

Assignment 3

DevOps

Team 10

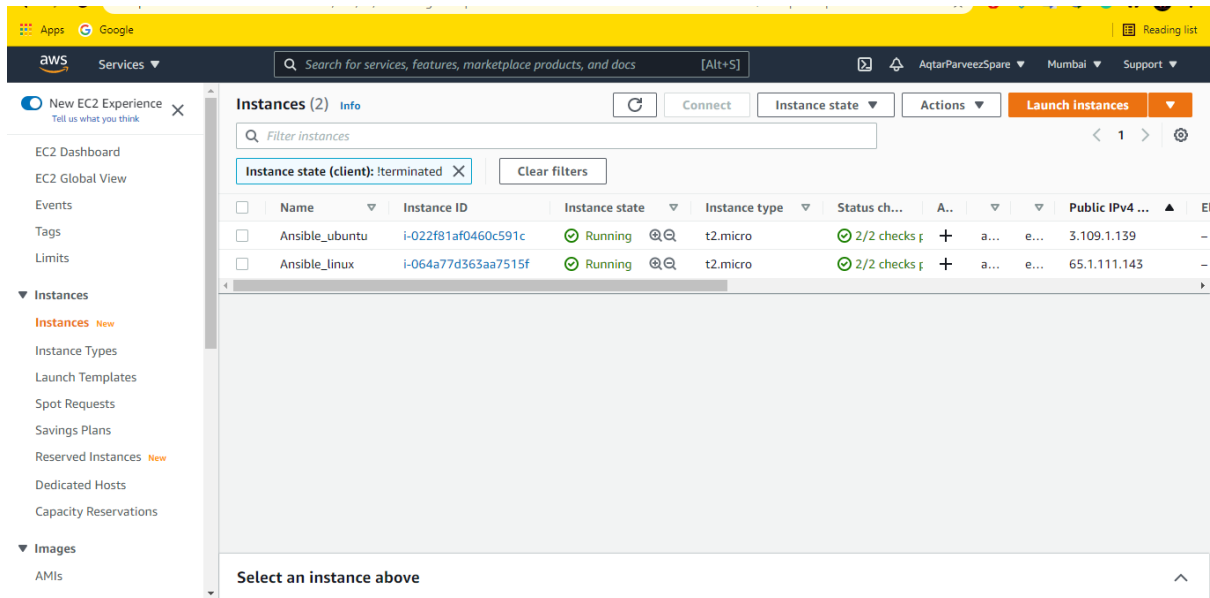
Team Members:

1. G K Bharath Bhushan (18bcs026)
2. K V S Chaitanya (18bcs045)
3. Neha T (18bcs060)
4. Rahul S (18bcs075)
5. Varun Awati (18bcs108)
6. Sushanth B Patil (18bcs102)
7. Aqtar Parveez (18bcs010)
8. Trishuk K S (18bcs104)

Step – 1:

Start an amazon EC2 instances and note down their IPv4 addresses (Public) Respectively.

