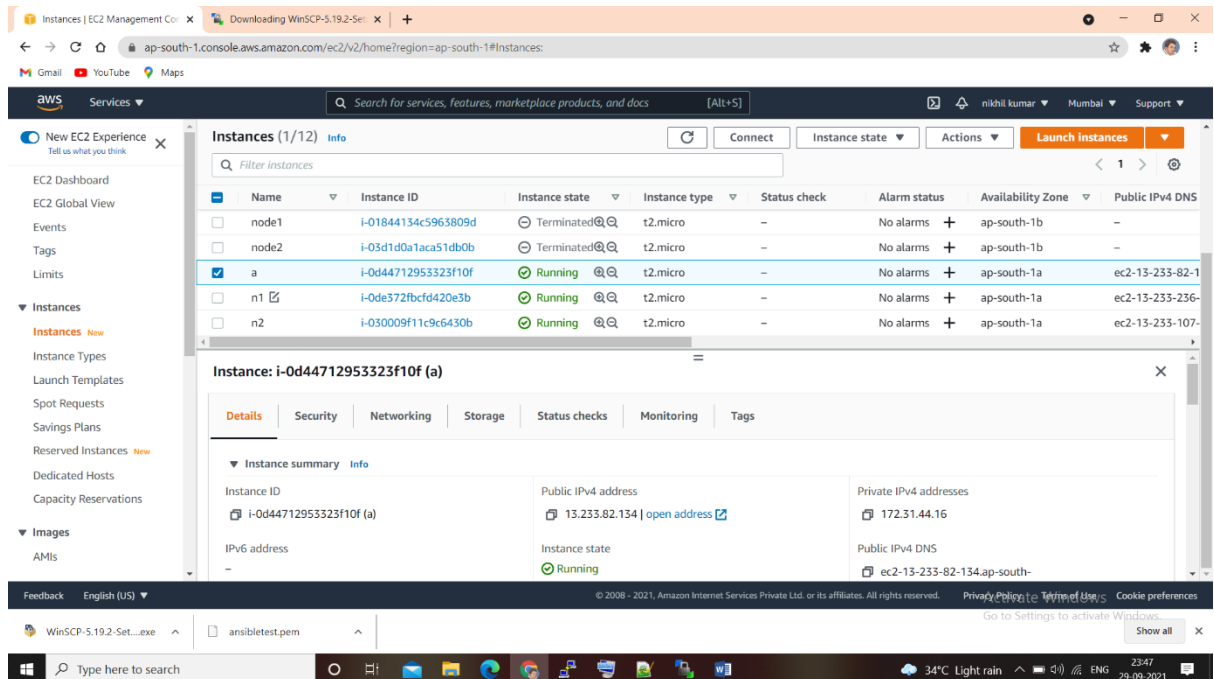


Devops Task-5

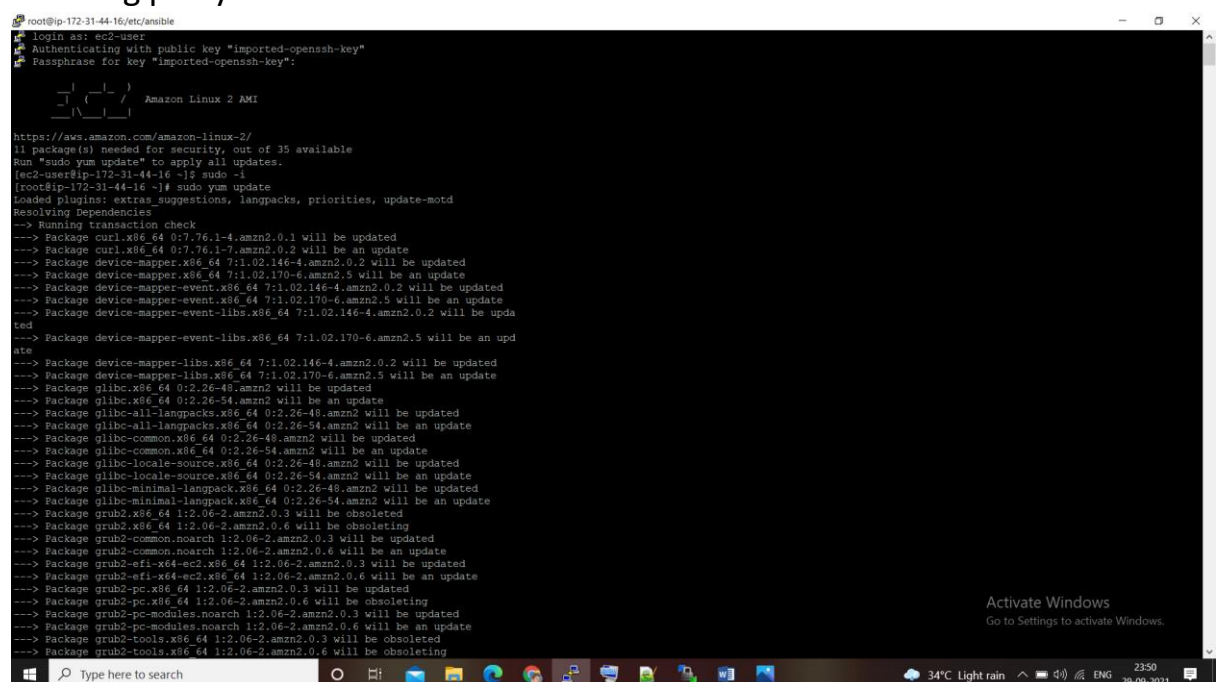
----- Team 9 -----

Add users to ec2 instances with Ssh access –Ansible

1. Create 3 AWS ec2 instances..... Let one be host and other 2 be nodes.



2. Using putty make a ssh connection..



3. Install Ansible and check for its version

```
root@ip-172-31-44-16:/etc/ansible

ansible is available in Amazon Linux Extra topic "ansible2"

To use, run
# sudo amazon-linux-extras install ansible2

Learn more at
https://aws.amazon.com/amazon-linux-2/faqs/#Amazon_Linux_Extras

[root@ip-172-31-44-16 ~]# sudo amazon-linux-extras install ansible2
Installing ansible
Loaded plugins: extras suggestions, langpacks, priorities, update-motd
Cleaning repos: amzn2-core amzn2extra-ansible2 amzn2extra-docker
12 metadata files removed
4 sqlite files removed
0 metadata files removed
Loaded plugins: extras suggestions, langpacks, priorities, update-motd
amzn2-core                               | 3.7 kB  00:00:00
amzn2extra-ansible2                     | 3.0 kB  00:00:00
amzn2extra-docker                       | 3.0 kB  00:00:00
(1/7): amzn2-core/2/x86_64/group_gz     | 2.5 kB  00:00:00
(2/7): amzn2-core/2/x86_64/updateinfo   | 415 kB  00:00:00
(3/7): amzn2extra-docker/2/x86_64/primary_db | 79 kB  00:00:00
