

Experiment-4

Aim:Ansible Setup and SSH key

(Note: All Blue Words is a command, just copy and paste)

Require Software & Tools: AWS Account, Puttygen software, WinSCP Software.

Procedure:

Step-1: Login AWS and Create three Instances on AWS account using ubuntu OS and save key pair also.

The screenshot shows the AWS EC2 Instances page with the following details:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4
ansible	i-06e5a4b61b232e855	Running	t2.micro	2/2 checks passed	View alarms	ap-south-1b	ec2-15-207
server1	i-03a3d92b48681be23	Running	t2.micro	2/2 checks passed	View alarms	ap-south-1b	ec2-52-66-
server2	i-017b60943062166ca	Running	t2.micro	2/2 checks passed	View alarms	ap-south-1b	ec2-3-110-

Step-2: change the 2nd and 3rd instance name as a server1 and server2 (you can named anything) -> Edit inbound rules of 1st instance (ansible). Edit inbound rules like given details.

The screenshot shows the AWS Security Group Inbound Rules page for the 'ansible' security group. It displays three rules:

Security group rule ID	Type	Protocol	Port range	Source	Description - optional
sgr-0cfb8bf827fabbfa2	HTTP	TCP	80	Custom	0.0.0.0/0
sgr-0e5fdd175949f7cc8	Custom TCP	TCP	8080	Custom	0.0.0.0/0
sgr-0cacba689eaaf68e8	SSH	TCP	22	Custom	0.0.0.0/0

Step-3: Now come on instance and select 1st instance (ansible) and click on connect. It will open a linux terminal -> type **Clear** command.

```

Usage of /: 24.9% of 6.71GB Users logged in: 0
Memory usage: 20% IPv4 address for enx0: 172.31.13.107
Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

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.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-13-107:~$
```

i-06e5a4b61b232e855 (ansible)

PublicIPs: 15.207.222.240 PrivateIPs: 172.31.13.107

Step-4: type command `sudo apt update` and hit enter.

Step-5: type command `sudo apt install ansible` and hit enter -> it will ask yes/no type yes and hit enter.

Step-6: type command `sudo apt install openssh-client` and hit enter.

Step-7: type command `sudo apt install openssh-server` and hit enter.

Step-8: type command `cd ~/.ssh/` and hit enter.

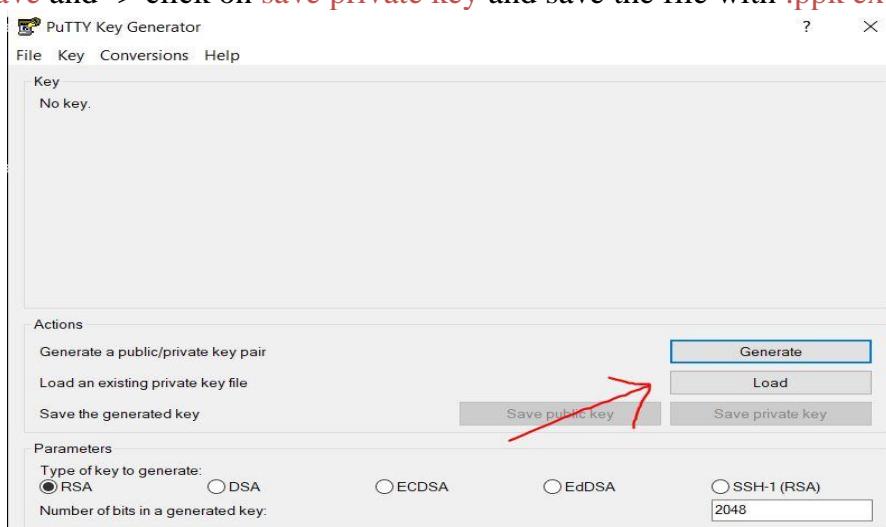
Step-9: type command `ls` and hit enter.