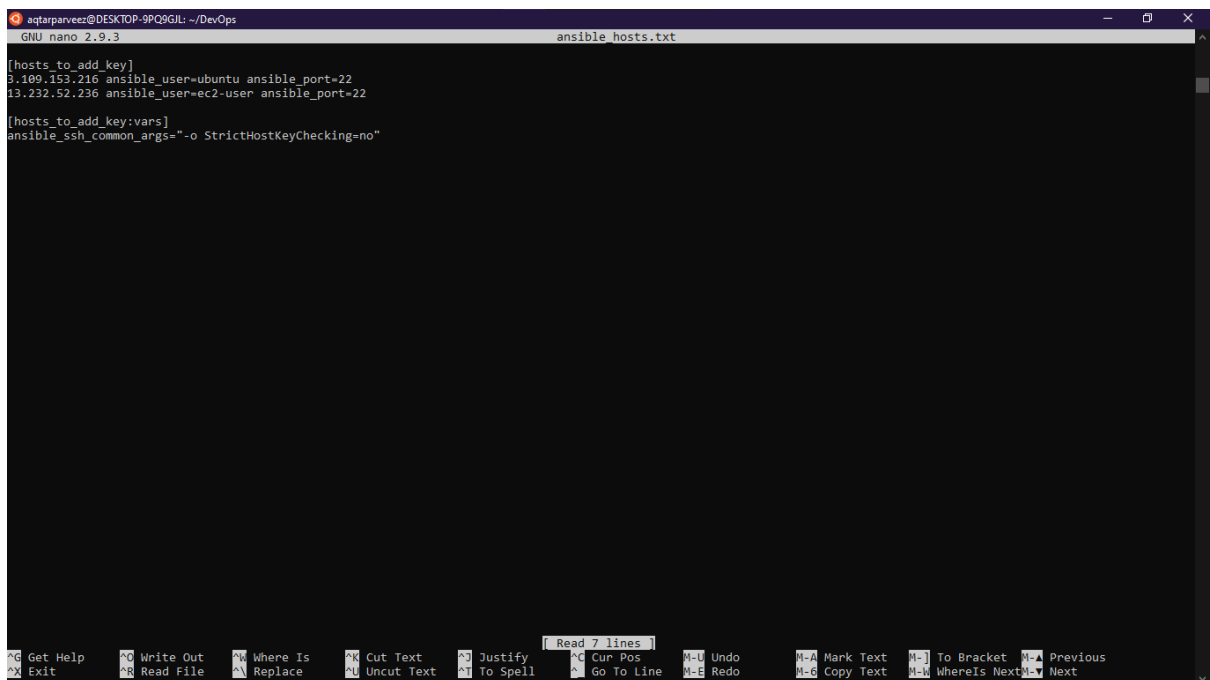
In the below case the keypair (.pem) is the same for both instances.



Step -2:

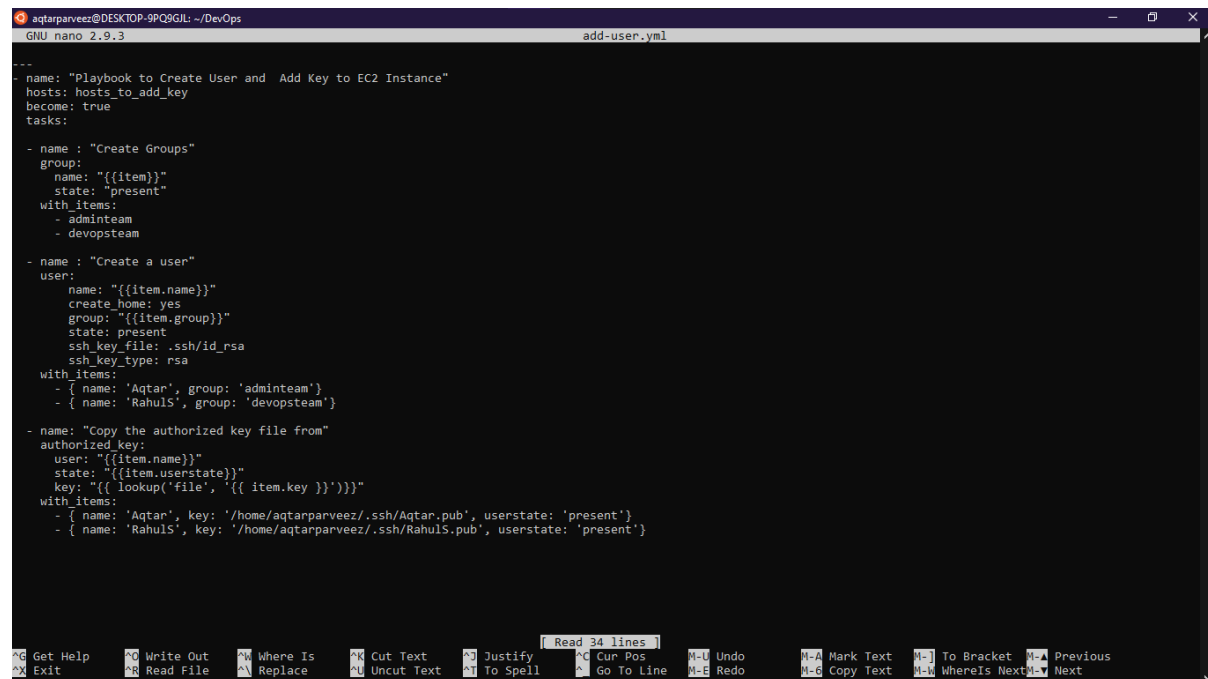
Write down the IP addresses in the below format and save it.