(4/7): amzn2extra-ansible2/2/x86_64/updateinfo | 76 B  00:00:00
(5/7): amzn2extra-docker/2/x86_64/updateinfo | 76 B  00:00:00
(6/7): amzn2extra-ansible2/2/x86_64/primary_db | 39 kB  00:00:00
(7/7): amzn2-core/2/x86_64/primary_db | 57 MB  00:00:01
Resolving Dependencies
--> Running transaction check
--> Package ansible.noarch 0:2.9.23-1.amzn2 will be installed
--> Processing Dependency: sshpass for package: ansible-2.9.23-1.amzn2.noarch
--> Processing Dependency: python-paramiko 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-httplib2 for package: ansible-2.9.23-1.amzn2.noarch
--> Processing Dependency: python-crypto for package: ansible-2.9.23-1.amzn2.noarch
--> Running transaction check
--> Package python-keyczar.noarch 0:0.7.1c-2.amzn2 will be installed
--> Package python2-crypto.x86_64 0:2.6.1-13.amzn2.0.3 will be installed
--> Processing Dependency: libtomcrypt.so.1(64bit) for package: python2-crypto-2.6.1-13.amzn2.0.3.x86_64
--> Package python2-httplib2.noarch 0:0.18.1-3.amzn2 will be installed
--> Package python2-paramiko.noarch 0:1.16.1-3.amzn2.0.2 will be installed
--> Processing Dependency: python2-ecdsa for package: python2-paramiko-1.16.1-3.amzn2.0.2.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
```

