

## Ansible 2

1. Watch ansible-02 video and write down notes.
2. Install httpd using ansible playbook, use handlers,notifiers.
  - Launch 3 instance
  - 1 is master
  - 2 are worker
  - Go to master instance
  - Install ansible
  - Create ssh-keygen
  - Add them in worker 1 and worker 2

```
total 0
[ec2-user@ip-172-31-24-70 ~]$ cat ~/.ssh/authorized_keys
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAQCltxBMOFWo927HChZUCnZC17iDU706yWUlsFybKX6R0fWrjMIU/rQydKjisojmiqdUYicNL+HD8qpP071WqQzxpRlwYKcG0+iW+l007dMBrgrnA+U7AUce6VaJaKxdl
GRtqIn-eiLYjJOYOncl+PvC7UelkWaz8TxQ5AE1/zsOkqn+GcyiVWku9qpmFE50v2xVgrzGDTgccbKQgrt2T2dWsk5+wGbWoKlO7nmEhtyJyx17SYUSPhENPtg08d+3U1TpVbfqpcZ+iGJyir72WIQ+8NSjhXNBmtnv
gFobYncZU8A5AoN024YfKn7IKQOnqOm+IkehJa0dUjimVH califorina.key
[ec2-user@ip-172-31-24-70 ~]$
```

- 
- Now go to cd /etc/ansible/
- Ls
- Edit ansible.cfg file
- [defaults]
- inventory = ./hosts
- remote\_user = ec2-user
- private\_key\_file = /home/ec2-user/.ssh/id\_rsa
- host\_key\_checking = False
- now edit hosts
- vi hosts
- add public ips of worker

```
[ec2-user@ip-172-31-24-191 ansible]$ ls
ansible.cfg  hosts  httpd.yml  roles
[ec2-user@ip-172-31-24-191 ansible]$ cat hosts
[all]
18.144.58.255
13.56.140.121
[ec2-user@ip-172-31-24-191 ansible]$ cat ansible.cfg
[defaults]
inventory = ./hosts
remote_user = ec2-user
private_key_file = /home/ec2-user/.ssh/id_rsa
host_key_checking = False

[ec2-user@ip-172-31-24-191 ansible]$ █
```

### i-0e803279e598d1914 (ansible master)

- PublicIPs: 18.144.39.95 PrivateIPs: 172.31.24.191
- and
- now create a httpd.yml file
- add script
- ---
- - name: Install and configure Apache httpd
- hosts: web
- become: yes
- 
- tasks:
- - name: Install httpd package
- yum:
- name: httpd
- state: present
- notify: restart httpd
- 
- - name: Start and enable httpd service
- service:
- name: httpd
- state: started

- enabled: yes
- 
- handlers:
- - name: restart httpd
- service:
- name: httpd
- state: restarted

```
[ec2-user@ip-172-31-24-191 ansible]$ ls
ansible.cfg  hosts  httpd.yml  roles
[ec2-user@ip-172-31-24-191 ansible]$ cat httpd.yml
---
- name: Install and configure Apache httpd
  hosts: all
  become: yes

  tasks:
    - name: Install httpd package
      yum:
        name: httpd
        state: present
      notify: restart httpd

    - name: Start and enable httpd service
      service:
        name: httpd
        state: started
        enabled: yes

  handlers:
    - name: restart httpd
      service:
        name: httpd
        state: restarted

[ec2-user@ip-172-31-24-191 ansible]$ █
```