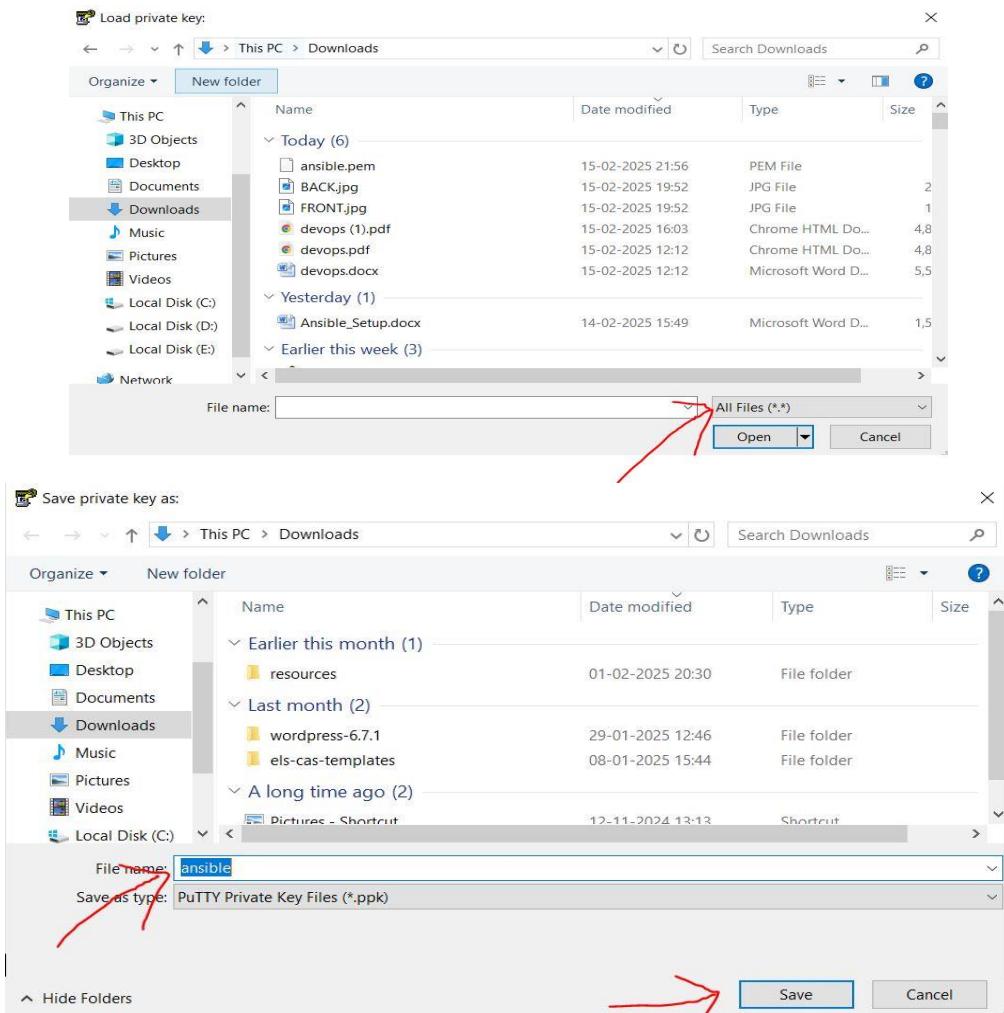
Step-10: type command `cd` and hit enter.

Step-11: type command `cd -` and hit enter. (it will show ssh path)

Step-12: now again type command `cd` and hit enter.

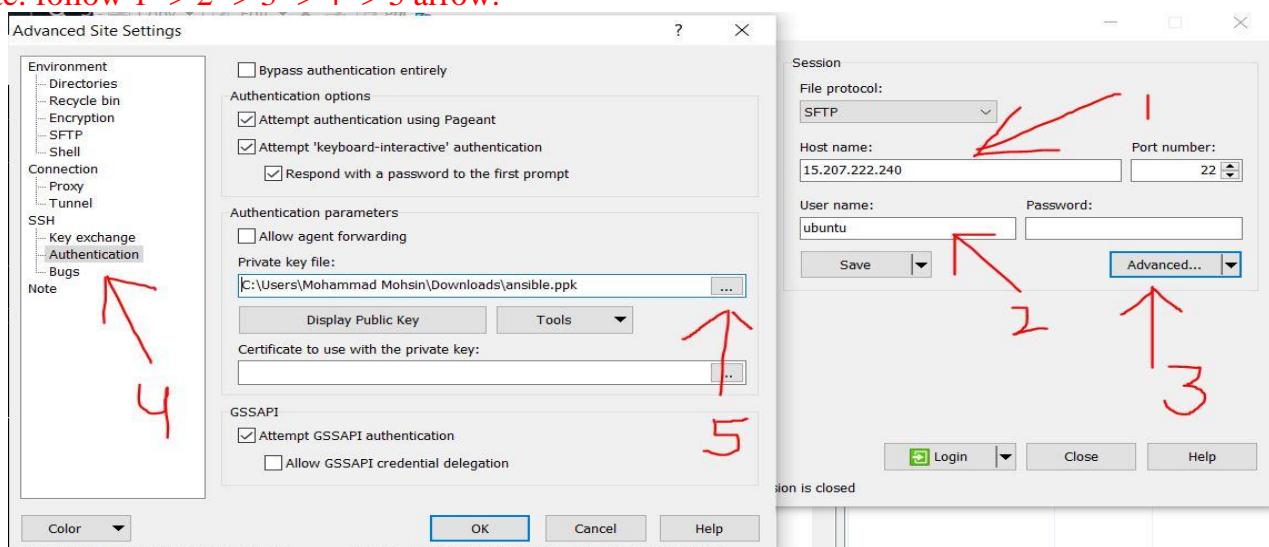
Step-13: open `puttygen` software -> click on `load` -> select as `all files` -> select `ansible.pem`(your key pair) -> click on `save` and -> click on `save private key` and save the file with `.ppk` extension.





Step-14: Now open **winCP** software -> it will ask for **host name** just copy and paste your **ansibleinstance Ip**-> In the place of **user name** type **Ubuntu** -> click on **advance** -> select **authentication** -> in the place of **private key** select your downloaded **.ppk** file -> click on **Ok** -> click on **Login**. (it will connect to your server and show a **Ubuntu wincp window**)

Note: follow 1 -> 2 -> 3 -> 4 -> 5 arrow.