4. Exploring etc folder for hosts, ansible.cfg etc files

```
root@ip-172-31-44-16:/etc/ansible
60 mock2 available [=stable]
61 dnsmasq2.95 available [=stable]
[root@ip-172-31-44-16 ~]# cd /etc/ansible
[root@ip-172-31-44-16 ansible]# ls -ltr
total 24
drwxr-xr-x 2 root root 6 Jul 1 12:48 roles
-rw-r--r-- 1 root root 1016 Jul 1 12:48 hosts
-rw-r--r-- 1 root root 19905 Jul 1 12:48 ansible.cfg
[root@ip-172-31-44-16 ansible]# cat ansible.cfg
# config file for ansible -- https://ansible.com/
# =====
# nearly all parameters can be overridden in ansible-playbook
# or with command line flags, ansible will read ANSIBLE_CONFIG,
# ansible.cfg in the current working directory, .ansible.cfg in
# the home directory or /etc/ansible/ansible.cfg, whichever it
# finds first

[defaults]
# some basic default values...

#inventory = /etc/ansible/hosts
#library = /usr/share/my_modules/
#module_utils = /usr/share/my_module_utils/
#remote_tmp = ~/.ansible/tmp
#local_tmp = ~/.ansible/tmp
#plugin_filters_cfg = /etc/ansible/plugin_filters.yml
#forks = 5
#poll_interval = 15
#sudo_user = root
#ask_sudo_pass = True
#ask_pass = True
#transport = smart
#remote_port = 22
#module_lang = C
#module_set_locale = False

# plays will gather facts by default, which contain information about
# the remote system.
#
# smart - gather by default, but don't regather if already gathered
# implicit - gather by default, turn off with gather_facts: False
# explicit - do not gather by default, must say gather_facts: True
#gatherings = implicit

# This only affects the gathering done by a play's gather_facts directive,
# by default gathering retrieves all facts subsets
# all - gather all subsets
# network - gather min and network facts
```

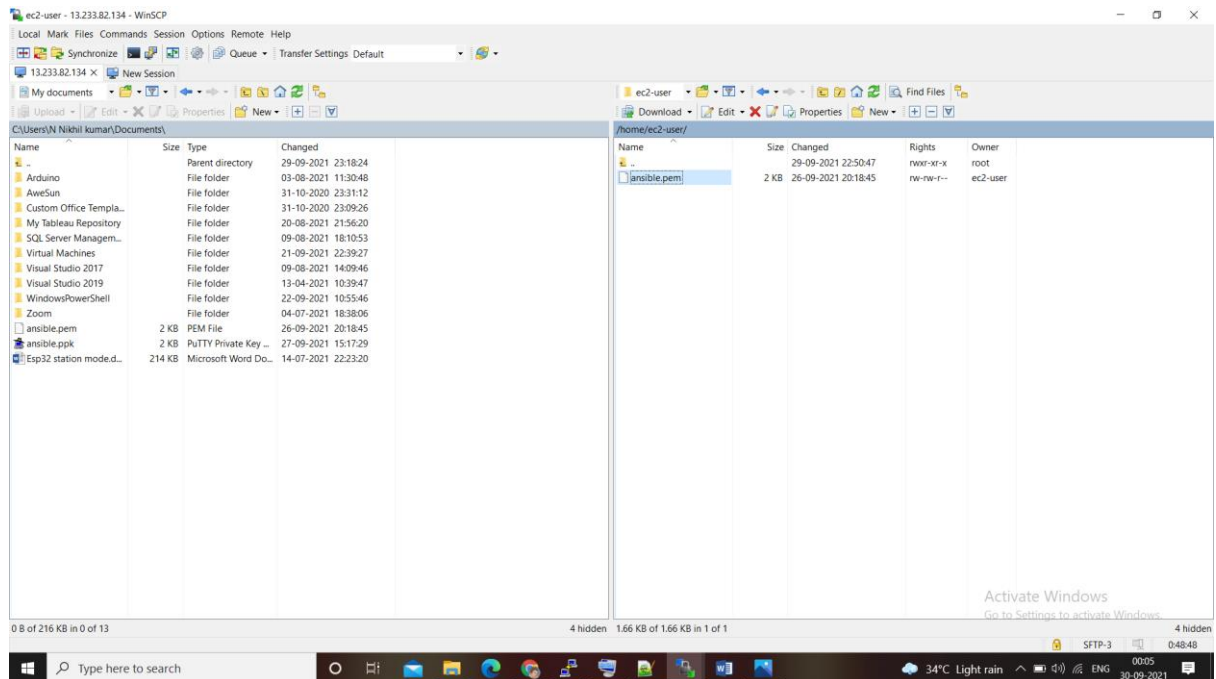
```
root@ip-172-31-44-16/etc/ansible
# Set how many context lines to show in diff
# context = 3
[root@ip-172-31-44-16 ansible]# cat hosts
# This is the default ansible 'hosts' file.
#
# It should live in /etc/ansible/hosts
#
# - Comments begin with the '#' character
# - Blank lines are ignored
# - Groups of hosts are delimited by [header] elements
# - You can enter hostnames or ip addresses
# - A hostname/ip can be a member of multiple groups
#
# Ex 1: Ungrouped hosts, specify before any group headers.
#
## green.example.com
## blue.example.com
## 192.168.100.1
## 192.168.100.10
#
# Ex 2: A collection of hosts belonging to the 'webservers' group
#
## [webservers]
## alpha.example.org
## beta.example.org
## 192.168.1.100
## 192.168.1.110
#
# If you have multiple hosts following a pattern you can specify
# them like this:
#
## www[001:006].example.com
#
# Ex 3: A collection of database servers in the 'dbservers' group
#
## [dbservers]
##
## db01.intranet.mydomain.net
## db02.intranet.mydomain.net
## 10.25.1.56
## 10.25.1.57
#
# Here's another example of host ranges, this time there are no
# leading 0s:
#
## db-[99:101]-node.example.com

[root@ip-172-31-44-16 ansible]# vi hosts
[root@ip-172-31-44-16 ansible]# ansible --version
ansible 2.9.23
```

