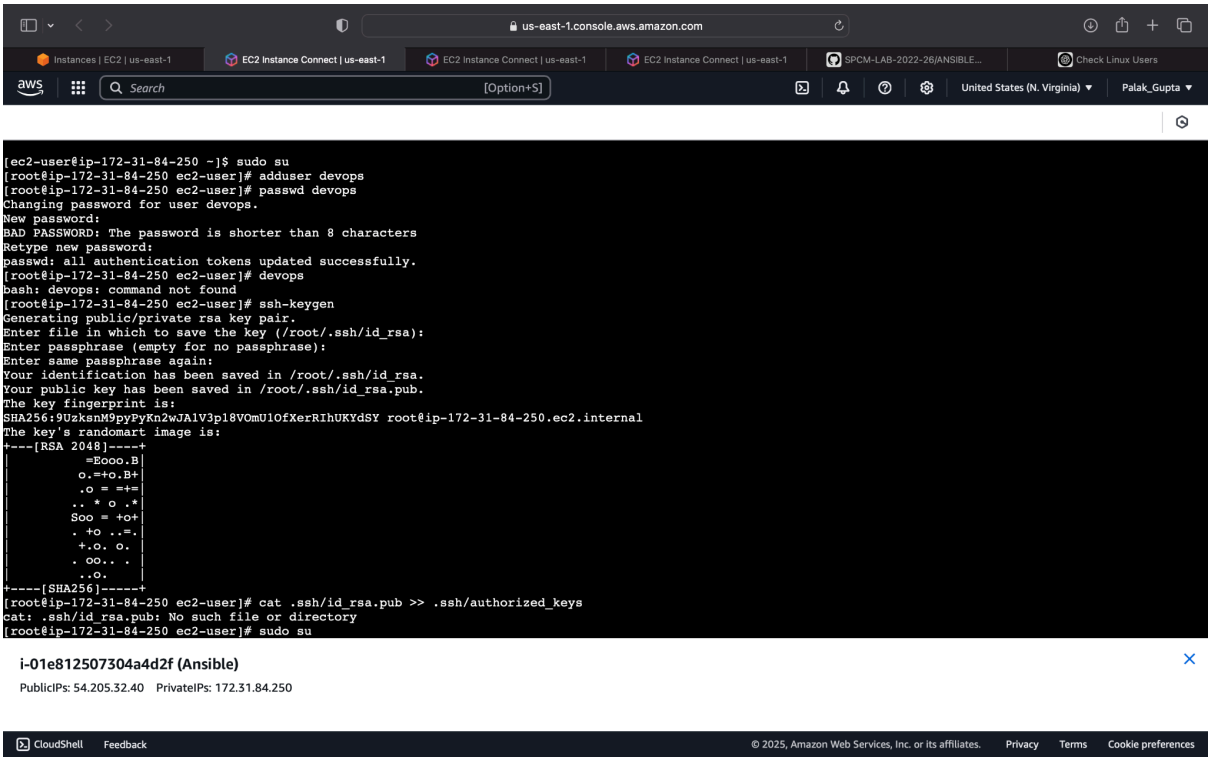
Objective: To create a static host inventory for managing and automating infrastructure tasks efficiently across multiple servers using Ansible