- i-0e803279e598d1914 (ansible master)
- Run the playbook
- ansible-playbook httpd.yml
- install in worker 1nd 2

```

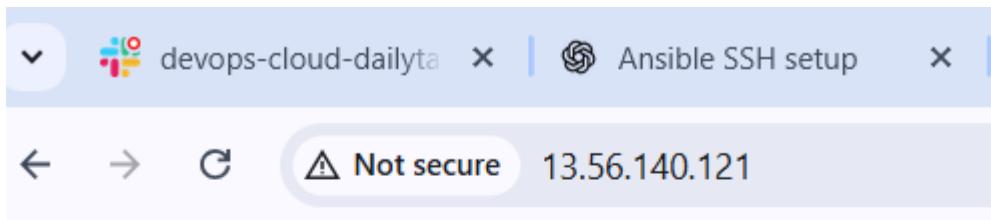
[ec2-user@ip-172-31-16-143 ~]$ systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; preset: disabled)
     Active: active (running) since Tue 2025-12-16 07:25:19 UTC; 8min ago
       Docs: man:httpd.service(8)
   Main PID: 10336 (httpd)
      Status: "Total requests: 0; Idle/Busy workers 100/0;Requests/sec: 0; Bytes served/sec: 0 B/sec"
        Tasks: 177 (limit: 1067)
       Memory: 13.3M
          CPU: 630ms
        CGroup: /system.slice/httpd.service
                  ├─10336 /usr/sbin/httpd -DFOREGROUND
                  ├─10501 /usr/sbin/httpd -DFOREGROUND
                  ├─10502 /usr/sbin/httpd -DFOREGROUND
                  ├─10503 /usr/sbin/httpd -DFOREGROUND
                  └─10504 /usr/sbin/httpd -DFOREGROUND

Dec 16 07:25:19 ip-172-31-16-143.us-west-1.compute.internal systemd[1]: Starting httpd.service - The Apache HTTP Server
Dec 16 07:25:19 ip-172-31-16-143.us-west-1.compute.internal systemd[1]: Started httpd.service - The Apache HTTP Server.
Dec 16 07:25:19 ip-172-31-16-143.us-west-1.compute.internal httpd[10336]: Server configured, listening on: port 80
[ec2-user@ip-172-31-16-143 ~]$ 

```

- i-0d9daeba36a8a7ee (1-worker)
- PublicIPs: 18.144.58.255 PrivateIPs: 172.31.16.143

- Worker 2



# It works!

- 3 . Write a ansible playbook to install apache tomcat.

- Write a tomcat.yml file
- To install apache tomcat
- So java need
- ---
- - name: Install Apache Tomcat on Amazon Linux
- hosts: all
- become: yes
- 
- vars:
- tomcat\_version: 9.0.83

- tomcat\_url: "https://archive.apache.org/dist/tomcat/tomcat-9/v{{ tomcat\_version }}/bin/apache-tomcat-{{ tomcat\_version }}.tar.gz"
- tomcat\_dir: /opt/tomcat
- 
- tasks:
  - - name: Install Java (Amazon Corretto)
  - yum:
    - name: java-11-amazon-corretto
    - state: present
  - 
  - - name: Create Tomcat directory
  - file:
    - path: "{{ tomcat\_dir }}"
    - state: directory
  - 
  - - name: Download Tomcat
  - get\_url:
    - url: "{{ tomcat\_url }}"
    - dest: /tmp/tomcat.tar.gz
  - 
  - - name: Extract Tomcat
  - unarchive:
    - src: /tmp/tomcat.tar.gz
    - dest: "{{ tomcat\_dir }}"
    - remote\_src: yes
    - extra\_opts: [--strip-components=1]
  - 
  - - name: Start Tomcat

- shell: "{{ tomcat\_dir }}/bin/startup.sh"
- Now
- Run playbook
- Ansible-play tomcat.yml

If you're seeing this, you've successfully installed Tomcat. Congratulations!

 Recommended Reading:

- [Security Considerations How-To](#)
- [Manager Application How-To](#)
- [Clustering/Session Replication How-To](#)

- Installed in worker2
- And worker1

If you're seeing this, you've successfully installed Tomcat. Congratulations!

 Recommended Reading:

- [Security Considerations How-To](#)
- [Manager Application How-To](#)

4 . Write a ansible playbook to provision one ec2 on aws.

- First install
- yum install -y python3-pip
- now install
- pip3 install boto boto3 botocore

```
[root@ip-172-31-24-191 ~]# pip3 install boto boto3 botocore
Collecting boto
  Downloading boto-2.49.0-py2.py3-none-any.whl (1.4 MB)
    |████████| 1.4 MB 9.4 MB/s
Collecting boto3
  Downloading boto3-1.42.10-py3-none-any.whl (140 kB)
    |████████| 140 kB 74.0 MB/s
Collecting botocore
  Downloading botocore-1.42.10-py3-none-any.whl (14.5 MB)
    |████████| 14.5 MB 63.6 MB/s
Requirement already satisfied: jmespath<2.0.0,>=0.7.1 in /usr/lib/python3.9/site-packages (from boto3) (0.10.0)
Collecting s3transfer<0.17.0,>=0.16.0
  Downloading s3transfer-0.16.0-py3-none-any.whl (86 kB)
    |████████| 86 kB 13.4 MB/s
Requirement already satisfied: urllib3<1.27,>=1.25.4 in /usr/lib/python3.9/site-packages (from botocore) (1.25.10)
Requirement already satisfied: python-dateutil<3.0.0,>=2.1 in /usr/lib/python3.9/site-packages (from botocore) (2.8.1)
Requirement already satisfied: six>=1.5 in /usr/lib/python3.9/site-packages (from python-dateutil<3.0.0,>=2.1->botocore) (1.15.0)
Installing collected packages: botocore, s3transfer, boto3, boto
Successfully installed boto-2.49.0 boto3-1.42.10 botocore-1.42.10 s3transfer-0.16.0
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to run pip as a regular user.
[root@ip-172-31-24-191 ~]#
```