5. Add the ip addresses of the server and remote nodes..

```
root@ip-172-31-44-16/etc/ansible
# This is the default ansible 'hosts' file.
#
# It should live in /etc/ansible/hosts
#
# - Comments begin with the '#' character
# - Blank lines are ignored
# - Groups of hosts are delimited by [header] elements
# - You can enter hostnames or ip addresses
# - A hostname/ip can be a member of multiple groups
#
# Ex 1: Ungrouped hosts, specify before any group headers.
#
[server]
172.31.44.16
#
[nodes]
172.31.46.157
172.31.35.187
#
## green.example.com
## blue.example.com
## 192.168.100.1
## 192.168.100.10
#
# Ex 2: A collection of hosts belonging to the 'webservers' group
#
## [webservers]
## alpha.example.org
## beta.example.org
## 192.168.1.100
## 192.168.1.110
#
# If you have multiple hosts following a pattern you can specify
# them like this:
#
## www[001:006].example.com
#
# Ex 3: A collection of database servers in the 'dbservers' group
#
## [dbservers]
##
## db01.intranet.mydomain.net
## db02.intranet.mydomain.net
## 10.25.1.56
## 10.25.1.57
#
# Here's another example of host ranges, this time there are no
# leading 0s:
#
## db-[99:101]-node.example.com
-- INSERT --
```

6. We are using WinSCP tool to transfer .pem file to server



7. Copy the transferred .pem file to /etc/ansible folder in the server and we need to give permission for read and write using chmod

```
root@ip-172-31-44-16 ansible) # ls
ansible.cfg  hosts  roles
root@ip-172-31-44-16 ansible) # cp /home/ec2-user/ansible.pem /etc/ansible/ansible.pem
root@ip-172-31-44-16 ansible) # ls -ltr
total 28
-rwxr-xr-x 2 root root 6 Jul 1 12:48 roles
-rw-r--r-- 1 root root 19985 Jul 1 12:48 ansible.cfg
-rw-r--r-- 1 root root 1075 Sep 29 17:38 hosts
-rw-r--r-- 1 root root 1704 Sep 29 17:54 ansible.pem
root@ip-172-31-44-16 ansible) # chmod 600 ansible.pem
root@ip-172-31-44-16 ansible) # ls -ltr
total 28
-rwxr-xr-x 2 root root 6 Jul 1 12:48 roles
-rw-r--r-- 1 root root 19985 Jul 1 12:48 ansible.cfg
-rw-r--r-- 1 root root 1075 Sep 29 17:38 hosts
-rw----- 1 root root 1704 Sep 29 17:54 ansible.pem
```