Tools required: Ubuntu OS

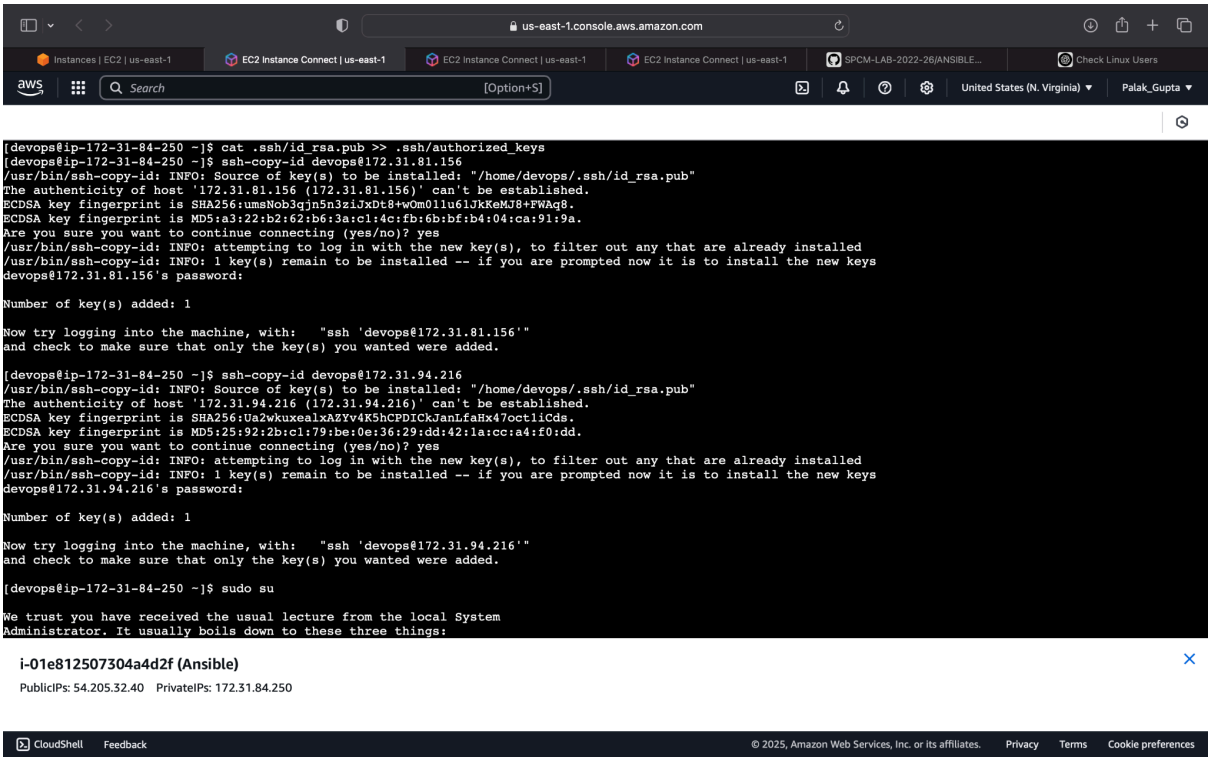
Prerequisites: You need to have Ansible installed to proceed with this demo

Steps to be followed:

1. Generate SSH key pair on the main node



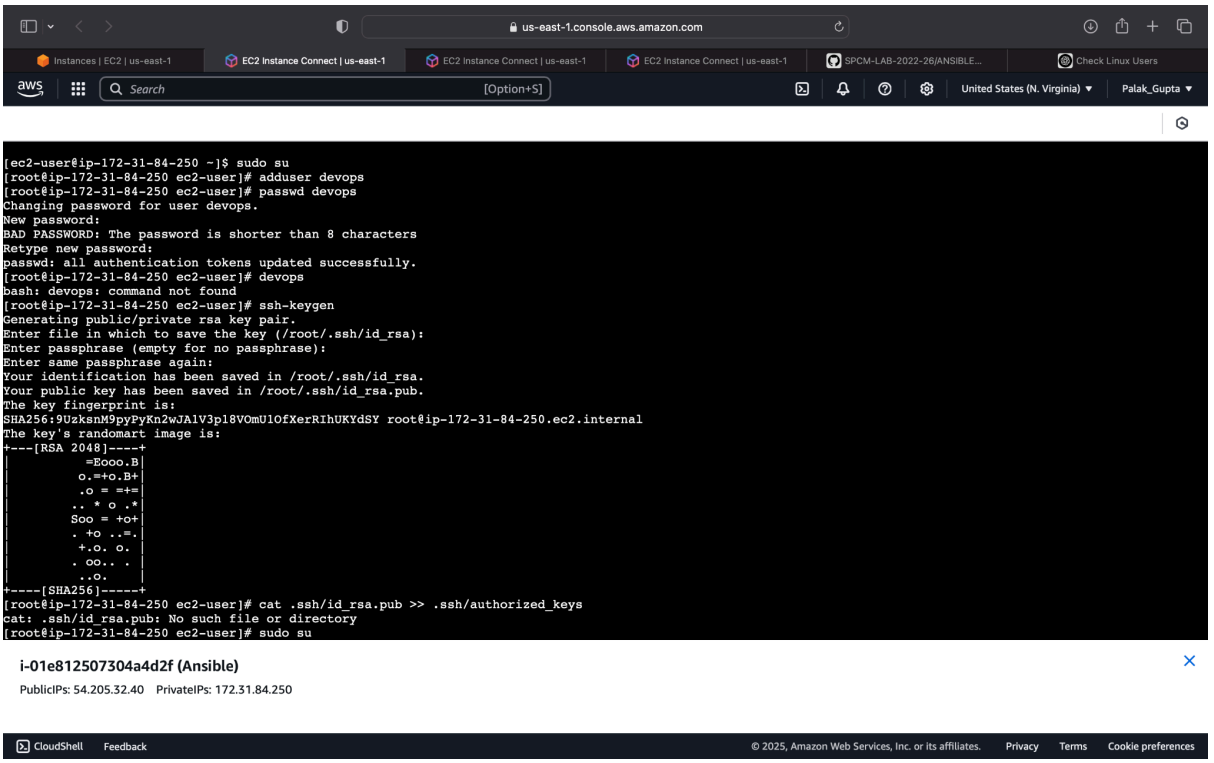
2. Copy the SSH key to the two other nodes