Step-15: after connecting to your server it will show **two directory** (one is your local disk, another is ssh directory) -> right click in **ssh directory** -> click on **new** -> select **directory** -> create a **folder name as key** -> now select your **.pemfile** from left side local disk directory and **drag in your key folder**.

Step-16: Now come on in your terminal -> type **cd** command and hit enter -> type **ls** command hit enter, you will see key.

```
ubuntu@ip-172-31-13-107:~/.ssh$ cd
ubuntu@ip-172-31-13-107:~$ ls
ubuntu@ip-172-31-13-107:~$ cd
ubuntu@ip-172-31-13-107:~$ ls
key
ubuntu@ip-172-31-13-107:~$
```

Step-17: Now type **cd key/** and hit enter, you will see **ansible.pem**

Step-18: Now type **cp ansible.pem ~/ssh/** command and hit enter -> after that type **cd** hit enter -> after that **ls ~/ssh/** and hit enter, you will see **ansible.pem** and **authorized_key**

Step-19: Now create one more directory using **mkdir ansible-script** command and hit enter-> select directory using **cd ansible-script/** command and hit enter.

Step-20: Now write **vi inventory.ini** command and hit enter -> it will open your Vim Editor -> copy the given command and paste in your Vim editor -> after that in the place of [server1-ip] copy and paste server1 instance public ip and in the place of [server2-ip] copy and paste server2 instance public ip -> after that save this vim editor using **:wq!** Command and hit enter

Command:

```
[webservers]
server1 ansible_host=[server1-ip] ansible_user=ubuntu ansible_ssh_private_key_file=
/home/ubuntu/.ssh/ansible.pem
server2 ansible_host=[server2-ip] ansible_user=ubuntu ansible_ssh_private_key_file=
/home/ubuntu/.ssh/ansible.pem
```

Step-21: Now write the command **vi playbook.yml** and create a yml file -> it will again open your Vim editor -> copy and paste the given command in your vim editor after save and exit using command **:wq!** and hit enter.

Command:

```
-- name: Install Nginx on AWS EC2
hosts: webservers
become: yes
tasks:
  - name: Install Nginx
    apt:
      name: nginx
      state: present
      when: ansible_os_family == "Debian"

  - name: start and enable nginx server
    systemd:
      name: nginx
      state: started
```

Step-22: Now you can check your .ini file and .yml file using `cat inventory.ini` command and `cat playbook.yml` command.

Step-23: Now type `ansible-playbook -i playbook.yml` command and hit enter.

Step-24: Now type `ansible-playbook -i inventory.ini playbook.yml` command and hit enter -> it will ask for type `yes` and again `yes` and again `yes` or may be it will show server Unreachable.

Step-25: Now type `cd` and hit enter -> after that `cd ~/.ssh/` hit enter, you will see `ansible.pemauthorized_key` and `known_hosts`.

Step-26: Now again run the command `ansible-playbook -i inventory.ini playbook.yml`. it will run your server or may be it will show again an error server unreachable.

Step-27: If server is reachable is then check your server using server ip otherwise -> write command `chmod 400 ~/.ssh/ansible.pem` hit enter -> after that `ls -l ~/.ssh/` and hit enter, it will show Ubuntu file.

Step-28: Now again run the command `ansible-playbook -i inventory.ini playbook.yml`. now it will run your server properly. After that you can check your server in any browser using server ip.

OUTPUT:-

```
ubuntu@ip-172-31-4-180:~$ sudo apt-get install -y ansible
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
```

```
ubuntu@ip-172-31-4-180:~$ ansible-playbook playbook1.yml --syntax-check
playbook: playbook1.yml
ubuntu@ip-172-31-4-180:~$ vim playbook1.yml
ubuntu@ip-172-31-4-180:~$ ansible-playbook playbook1.yml --syntax-check
playbook: playbook1.yml
ubuntu@ip-172-31-4-180:~$ ansible-playbook playbook1.yml -b
PLAY [Configure tomcat9] ****
TASK [Gathering Facts] ****
[WARNING]: Platform linux on host 172.31.7.139 is using the discovered Python interpreter at /usr/bin/python3.10, but future installation of another Python interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.17/reference_appendices/interpreter_discovery.html for more information.
[WARNING]: Platform linux on host 172.31.5.200 is using the discovered Python interpreter at /usr/bin/python3.10, but future installation of another Python interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.17/reference_appendices/interpreter_discovery.html for more information.
ok: [172.31.5.200]
TASK [Install tomcat9] ****
ok: [172.31.7.139]
ok: [172.31.5.200]
TASK [Change port no of tomcat 8080 to 9090] ****
ok: [172.31.7.139]
ok: [172.31.5.200]
PLAY RECAP ****
172.31.5.200 : ok=3    changed=0   unreachable=0   failed=0    skipped=0   rescued=0   ignored=0
172.31.7.139 : ok=3    changed=0   unreachable=0   failed=0    skipped=0   rescued=0   ignored=0
```

Not secure 43.204.218.193

Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.

Not secure 13.233.103.243

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