8. To check the connection we will use the ping module....

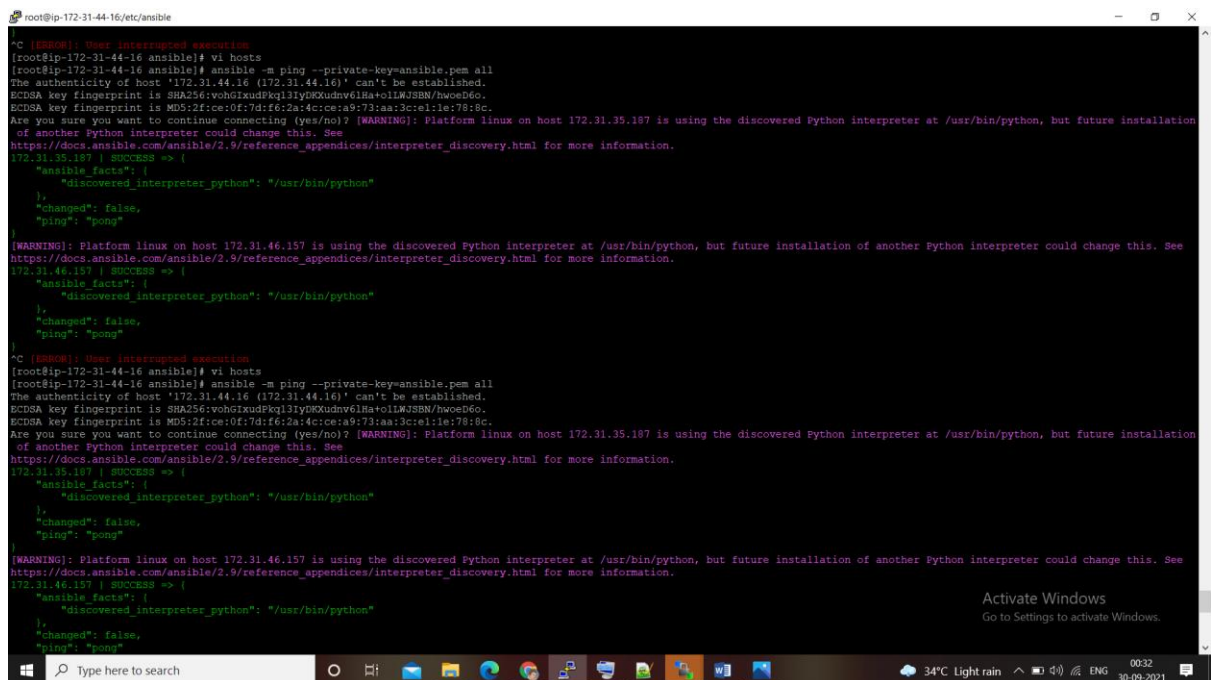
```
root@ip-172.31.44.16:/etc/ansible
[root@ip-172-31-44-16 ansible]# ls -ltr
total 28
drwxr-xr-x 2 root root 6 Jul 1 12:48 roles
-rw-r--r-- 1 root root 19985 Jul 1 12:48 ansible.cfg
-rw-r--r-- 1 root root 1075 Sep 29 17:38 hosts
-rw-r--r-- 1 root root 1704 Sep 29 17:54 ansible.pem
[root@ip-172-31-44-16 ansible]# chmod 600 ansible.pem
[root@ip-172-31-44-16 ansible]# ls -ltr
total 28
drwxr-xr-x 2 root root 6 Jul 1 12:48 roles
-rw-r--r-- 1 root root 19985 Jul 1 12:48 ansible.cfg
-rw-r--r-- 1 root root 1075 Sep 29 17:38 hosts
-rw-r----- 1 root root 1704 Sep 29 17:54 ansible.pem
[root@ip-172-31-44-16 ansible]# ansible -m ping
usage: ansible [-h] [-e VERSION] [-v] [-D] [--become-method BECOME_METHOD]
               [--become-user BECOME_USER] [-K] [-i INVENTORY] [--list-hosts]
               [-l SUBSET] [-F POLL_INTERVAL] [-b SECONDS] [-o] [-t TREE] [-k]
               [--private-key PRIVATE_KEY_FILE] [-u REMOTE_USER]
               [-c CONNECTION] [-T FINGERPRINT]
               [--ssh-common-args SSH_COMMON_ARGS]
               [--sftp-extra-args SFTP_EXTRA_ARGS]
               [--scp-extra-args SCP_EXTRA_ARGS]
               [--ssh-extra-args SSH_EXTRA_ARGS] [-C] [--syntax-check] [-D]
               [-e EXTRA_VARS] [--vault-id VAULT_ID]
               [--ask-vault-pass] [--vault-password-file VAULT_PASSWORD_FILES]