Saved as [ansible_hosts.txt]



Step -3:

Create the Ansible playbook [add-user.yml] with User details which we will execute to add the users to the EC2 instances mentioned in the [ansible_hosts.txt] file above. The contents of our playbook are shown in the screenshots below.



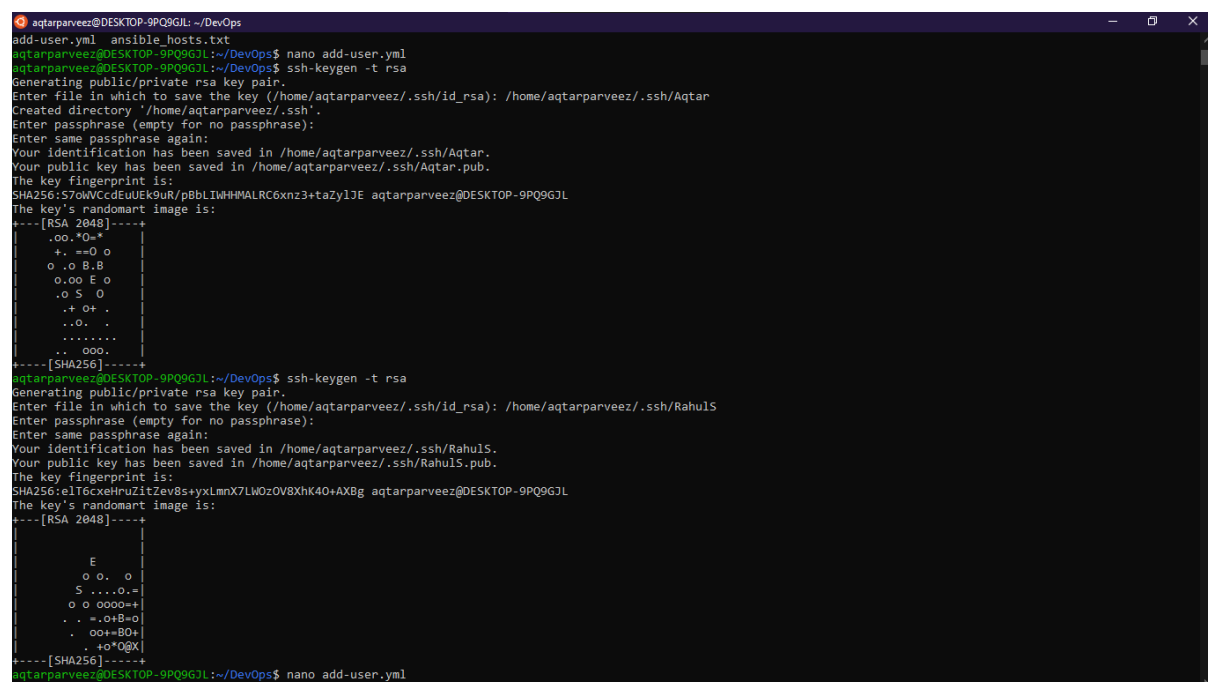
```
--
- name: "Playbook to Create User and Add Key to EC2 Instance"
  hosts: hosts_to_add_key
  become: true
  tasks:
    - name: "Create Groups"
      group:
        name: "{{item}}"
        state: "present"
      with_items:
        - adminteam
        - devopsteam

    - name: "Create a user"
      user:
        name: "{{item.name}}"
        create_home: yes
        group: "{{item.group}}"
        state: present
        ssh_key_file: .ssh/id_rsa
        ssh_key_type: rsa
      with_items:
        - { name: 'Aqtar', group: 'adminteam' }
        - { name: 'Rahuls', group: 'devopsteam' }

    - name: "Copy the authorized key file from"
      authorized_key:
        user: "{{item.name}}"
        state: "{{item.userstate}}"
        key: "{{lookup('file', '{{ item.key }}')}}"
      with_items:
        - { name: 'Aqtar', key: '/home/aqtarparveez/.ssh/Aqtar.pub', userstate: 'present' }
        - { name: 'Rahuls', key: '/home/aqtarparveez/.ssh/Rahuls.pub', userstate: 'present' }
```