- 
- ansible-galaxy collection install amazon.aws
- ansible-galaxy collection install community.aws
- now, create file ec2
- write as playbook
- ---
- - name: Provision one EC2 instance on AWS
- hosts: localhost
- connection: local
- gather\_facts: no
- 
- collections:
- - amazon.aws
- 
- tasks:
- - name: Create EC2 instance
- amazon.aws.ec2\_instance:
  - name: my-ansible-ec2
  - key\_name: california.key      #  correct key pair name
- instance\_type: t2.micro
- image\_id: ami-0623300d1b7caee89
- region: us-west-1
- wait: yes
- count: 1
- vpc\_subnet\_id: subnet-0388c08258f3e8433
- network:
  - assign\_public\_ip: true

- security\_group\_ids:
  - sg-05b6890ebc836602a
- tags:
  - Environment: dev
  - CreatedBy: Ansible
- Now run the playbook
- Ansible-playbook ec2

```
[root@ip-172-31-24-191 ansible]# ls
ansible.cfg  ec2  hosts  httpd.yml  roles  tomcat.yml
[root@ip-172-31-24-191 ansible]#
```

## i-0e803279e598d1914 (ansible master)

- ```
[root@ip-172-31-24-191 ansible]# vi ec2
[root@ip-172-31-24-191 ansible]# ansible-playbook ec2

PLAY [Provision one EC2 instance on AWS] ****
TASK [Create EC2 instance] ****
changed: [localhost]

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

Instance summary for i-0e803279e598d1914 (my-ansible-ec2) [Info](#)

Updated 1 minute ago

| Instance ID                                         | Public IPv4 address                                          | Private IPv4 addresses                                                                             |
|-----------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| <a href="#">i-0e803279e598d1914</a>                 | <a href="#">54.193.8.26</a>   <a href="#">open address ↗</a> | <a href="#">172.31.21.39</a>                                                                       |
| IPv6 address                                        | Instance state                                               | Public DNS                                                                                         |
| -                                                   | <a href="#">Running</a>                                      | <a href="#">ec2-54-193-8-26.us-west-1.compute.amazonaws.com</a>   <a href="#">open address ↗</a>   |
| Hostname type                                       | Private IP DNS name (IPv4 only)                              | Elastic IP addresses                                                                               |
| IP name: ip-172-31-21-39.us-west-1.compute.internal | <a href="#">ip-172-31-21-39.us-west-1.compute.internal</a>   | -                                                                                                  |
| Answer private resource DNS name                    | Instance type                                                | AWS Compute Optimizer finding                                                                      |
| -                                                   | t2.micro                                                     | <a href="#">Opt-in to AWS Compute Optimizer for recommendations</a>   <a href="#">Learn more ↗</a> |
| Auto-assigned IP address                            | VPC ID                                                       | Auto Scaling Group name                                                                            |
| <a href="#">54.193.8.26</a> [Public IP]             | <a href="#">vpc-06991213579eca234</a> ↗                      | -                                                                                                  |
| IAM Role                                            | Subnet ID                                                    |                                                                                                    |
| -                                                   | <a href="#">subnet-0388c08258f3e8433</a> ↗                   |                                                                                                    |

● instance launched

- -
- -

1. 5 . Write a ansible playbook to copy one file from node-1 to node-2.

- Create a test.txt in worker 1

- And write a playbook in master
- Copy.yml file
- ---
- - name: Copy file from node-1 to node-2
- hosts: 13.56.140.121
- become: yes
- 
- tasks:
- - name: Fetch file from node-1 to Ansible master
- fetch:
- src: /tmp/test.txt
- dest: /tmp/from\_node1/
- flat: yes
- delegate\_to: 18.144.58.255
- 
- - name: Copy file from Ansible master to node-2
- copy:
- src: /tmp/from\_node1/test.txt
- dest: /tmp/test.txt
- Now run the playbook
- Ansible-playbook copy.yml