               [-f FORK] [-M MODULE_PATH] [--playbook-dir BASEDIR]
               [-a MODULE_ARGS] [-m MODULE_NAME]
               pattern
ansible: error: too few arguments
[root@ip-172-31-44-16 ansible]# ansible -m ping all
The authenticity of host '172.31.35.187 (172.31.35.187)' can't be established.
ECDSA key fingerprint is SHA256:5TL9wq1bat5J/uztZpQOV674MXSajw/GeOX9qhKnU.
Are you sure you want to continue connecting (yes/no)? The authenticity of host '172.31.46.157 (172.31.46.157)' can't be established.
ECDSA key fingerprint is SHA256:Ba5b/pSt14tncdNEBfMaMbWqj14*0iod8Fhczx4.
Are you sure you want to continue connecting (yes/no)? The authenticity of host '172.31.44.16 (172.31.44.16)' can't be established.
ECDSA key fingerprint is MD5:bb38:a3:65:fb:43:77:2f:08:da:b2:2f:e4:85:8f:12.
Are you sure you want to continue connecting (yes/no)? yes
172.31.35.187 | UNREACHABLE! => {
  "changed": false,
  "msg": "Failed to connect to the host via ssh: Warning: Permanently added '172.31.35.187' (ECDSA) to the list of known hosts.\r\nPermission denied (publickey,gssapi-keyex,gssapi-with-mi
c).",
  "unreachable": true
}
^C [ERROR]: User interrupted execution
[root@ip-172-31-44-16 ansible]# vi ansible.cfg
[root@ip-172-31-44-16 ansible]# ansible -m ping --private-key=ansible.pem all
The authenticity of host '172.31.46.157 (172.31.46.157)' can't be established.
```