Step – 4:

Now generate the ssh-key key pair for all the users to be added to the EC2 instances using the command mentioned in the screenshots below. Make sure to name the ssh-key same as mentioned in the playbook.



```
aqtarparveez@DESKTOP-9PQ9GJL: ~/DevOps
add-user.yml ansible_hosts.txt
aqtarparveez@DESKTOP-9PQ9GJL:~/DevOps$ nano add-user.yml
aqtarparveez@DESKTOP-9PQ9GJL:~/DevOps$ ssh-keygen -t rsa
Generating public/private rsa key pair.
Enter file in which to save the key (/home/aqtarparveez/.ssh/id_rsa): /home/aqtarparveez/.ssh/Aqtar
Created directory '/home/aqtarparveez/.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/aqtarparveez/.ssh/Aqtar.
Your public key has been saved in /home/aqtarparveez/.ssh/Aqtar.pub.
The key fingerprint is:
SHA256:57oWVccdeUJEk9uR/pBbLIWHHMLRC6xnz3+taZylJE aqtarparveez@DESKTOP-9PQ9GJL
The key's randomart image is:
+--[RSA 2048]-----+
|.oo.*O=|
|+. ==O O|
|o.o B.B|
|o.o E O|
|.S O|
|. + O+ .|
|..O. .|
|.....|
|..ooo.|
+-----+
aqtarparveez@DESKTOP-9PQ9GJL:~/DevOps$ ssh-keygen -t rsa
Generating public/private rsa key pair.
Enter file in which to save the key (/home/aqtarparveez/.ssh/id_rsa): /home/aqtarparveez/.ssh/Rahuls
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/aqtarparveez/.ssh/Rahuls.
Your public key has been saved in /home/aqtarparveez/.ssh/Rahuls.pub.
The key fingerprint is:
SHA256:elT6cxeHruzit8s+yxLmnX7LW0z0V8XhK40+AXBg aqtarparveez@DESKTOP-9PQ9GJL
The key's randomart image is:
+--[RSA 2048]-----+
|E|
|o o. o|
|S ....O=|
|o o 0000+|
|. . -O+B=O|
|. 00+BO+|
|. +o*OgX|
+-----+
aqtarparveez@DESKTOP-9PQ9GJL:~/DevOps$ nano add-user.yml
```

Step- 5:

Run the Ansible Playbook Using the following command.