3. Update the inventory or host file with the host IP address
4. Establish connectivity between the hosts specified in the host file and the Ansible server

Step 1: Generate SSH key pair on the main node

1.1 Use the following command to generate the SSH key on the Ansible server:
ssh-keygen

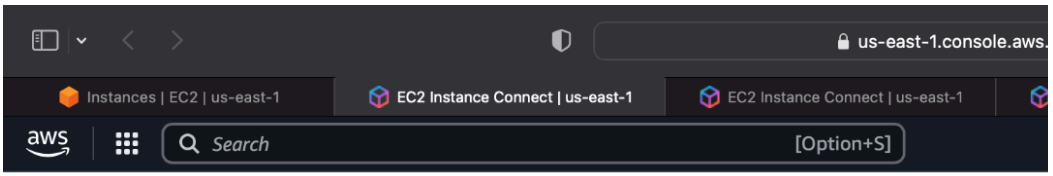


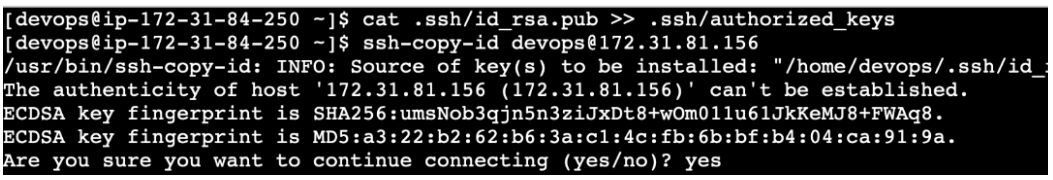
Step 2: Copy the SSH key to the other two nodes

2.1 Use the following command to copy the public key to a file named **authorized_keys**

in localhost:

cat .ssh/id_rsa.pub >> .ssh/authorized_keys



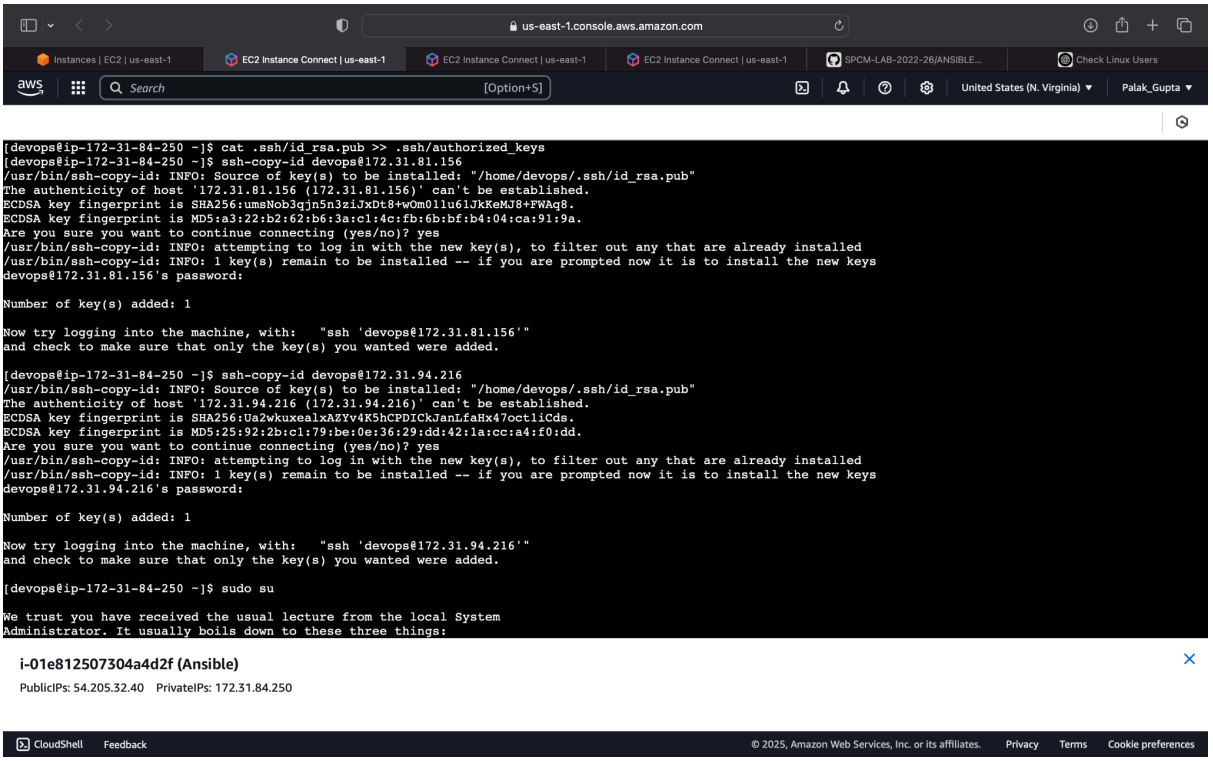


2.2 Run the following command to go to the **.ssh** directory of the Ansible server:

cd .ssh

2.3 Run the following command to copy the public key to another node that will connect to the Ansible server:

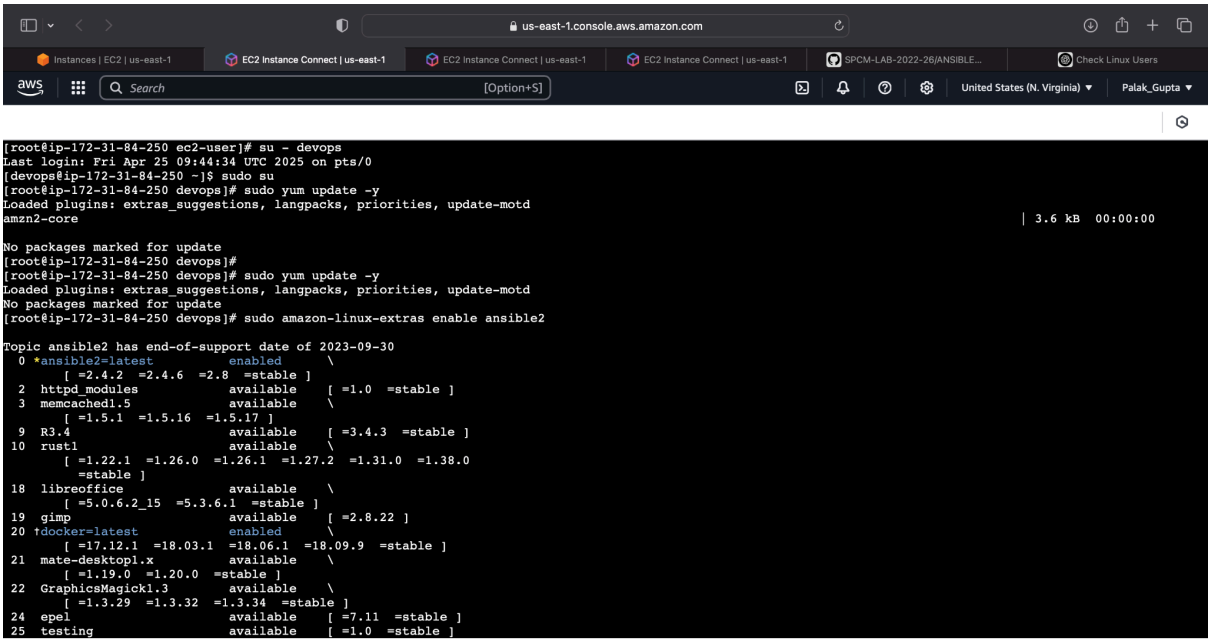
ssh-copy-id username@ip -p 22



> **Note**: You must use a **username@ip** with your node and IP username, which are provided in the lab credential.

