Ansible

Create three ec2 linux instances

1st Ansible server

2nd Node1

3rd Node2

Connect server node

```
EPAM+Archana_Sama@EPINHYDW0B58 MINGW64 ~/Downloads (master)
$ ssh -i "ansiblekey.pem" ec2-user@ec2-13-126-194-209.ap-south-1.co
mpute.amazonaws.com
The authenticity of host 'ec2-13-126-194-209.ap-south-1.compute.ama
zonaws.com (13.126.194.209)' can't be established.
ED25519 key fingerprint is SHA256:gDPturt2dkClgq3Uq1ELpLX1jhPUmMNkA
iti7h4FwdM.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])
? yes
Warning: Permanently added 'ec2-13-126-194-209.ap-south-1.compute.a
mazonaws.com' (ED25519) to the list of known hosts.

       __|  __|_  )
       _|  (     /   Amazon Linux 2 AMI
      ___|\___|___|
```

$ Sudo su

$ wget https://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm

```
[ec2-user@ip-172-31-32-154 ~]$ sudo su -
[root@ip-172-31-32-154 ~]# wget https://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm
--2022-07-30 07:16:31--  https://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm
Resolving dl.fedoraproject.org (dl.fedoraproject.org)... 38.145.60.23, 38.145.60.24, 38.145.60.22
Connecting to dl.fedoraproject.org (dl.fedoraproject.org)|38.145.60.23|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 15608 (15K) [application/x-rpm]
Saving to: 'epel-release-latest-7.noarch.rpm'

100%[======================================================================>] 15,608      78.7KB/s   in 0.2s
```

$ ls

$ yum install (copy the above line)

```
[root@ip-172-31-32-154 ~]# ls
epel-release-latest-7.noarch.rpm
[root@ip-172-31-32-154 ~]# yum install epel-release-latest-7.noarch.rpm
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Examining epel-release-latest-7.noarch.rpm: epel-release-7-14.noarch
Marking epel-release-latest-7.noarch.rpm to be installed
Resolving Dependencies
```

```
yum install git python python-level python-pip openssl ansible -y
```

```
Complete!
[root@ip-172-31-32-154 ~]# yum install git python python-level python-pip openssl ansible -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core                                                               | 3.7 kB  00:00:00
227 packages excluded due to repository priority protections
Package python-2.7.18-1.amzn2.0.5.x86_64 already installed and latest version
No package python-level available.
Package 1:openssl-1.0.2k-24.amzn2.0.3.x86_64 already installed and latest version
Resolving Dependencies
--> Running transaction check
---> Package ansible.noarch 0:2.9.27-1.el7 will be installed
```

Check for ansible installed

```
[root@ip-172-31-32-154 ~]# ansible --version
ansible 2.9.27
  config file = /etc/ansible/ansible.cfg
  configured module search path = [u'/root/.ansible/plugins/modules', u'/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/lib/python2.7/site-packages/ansible
  executable location = /usr/bin/ansible
  python version = 2.7.18 (default, May 25 2022, 14:30:51) [GCC 7.3.1 20180712 (Red Hat 7.3.1-15)]
[root@ip-172-31-32-154 ~]# vi /etc/ansible/hosts
[root@ip-172-31-32-154 ~]# vi /etc/ansible/ansible.cfg
[root@ip-172-31-32-154 ~]# adduser ansible
```

$ vi /etc/ansible/hosts

To give the hosts name and (enter add node1 node 2 private ips in groups)

`vi /etc/ansible/ansible.cfg`

`uncomment remove # for inventory and sudo_user`
adduser ansible (#ansible user name) do on node 1, and node 2 also

```
  python version = 2.7.18 (default, May 25 2022, 14:30:51) [GCC 7.3.1 20180712 (Red Hat 7.3.1-15)]
[root@ip-172-31-32-154 ~]# vi /etc/ansible/hosts
[root@ip-172-31-32-154 ~]# vi /etc/ansible/ansible.cfg
[root@ip-172-31-32-154 ~]# adduser ansible
[root@ip-172-31-32-154 ~]# passwd ansible
Changing password for user ansible.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: all authentication tokens updated successfully.
[root@ip-172-31-32-154 ~]# su - ansible
[ansible@ip-172-31-32-154 ~]$ touch f1
[ansible@ip-172-31-32-154 ~]$ ls
f1
```