Make sure the (.pem) keypair file is proper and original as obtained from AWS while launching the instances.

```
aqtarparveez@DESKTOP-9PQ9G1L: ~/DevOps
TASK [Gathering Facts] *****fatal: [3.109.153.216]: UNREACHABLE! => {"changed": false, "msg": "Failed to connect
to the host via ssh: Warning: Permanently added '3.109.153.216' (ECDSA) to the list of known hosts.\r\nno such identity: /mnt/e/Keypair/Assg3.pem: No such file or direc
tory\r\nubuntu@3.109.153.216: Permission denied (publickey).", "unreachable": true}
fatal: [3.109.153.216]: UNREACHABLE! => {"changed": false, "msg": "Failed to connect to the host via ssh: Warning: Permanently added '3.109.153.216' (ECDSA) to the list
of known hosts.\r\nno such identity: /mnt/e/Keypair/Assg3.pem: No such file or directory\r\nec2-user@3.109.153.216: Permission denied (publickey,gssapi-keyex,gssapi-wi
th-mic).", "unreachable": true}

PLAY RECAP *****3.109.153.216 : ok=0 changed=0 unreachable=1 failed=0 skippe
d=0 rescued=0 ignored=0

aqtarparveez@DESKTOP-9PQ9G1L:~/DevOps$ cp -i /mnt/e/Keypair/Assg3.pem /home/aqtarpaveez/DevOps/
cp: cannot stat '/mnt/e/Keypair/Assg3.pem': No such file or directory
aqtarparveez@DESKTOP-9PQ9G1L:~/DevOps$ ansible-playbook add-user.yml -i ansible_hosts.txt --key-file=/mnt/e/Keypair/Assign3.pem

PLAY [Playbook to Create User and Add Key to EC2 Instance] *****

TASK [Gathering Facts] *****
[WARNING]: Platform linux on host 13.232.52.236 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.
ok: [13.232.52.236]
ok: [3.109.153.216]

TASK [Create Groups] *****
changed: [13.232.52.236] => (item=adminteam)
changed: [3.109.153.216] => (item=adminteam)
changed: [13.232.52.236] => (item=devopsteam)
changed: [3.109.153.216] => (item=devopsteam)

TASK [Create a user] *****
changed: [13.232.52.236] => (item={u'group': u'adminteam', u'name': u'Aqtan'})
changed: [3.109.153.216] => (item={u'group': u'adminteam', u'name': u'Aqtan'})
changed: [3.109.153.216] => (item={u'group': u'devopsteam', u'name': u'RahulS'})
changed: [13.232.52.236] => (item={u'group': u'devopsteam', u'name': u'RahulS'})

TASK [Copy the authorized key file from] *****
changed: [3.109.153.216] => (item={u'name': u'Aqtan', u'key': u'/home/aqtarpaveez/.ssh/Aqtan.pub', u'userstate': u'present'})
changed: [13.232.52.236] => (item={u'name': u'Aqtan', u'key': u'/home/aqtarpaveez/.ssh/Aqtan.pub', u'userstate': u'present'})
changed: [3.109.153.216] => (item={u'name': u'RahulS', u'key': u'/home/aqtarpaveez/.ssh/RahulS.pub', u'userstate': u'present'})
changed: [13.232.52.236] => (item={u'name': u'RahulS', u'key': u'/home/aqtarpaveez/.ssh/RahulS.pub', u'userstate': u'present'})

PLAY RECAP *****
13.232.52.236 : ok=4 changed=3 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0
3.109.153.216 : ok=4 changed=3 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0

aqtarparveez@DESKTOP-9PQ9G1L:~/DevOps$
```

Outcome:

Now Connect to the instance using the following command:

ssh -p <port number> -i <location of the .pub keys> <user name>@<IP>

```
Aqtan@ip-172-31-15-174:~$
TASK [Create a user] *****
changed: [13.232.52.236] => (item={u'group': u'adminteam', u'name': u'Aqtan'})
changed: [3.109.153.216] => (item={u'group': u'adminteam', u'name': u'Aqtan'})
changed: [3.109.153.216] => (item={u'group': u'devopsteam', u'name': u'RahulS'})
changed: [13.232.52.236] => (item={u'group': u'devopsteam', u'name': u'RahulS'})

TASK [Copy the authorized key file from] *****
changed: [13.232.52.236] => (item={u'name': u'Aqtan', u'key': u'/home/aqtarpaveez/.ssh/Aqtan.pub', u'userstate': u'present'})
changed: [13.232.52.236] => (item={u'name': u'Aqtan', u'key': u'/home/aqtarpaveez/.ssh/Aqtan.pub', u'userstate': u'present'})
changed: [3.109.153.216] => (item={u'name': u'RahulS', u'key': u'/home/aqtarpaveez/.ssh/RahulS.pub', u'userstate': u'present'})
changed: [13.232.52.236] => (item={u'name': u'RahulS', u'key': u'/home/aqtarpaveez/.ssh/RahulS.pub', u'userstate': u'present'})

PLAY RECAP *****
13.232.52.236 : ok=4 changed=3 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0
3.109.153.216 : ok=4 changed=3 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0

aqtarparveez@DESKTOP-9PQ9G1L:~/DevOps$ ssh -p 22 /home/aqtarpaveez/.ssh/Aqtan Aqtan@13.232.52.236
ssh: Could not resolve hostname /home/aqtarpaveez/.ssh/aqtan: Name or service not known
aqtarparveez@DESKTOP-9PQ9G1L:~/DevOps$ ssh -p 22 ../.ssh/Aqtan Aqtan@13.232.52.236
ssh: Could not resolve hostname ../.ssh/aqtan: Name or service not known
aqtarparveez@DESKTOP-9PQ9G1L:~/DevOps$ ssh -p 22 ../.ssh/aqtan aqtan@13.232.52.236
ssh: Could not resolve hostname ../.ssh/aqtan: Name or service not known
aqtarparveez@DESKTOP-9PQ9G1L:~/DevOps$ ssh -p 22 -i ../.ssh/Aqtan Aqtan@13.232.52.236
Warning: Identity file ../.ssh/Aqtan not accessible: No such file or directory.
Aqtan@13.232.52.236: Permission denied (publickey,gssapi-keyex,gssapi-with-mic).
aqtarparveez@DESKTOP-9PQ9G1L:~/DevOps$ ssh -p 22 -i /home/aqtarpaveez/.ssh/Aqtan Aqtan@13.232.52.236

  ____      _
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| |  | | / ___ \
| |  | |/_/   \_\
|_|  |_____/___)

Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/
11 package(s) needed for security, out of 35 available
Run "sudo yum update" to apply all updates.
[Aqtan@ip-172-31-15-174 ~]$ sudo yum update

We trust you have received the usual lecture from the local System
Administrator. It usually boils down to these three things:

 #1) Respect the privacy of others.
 #2) Think before you type.
 #3) With great power comes great responsibility.

[sudo] password for Aqtan:
Sorry, try again.
[sudo] password for Aqtan:
```

Able to use Linux connecting to the Linux instance using our own pair of ssh keys.

```
aqtarparveez@DESKTOP-9PQ9GJL: ~/DevOps
[Aqtar@ip-172-31-15-174 ~]$ quit
-bash: quit: command not found
[Aqtar@ip-172-31-15-174 ~]$ exit
logout
There are stopped jobs.
[Aqtar@ip-172-31-15-174 ~]$ logout
[sudo] password for Aqtar: Connection to 13.232.52.236 closed.
aqtarparveez@DESKTOP-9PQ9GJL:~/DevOps$ ssh -p 22 -i /home/aqtarparveez/.ssh/RahulS RahulS@3.109.153.216
Welcome to Ubuntu 20.04.2 LTS (GNU/Linux 5.4.0-1045-aws x86_64)

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

System information as of Mon Sep 27 15:03:17 UTC 2021

System load:  0.0               Processes:    100
Usage of /:   16.6% of 7.69GB   Users logged in:  0
Memory usage: 22%              IPv4 address for eth0: 172.31.8.103
Swap usage:   0%

1 update can be applied immediately.
To see these additional updates run: apt list --upgradable

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

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.

$ sudo apt update
[sudo] password for RahulS:
```

Able to use Ubuntu connecting to the ubuntu instance using our own pair of ssh keys.