2.4 Execute the following command to exit the **.ssh** directory of the Ansible server:

cd


us-east-1.console.aws.amazon.com
Instances | EC2 | us-east-1
EC2 Instance Connect | us-east-1
EC2 Instance Connect | us-east-1
EC2 Instance Connect | us-east-1
SPCM-LAB-2022-26/ANSIBLE...
Check Linux Users
Search
[Option+S]
United States (N. Virginia)
Palak_Gupta
[root@ip-172-31-84-250 ec2-user]# su - devops
Last login: Fri Apr 25 09:44:34 UTC 2025 on pts/0
[devops@ip-172-31-84-250 ~]$ sudo su
[root@ip-172-31-84-250 devops]# sudo yum update -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core | 3.6 kB 00:00:00
No packages marked for update
[root@ip-172-31-84-250 devops]#
[root@ip-172-31-84-250 devops]# sudo yum update -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
No packages marked for update
[root@ip-172-31-84-250 devops]# sudo amazon-linux-extras enable ansible2
Topic ansible2 has end-of-support date of 2023-09-30
0 *ansible2=latest enabled \
[=2.4.2 =2.4.6 =2.8 =stable]
2 httpd_modules available [=1.0 =stable]
3 memcached1.5 available \
[=1.5.1 =1.5.16 =1.5.17]
9 R3.4 available [=3.4.3 =stable]
10 rust1 available \
[=1.22.1 =1.26.0 =1.26.1 =1.27.2 =1.31.0 =1.38.0
=stable]
18 libreoffice available \
[=5.0.6.2_15 =5.3.6.1 =stable]
19 gimp available [=2.8.22]
20 †docker=latest enabled \
[=17.12.1 =18.03.1 =18.06.1 =18.09.9 =stable]
21 mate-desktop1.x available \
[=1.19.0 =1.20.0 =stable]
22 GraphicsMagick1.3 available \