```
[root@ip-172-31-24-191 ansible]# ansible-playbook copy.yml
PLAY [Copy file from node-1 to node-2] ****
TASK [Gathering Facts] ****
[WARNING]: Platform linux on host 13.56.140.121 is using the discovered Python interpreter at /usr/bin/python3.9, but future installation of interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.15/reference_appendices/interpreter_discovery.html.
ok: [13.56.140.121]

TASK [Fetch file from node-1 to Ansible master] ****
changed: [13.56.140.121 -> 18.144.58.255]

TASK [Copy file from Ansible master to node-2] ****
changed: [13.56.140.121]

PLAY RECAP ****
13.56.140.121 : ok=3    changed=2    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

[root@ip-172-31-24-191 ansible]# i-0e803279e598d1914 (ansible master)
● PublicIPs: 18.144.39.95 PrivateIPs: 172.31.24.191
```

- Worker 1 to master to worker 2

```
[root@ip-172-31-24-70 tmp]# ll
total 11528
drwxr-x---. 2 root root      60 Dec 16 09:14 hsuperfdata_root
drwx-----. 3 root root      60 Dec 16 06:55 systemd-private-373f093aa23641d4aace9c0510
drwx-----. 3 root root      60 Dec 16 06:55 systemd-private-373f093aa23641d4aace9c0510
drwx-----. 3 root root      60 Dec 16 07:25 systemd-private-373f093aa23641d4aace9c0510
drwx-----. 3 root root      60 Dec 16 06:55 systemd-private-373f093aa23641d4aace9c0510
drwx-----. 3 root root      60 Dec 16 06:55 systemd-private-373f093aa23641d4aace9c0510
drwx-----. 3 root root      60 Dec 16 06:55 systemd-private-373f093aa23641d4aace9c0510
drwx-----. 3 root root      60 Dec 16 06:55 systemd-private-373f093aa23641d4aace9c0510
-rw-r--r--. 1 root root      0 Dec 16 09:57 test.txt
● -rw-r--r--. 1 root root 11801705 Dec 16 07:46 tomcat.tar.gz
```

- copied.

1. 6. Write a ansible playbook to create different files with different names using single playbook.

- Write a playbook**

- ---
- - name: Create different files using one playbook
- hosts: all
- become: yes
- 
- tasks:
- - name: Create files with new names
- file:
- path: "/tmp/{{ item }}"
- state: touch
- mode: '0644'
- loop:
- - kamal.txt
- - devops.log
- - ansible.conf
- - aws\_report.csv

```
[root@ip-172-31-24-191 ansible]# cat creating.files
---
- name: Create different files using one playbook
  hosts: all
  become: yes

  tasks:
    - name: Create files with new names
      file:
        path: "/tmp/{{ item }}"
        state: touch
        mode: '0644'
      loop:
        - kamal.txt
        - devops.log
```

- As we already have inventory file with worker 1 ip and worker 2 ip
- So in the hosts we gave group name
- So files will be created in worker 1 and 2

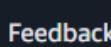
```
[root@ip-172-31-24-70 tmp]# ls
devops.log
hsperfdata_root
kamal.txt
systemd-private-373f093aa23641d4aace9c051c24c84f-chrony.service-qnw2Dz
systemd-private-373f093aa23641d4aace9c051c24c84f-dbus-broker.service-Dq2ZFg
systemd-private-373f093aa23641d4aace9c051c24c84f-htpd.service-wkA5ds
[root@ip-172-31-24-70 tmp]#
```

**i-040d667aa2671f4f4 (2-worker)**

```
[root@ip-172-31-16-143 tmp]# ls
devops.log
hsperfdata_root
kamal.txt
systemd-private-665b08eaf42b44718712c43420a7d57
systemd-private-665b08eaf42b44718712c43420a7d57
systemd-private-665b08eaf42b44718712c43420a7d57
[root@ip-172-31-16-143 tmp]#
```

### i-0d09daeba36a8a7ee (1-worker)

Public IPs: 18.144.58.255 Private IPs: 172.31.16.143

 CloudShell  Feedback  Console Mobile App