`su – ansible`
`exit`
`go to root`
Visudo

Add oneline

`ansible ALL=(ALL) NOPASSWD: ALL (same will be done to node 1 and node 2)`

`save`

adduser ansible (#ansible user name) do on node 1, and node 2 also

`vi /etc/ssh/sshd_config  (same will be done to node 1 and node 2)`

`remove #`

Remove # and add #to last

Now ,
`service sshd restart`
`su – ansible`
`ssh (pivate ip of node 1) repeat for node2 also create file and check`

`create files1 2 3`

logout

```
[root@ip-172-31-32-154 ~]# vi /etc/ssh/sshd_config
[root@ip-172-31-32-154 ~]# service sshd restart
Redirecting to /bin/systemctl restart sshd.service
[root@ip-172-31-32-154 ~]# su - ansible
```

Check the are present in node1 similarly create for node 2 also and check for it

```
[root@ip-172-31-47-238 ~]# vi /etc/ssh/sshd_config
[root@ip-172-31-47-238 ~]# service sshd restart
Redirecting to /bin/systemctl restart sshd.service
[root@ip-172-31-47-238 ~]# su - ansible
Last login: Sat Jul 30 07:27:00 UTC 2022 on pts/0
[ansible@ip-172-31-47-238 ~]$ ls
f1  f2
[ansible@ip-172-31-47-238 ~]$ ls
f1  f2
```

Login without password

$ ssh-keygen

Just enter without password

ssh-copy-id ansible@172.31.90.42 (private ip of any node1 or node2)

Same do for another node also

```
[ansible@ip-172-31-32-154 ~]$ ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/home/ansible/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/ansible/.ssh/id_rsa.
Your public key has been saved in /home/ansible/.ssh/id_rsa.pub.
The key fingerprint is:
SHA256:3EaZd+uwJua5EOAAQtOKMsk4SMb4ZZUOb2mEzQzFQ/w ansible@ip-172-31-32-154.ap-south-1.compute.internal
The key's randomart image is:
+---[RSA 2048]----+
|=oo  o=%+        |
|.=.oo o+B. o     |
|Bo.o. . =o+ . .  |
|Oo.  o = oE. . . |
|.o    . S o . .  |
|         o   +   |
|        . o o .  |
|         + +     |
|          +.     |
+----[SHA256]-----+
[ansible@ip-172-31-32-154 ~]$ ssh-copy-id ansible@172.31.47.50
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/ansible/.ssh/id_rsa.pub"
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
ansible@172.31.47.50's password:

Number of key(s) added: 1

Now try logging into the machine, with:   "ssh 'ansible@172.31.47.50'"
and check to make sure that only the key(s) you wanted were added.
```

We see we can login without password

```
[ansible@ip-172-31-32-154 ~]$ ssh 172.31.47.50
Last login: Sat Jul 30 07:34:13 2022 from ip-172-31-32-154.ap-south-1.compute.internal

       __|  __|_  )
       _|  (     /   Amazon Linux 2 AMI
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https://aws.amazon.com/amazon-linux-2/
12 package(s) needed for security, out of 22 available
Run "sudo yum update" to apply all updates.
[ansible@ip-172-31-47-50 ~]$ exit
logout
```

Check for number of hosts added

```
[ansible@ip-172-31-32-154 ~]$ ansible all --list-hosts
  hosts (2):
    172.31.47.50
    172.31.47.238
```

Playbook

Go to Server

Vi target.yml

```
ansible@ip-172-31-32-154:~
--- #my first- playbook

- hosts: demo
  user: ansible
  become: yes
  connection: ssh
  gather_facts: yes
~
~
~
~
```

To run command
ansible-playbook target.yml

```
[ansible@ip-172-31-32-154 ~]$ vi target.yml
[ansible@ip-172-31-32-154 ~]$ ansible-playbook target.yml

PLAY [demo] ********************************************************************************************************************

TASK [Gathering Facts] *********************************************************************************************************
[WARNING]: Platform linux on host 172.31.47.238 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: [172.31.47.238]
[WARNING]: Platform linux on host 172.31.47.50 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: [172.31.47.50]

PLAY RECAP *********************************************************************************************************************
172.31.47.238              : ok=1    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
172.31.47.50               : ok=1    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```

Vi task.yml

```
ansible@ip-172-31-32-154:~
--- # myplaybook2

- hosts: demo
  user: ansible
  become: yes
  connection: ssh
  tasks:
    - name: install HTTPD on centos 7
      action: yum name=httpd state=installed
~
~
```

```
[ansible@ip-172-31-32-154 ~]$ vi task.yml
[ansible@ip-172-31-32-154 ~]$ ansible-playbook task.yml

PLAY [demo] ********************************************************************************************************************