[=1.3.29 =1.3.32 =1.3.34 =stable]
24 epel available [=7.11 =stable]
25 testing available [=1.0 =stable]
i-01e812507304a4d2f (Ansible)
PublicIPs: 54.205.32.40 PrivateIPs: 172.31.84.250
CloudShell
Feedback
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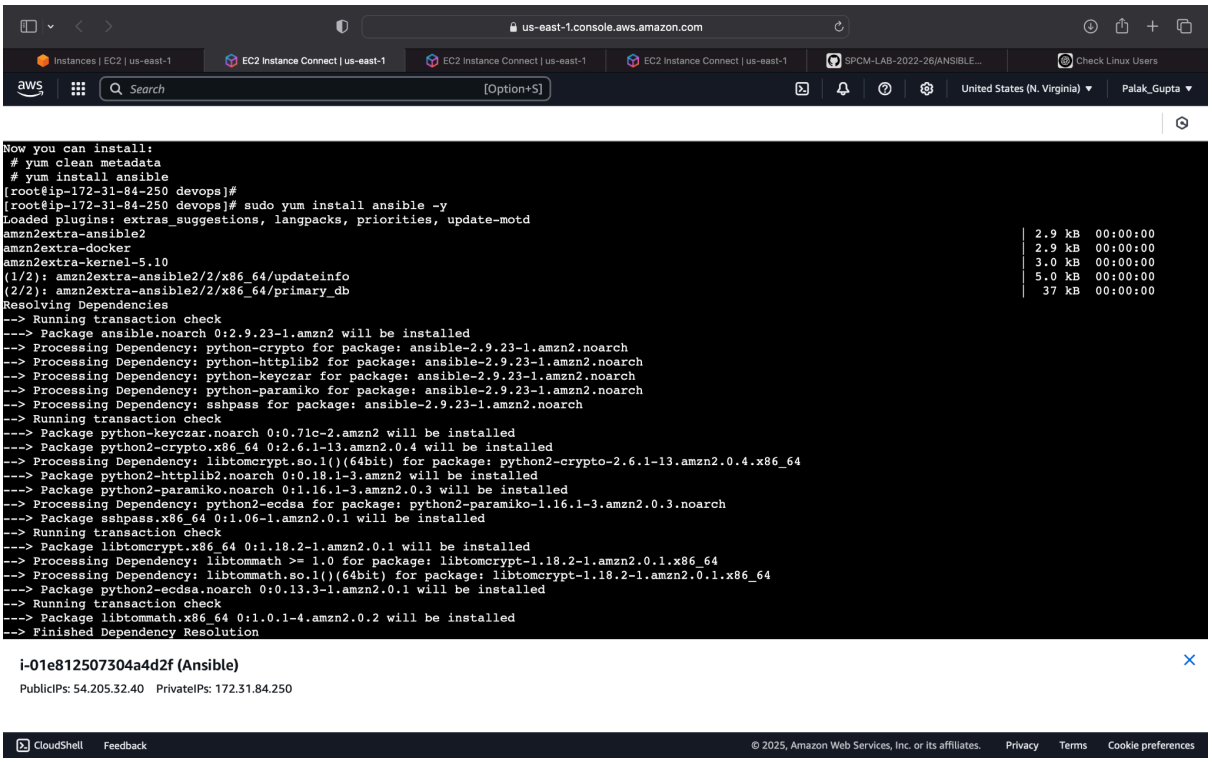
us-east-1.console.aws.amazon.com
Instances | EC2 | us-east-1
EC2 Instance Connect | us-east-1
EC2 Instance Connect | us-east-1
EC2 Instance Connect | us-east-1
SPCM-LAB-2022-26/ANSIBLE...
Check Linux Users
Search
[Option+S]
United States (N. Virginia)
Palak_Gupta
Now you can install:
yum clean metadata
yum install ansible
[root@ip-172-31-84-250 devops]#
[root@ip-172-31-84-250 devops]# sudo yum install ansible -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2extra-ansible2 | 2.9 kB 00:00:00
amzn2extra-docker | 2.9 kB 00:00:00
amzn2extra-kernel-5.10 | 3.0 kB 00:00:00
(1/2): amzn2extra-ansible2/2/x86_64/updateinfo | 5.0 kB 00:00:00
(2/2): amzn2extra-ansible2/2/x86_64/primary_db | 37 kB 00:00:00
Resolving Dependencies
--> Running transaction check
---> Package ansible.noarch 0:2.9.23-1.amzn2 will be installed
--> Processing Dependency: python-crypto for package: ansible-2.9.23-1.amzn2.noarch
--> Processing Dependency: python-httplib2 for package: ansible-2.9.23-1.amzn2.noarch
--> Processing Dependency: python-keyczar for package: ansible-2.9.23-1.amzn2.noarch
--> Processing Dependency: python-paramiko for package: ansible-2.9.23-1.amzn2.noarch