It shows failed unable to connect to the host... so we need make sudo user in the ansible.cfg file as root user i.e.; just uncomment the sudo user line...

9. Though we have modified ansible.cfg, it shows error, because we need to config which user needs to run this with -u<username> in ping command

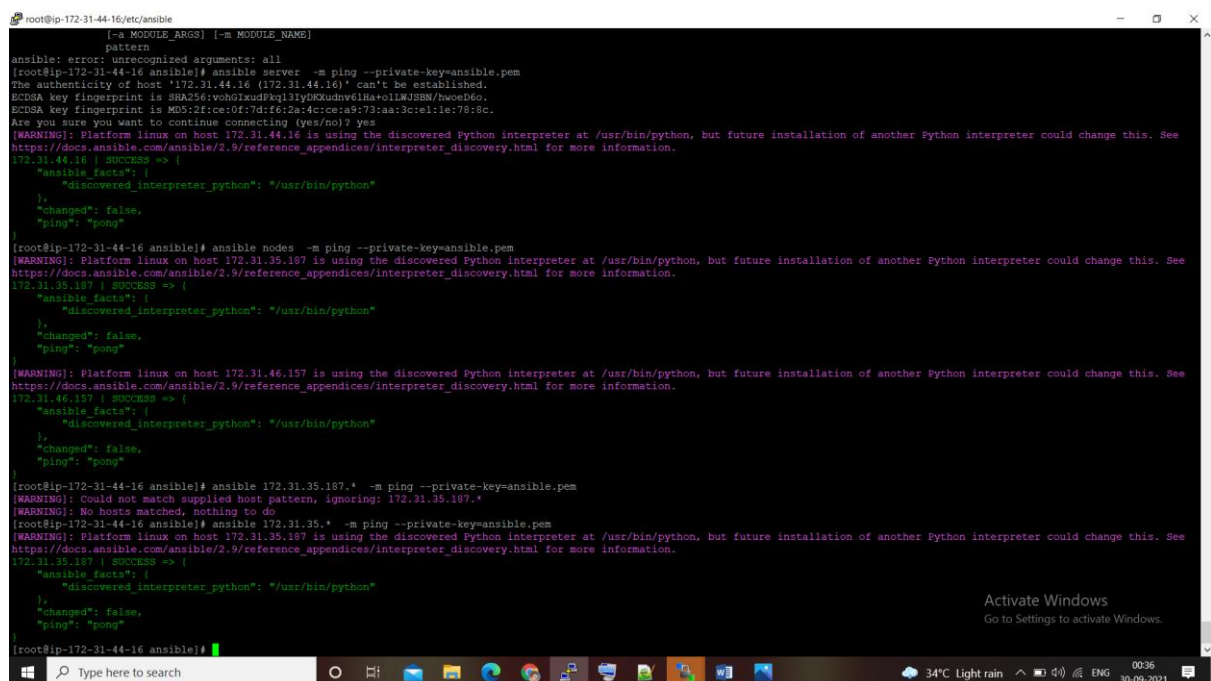
```
root@ip-172.31.44.16:/etc/ansible
172.31.35.187 | UNREACHABLE! => {
  "changed": false,
  "msg": "Failed to connect to the host via ssh: Warning: Permanently added '172.31.35.187' (ECDSA) to the list of known hosts.\r\nPermission denied (publickey,gssapi-keyex,gssapi-with-mi
c).",
  "unreachable": true
}
^C [ERROR]: User interrupted execution
[root@ip-172-31-44-16 ansible]# vi ansible.cfg
[root@ip-172-31-44-16 ansible]# ansible -m ping --private-key=ansible.pem all
The authenticity of host '172.31.46.157 (172.31.46.157)' can't be established.
ECDSA key fingerprint is MD5:bb38:a3:65:fb:43:77:2f:08:da:b2:2f:e4:85:8f:12.
Are you sure you want to continue connecting (yes/no)? The authenticity of host '172.31.44.16 (172.31.44.16)' can't be established.
ECDSA key fingerprint is SHA256:vohG1xudPqk13iydKXudnv6lHa*o1LWJSBN/hwoeD6o.
Are you sure you want to continue connecting (yes/no)? yes
^[[B[[[WARNING]: Unhandled error in Python interpreter discovery for host 172.31.35.187: unexpected output from Python interpreter discovery
^[[[WARNING]: sftp transfer mechanism failed on [172.31.35.187]. Use ANSIBLE_DEBUG=1 to see detailed information
[WARNING]: scp transfer mechanism failed on [172.31.35.187]. Use ANSIBLE_DEBUG=1 to see detailed information
[WARNING]: Unhandled error in Python interpreter discovery for host 172.31.46.157: unexpected output from python interpreter discovery
[WARNING]: sftp transfer mechanism failed on [172.31.46.157]. Use ANSIBLE_DEBUG=1 to see detailed information
[WARNING]: scp transfer mechanism failed on [172.31.46.157]. Use ANSIBLE_DEBUG=1 to see detailed information
^C [ERROR]: User interrupted execution
[root@ip-172-31-44-16 ansible]# ansible -m ping -u ec2-user --private-key=ansible.pem all
The authenticity of host '172.31.44.16 (172.31.44.16)' can't be established.
ECDSA key fingerprint is SHA256:vohG1xudPqk13iydKXudnv6lHa*o1LWJSBN/hwoeD6o.
Are you sure you want to continue connecting (yes/no)? [WARNING]: Platform linux on host 172.31.46.157 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.
172.31.46.157 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python"
  },
  "changed": false,
  "ping": "pong"
}
[WARNING]: Platform linux on host 172.31.35.187 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.
172.31.35.187 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python"
  },
  "changed": false,
  "ping": "pong"
}
^C [ERROR]: User interrupted execution
[root@ip-172-31-44-16 ansible]# vi hosts
[root@ip-172-31-44-16 ansible]# ansible -m ping --private-key=ansible.pem all
The authenticity of host '172.31.44.16 (172.31.44.16)' can't be established.
```