TASK [Gathering Facts] *********************************************************************************************************
[WARNING]: Platform linux on host 172.31.47.50 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: [172.31.47.50]
[WARNING]: Platform linux on host 172.31.47.238 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: [172.31.47.238]

TASK [install HTTPD on centos 7] ***********************************************************************************************
changed: [172.31.47.50]
changed: [172.31.47.238]

PLAY RECAP *********************************************************************************************************************
172.31.47.238              : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
172.31.47.50               : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```

ROLES

STEP1: INSTALL TREE

```
sudo yum install tree -y
```

```
tree
```

```
[ansible@ip-172-31-32-154 ~]$ sudo yum install tree -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core                                                                                          | 3.7 kB  00:00:00
227 packages excluded due to repository priority protections
Resolving Dependencies
--> Running transaction check
---> Package tree.x86_64 0:1.6.0-10.amzn2.0.1 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

================================================================================================================================
 Package              Arch                   Version                            Repository                          Size
================================================================================================================================
Installing:
 tree                 x86_64                 1.6.0-10.amzn2.0.1                 amzn2-core                          47 k

Transaction Summary
================================================================================================================================
Install  1 Package
```

Step 2: make a directory

```
mkdir -p playbook/roles/webserver/tasks
cd  playbook/
```

```
[ansible@ip-172-31-32-154 ~]$ tree
.
├── f1
├── target.yml
├── task.yml
└── vari.yml

0 directories, 4 files
```

```
touch roles/webserver/tasks/main.yml
ls
```

```
[ansible@ip-172-31-32-154 ~]$ cd playbook
[ansible@ip-172-31-32-154 playbook]$ touch roles/webserver/tasks/main.yml
[ansible@ip-172-31-32-154 playbook]$ ls
roles
[ansible@ip-172-31-32-154 playbook]$ tree
.
└── roles
    └── webserver
        └── tasks
            └── main.yml

3 directories, 1 file
[ansible@ip-172-31-32-154 playbook]$ vi roles/webserver/tasks/main.yml
```

Touch master.yml

Tree

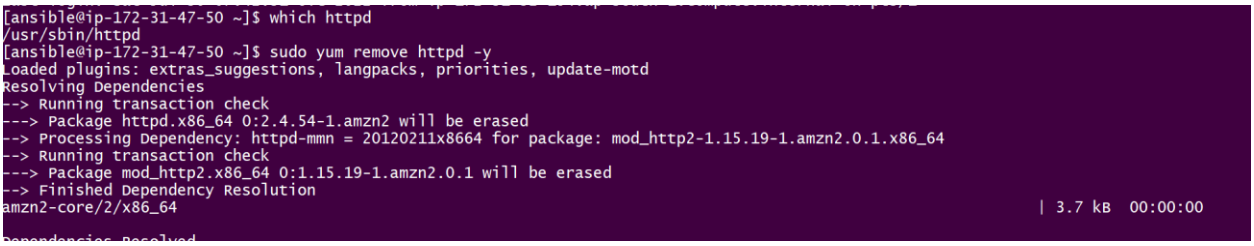
```
vi roles/webserver/tasks/main.yml

- name: install apache on RedHat
  yum: pkg=httpd state=latest
```

Httpd will installed installed

$which httpd

$sudo yum remove httpd -y



$vi master.yml

```
[ansible@ip-172-31-32-154 playbook]$ vi master.yml
[ansible@ip-172-31-32-154 playbook]$ tree
.
├── master.yml
└── roles
    └── webserver
        └── tasks
            └── main.yml

3 directories, 2 files
```

```
[ansible@ip-172-31-32-154 playbook]$ vi master.yml
[ansible@ip-172-31-32-154 playbook]$ ansible-playbook master.yml

PLAY [demo] ********************************************************************************************************************

TASK [Gathering Facts] *********************************************************************************************************
[WARNING]: Platform linux on host 172.31.47.50 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: [172.31.47.50]
[WARNING]: Platform linux on host 172.31.47.238 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: [172.31.47.238]

TASK [webserver : install apache on RedHat] ************************************************************************************
changed: [172.31.47.50]
changed: [172.31.47.238]

PLAY RECAP *********************************************************************************************************************
172.31.47.238              : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
172.31.47.50               : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```

We see again httpd is installed

```
/usr/bin/which: no httpd in (/usr/local/bin:/usr/bin:/usr/local/sbin:/usr/sbin:/home/ansible/.local/bin:/home/ansible/bin)
[ansible@ip-172-31-47-50 ~]$ which httpd
/usr/sbin/httpd
[ansible@ip-172-31-47-50 ~]$
```