--> Processing Dependency: sshpass for package: ansible-2.9.23-1.amzn2.noarch
--> Running transaction check
---> Package python-keyczar.noarch 0:0.71c-2.amzn2 will be installed
---> Package python2-crypto.x86_64 0:2.6.1-13.amzn2.0.4 will be installed
--> Processing Dependency: libtomcrypt.so.1()(64bit) for package: python2-crypto-2.6.1-13.amzn2.0.4.x86_64
---> Package python2-httplib2.noarch 0:0.18.1-3.amzn2 will be installed
---> Package python2-paramiko.noarch 0:1.16.1-3.amzn2.0.3 will be installed
--> Processing Dependency: python2-ecdsa for package: python2-paramiko-1.16.1-3.amzn2.0.3.noarch
---> Package sshpass.x86_64 0:1.06-1.amzn2.0.1 will be installed
--> Running transaction check
---> Package libtomcrypt.x86_64 0:1.18.2-1.amzn2.0.1 will be installed
--> Processing Dependency: libtommath >= 1.0 for package: libtomcrypt-1.18.2-1.amzn2.0.1.x86_64
--> Processing Dependency: libtommath.so.1()(64bit) for package: libtomcrypt-1.18.2-1.amzn2.0.1.x86_64
---> Package python2-ecdsa.noarch 0:0.13.3-1.amzn2.0.1 will be installed
--> Running transaction check
---> Package libtommath.x86_64 0:1.0.1-4.amzn2.0.2 will be installed
--> Finished Dependency Resolution
i-01e812507304a4d2f (Ansible)
PublicIPs: 54.205.32.40 PrivateIPs: 172.31.84.250
CloudShell
Feedback
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Privacy
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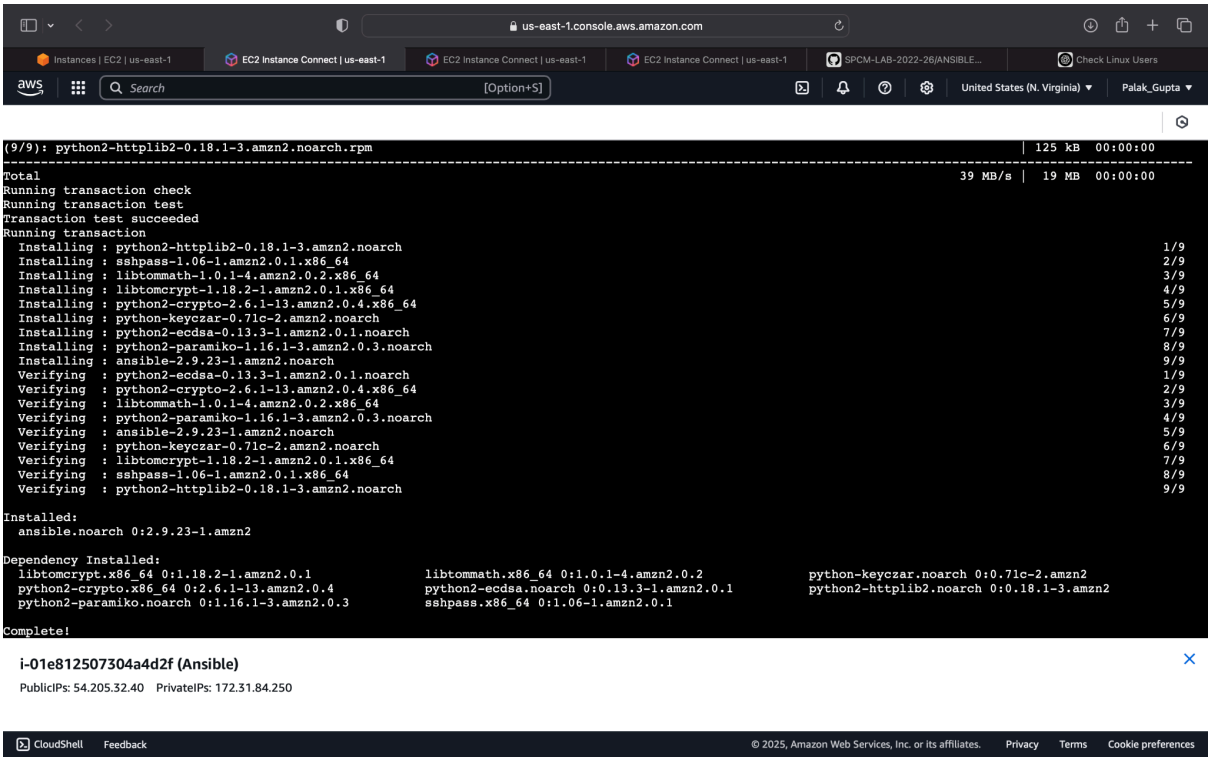
Cookie preferences