11. After adding the user access in hosts file, though if we try to check ping command without username in it it works fine.



```
root@ip-172-31-44-16/etc/ansible
^C [ERROR]: User interrupted execution
[root@ip-172-31-44-16 ansible]# vi hosts
[root@ip-172-31-44-16 ansible]# ansible -m ping --private-key=ansible.pem all
The authenticity of host '172.31.44.16 (172.31.44.16)' can't be established.
ECDSA key fingerprint is SHA256:vohG1xudPqgl3lyXKXudnV6l8a+o1LWJ8BN/hwoeb6o.
ECDSA key fingerprint is MD5:2f:ce:0f:7d:f6:2a:4c:ce:a9:73:aa:3c:el:1e:78:8c.
Are you sure you want to continue connecting (yes/no)? [WARNING]: Platform linux on host 172.31.35.187 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.
172.31.35.187 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python"
  },
  "changed": false,
  "ping": "pong"
}
[WARNING]: Platform linux on host 172.31.46.157 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.
172.31.46.157 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python"
  },
  "changed": false,
  "ping": "pong"
}
^C [ERROR]: User interrupted execution
[root@ip-172-31-44-16 ansible]# vi hosts
[root@ip-172-31-44-16 ansible]# ansible -m ping --private-key=ansible.pem all
The authenticity of host '172.31.44.16 (172.31.44.16)' can't be established.
ECDSA key fingerprint is SHA256:vohG1xudPqgl3lyXKXudnV6l8a+o1LWJ8BN/hwoeb6o.
ECDSA key fingerprint is MD5:2f:ce:0f:7d:f6:2a:4c:ce:a9:73:aa:3c:el:1e:78:8c.
Are you sure you want to continue connecting (yes/no)? [WARNING]: Platform linux on host 172.31.35.187 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.
172.31.35.187 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python"
  },
  "changed": false,
  "ping": "pong"
}
[WARNING]: Platform linux on host 172.31.46.157 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.
172.31.46.157 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python"
  },
  "changed": false,
  "ping": "pong"
}
```

12. We can check the connection with group names, like server and node



```
root@ip-172-31-44-16/etc/ansible
[~ MODULE_ARGS] [-m MODULE_NAME]
ansible: error: unrecognized arguments: all
pattern
[root@ip-172-31-44-16 ansible]# ansible server -m ping --private-key=ansible.pem
The authenticity of host '172.31.44.16 (172.31.44.16)' can't be established.
ECDSA key fingerprint is SHA256:vohG1xudPqgl3lyXKXudnV6l8a+o1LWJ8BN/hwoeb6o.
ECDSA key fingerprint is MD5:2f:ce:0f:7d:f6:2a:4c:ce:a9:73:aa:3c:el:1e:78:8c.
Are you sure you want to continue connecting (yes/no)? yes
[WARNING]: Platform linux on host 172.31.44.16 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.
172.31.44.16 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python"
  },
  "changed": false,
  "ping": "pong"
}
[root@ip-172-31-44-16 ansible]# ansible nodes -m ping --private-key=ansible.pem
[WARNING]: Platform linux on host 172.31.35.187 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.
172.31.35.187 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python"
  },
  "changed": false,
  "ping": "pong"
}
[WARNING]: Platform linux on host 172.31.46.157 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.
172.31.46.157 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python"
  },
  "changed": false,
  "ping": "pong"
}
[root@ip-172-31-44-16 ansible]# ansible 172.31.35.187.* -m ping --private-key=ansible.pem
[WARNING]: Could not match supplied host pattern, ignoring: 172.31.35.187.*
[WARNING]: No hosts matched, nothing to do
[root@ip-172-31-44-16 ansible]# ansible 172.31.35.* -m ping --private-key=ansible.pem
[WARNING]: Platform linux on host 172.31.35.187 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.
172.31.35.187 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python"
  },
  "changed": false,
  "ping": "pong"
}
```

So the we have added users to ec2 instances with ssh access – ansible

Team 9