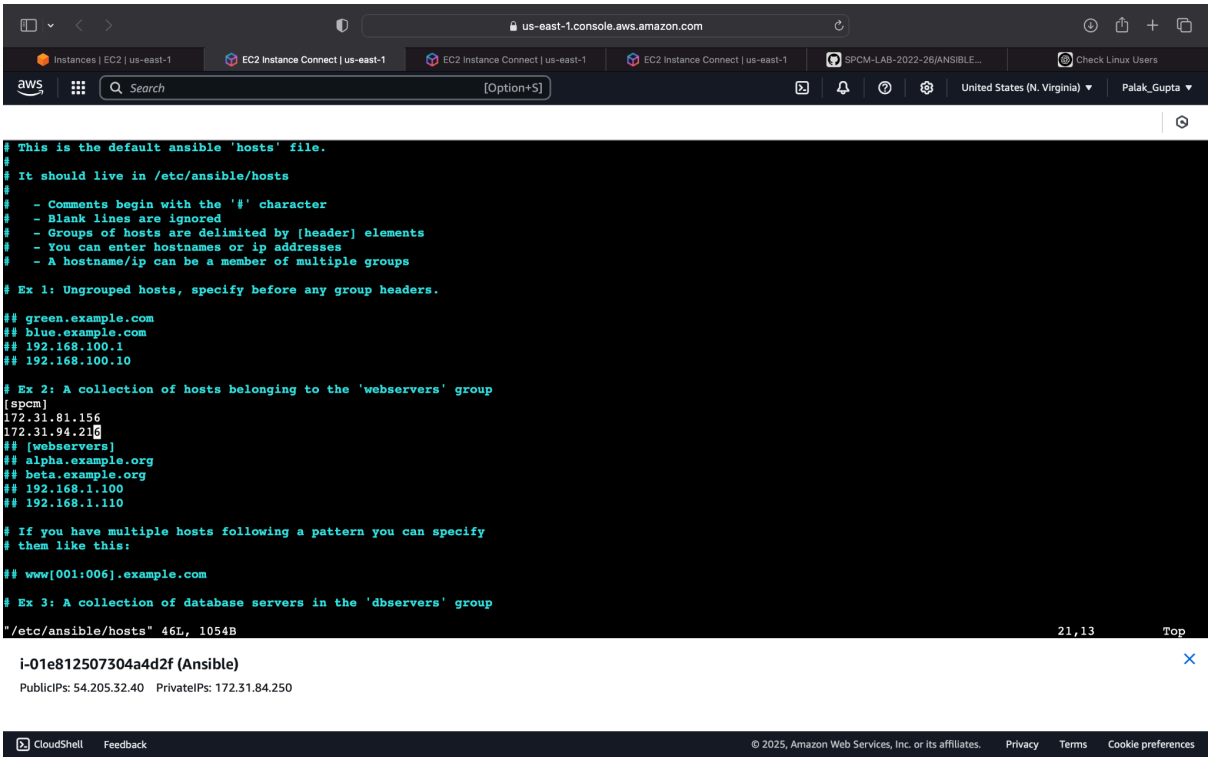


Step 3: Update the inventory or host file with the host IP address

3.1 Use the following command to open the Ansible inventory file and add the host localhost to it:
sudo vi /etc/ansible/hosts

3.2 When the file opens, add the three lines of code below to the end of the file:
[dbbservers]
localhost:22
172.31.5.76:22

Note: Press **esc**, then write **:wq** and press **enter** to save the file.



Step 4: Establish connectivity between the hosts specified in the host file and the Ansible server

4.1 Run the following command to copy the public key to another node that will connect to the Ansible server:

ansible -m ping dbbservers

```
syedsharozsimpl@ip-172-31-44-85:~$ ansible -m ping dbbservers
```

```
[root@ip-172-31-84-250 devops]# ansible -m ping 172.31.81.156
[WARNING]: Platform linux on host 172.31.81.156 is using the discovered Python interpreter at /usr/bin/python, but future installation of another Python
interpreter could change this. See https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more information.
172.31.81.156 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python"
    },
    "changed": false,
    "ping": "pong"
}
```

```
[root@ip-172-31-84-250 devops]# ansible -m ping 172.31.94.216
The authenticity of host '172.31.94.216 (172.31.94.216)' can't be established.
ECDSA key fingerprint is SHA256:Ua2wkuxealxAZYv4K5hCPDICkJanLfaHx47oct1iCds.
ECDSA key fingerprint is MD5:25:92:2b:c1:79:be:0e:36:29:dd:42:1a:cc:a4:f0:dd.
Are you sure you want to continue connecting (yes/no)? yes
[WARNING]: Platform linux on host 172.31.94.216 is using the discovered Python interpreter at /usr/bin/python, but future installation of another Python
interpreter could change this. See https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more information.
172.31.94.216 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python"
    },
    "changed": false,
    "ping": "pong"
}
```

```
[root@ip-172-31-84-250 devops]#  ansible -m ping spcm
[WARNING]: Platform linux on host 172.31.94.216 is using the discovered Python interpreter at /usr/bin/python, but future installation of another Python
interpreter could change this. See https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more information.
172.31.94.216 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python"
    },
    "changed": false,
    "ping": "pong"
}
[WARNING]: Platform linux on host 172.31.81.156 is using the discovered Python interpreter at /usr/bin/python, but future installation of another Python
interpreter could change this. See https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more information.
172.31.81.156 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python"
    },
    "changed": false,
    "ping": "pong"
}
[WARNING]: Platform linux on host 172.31.84.250 is using the discovered Python interpreter at /usr/bin/python, but future installation of another Python
interpreter could change this. See https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more information.
172.31.84.250 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python"
    },
    "changed": false,
    "ping": "pong"
}
```

4.2 Use the following command to check the number of hosts in the host file:

ansible all --list-hosts

```
[root@ip-172-31-84-250 devops]# ansible all --list-hosts
  hosts (2):
    172.31.81.156
    172.31.94.216
[root@ip-172-31-84-250 devops]#
```

By following these steps, you have successfully created a static host inventory for managing and automating infrastructure tasks efficiently across multiple servers using Ansible.