

# ANSIBLE 02

## 1) Watch ansible-02 video and write down notes.

→ watched and made note of it.

## 2) Install httpd using ansible playbook, use handlers, notifiers.

→ Check python

→ Apt update

→ Sudo apt install ansible

→ Ssh keygen

→ check connection: ansible all -m ping

```
ubuntu@ip-172-31-37-195:~$ ansible all -m ping
The authenticity of host '172.31.41.66 (172.31.41.66)' can't be established.
ED25519 key fingerprint is SHA256:Nk24mmdQN1QRaizOKfj0TFrva51G/LfDZ7RF8R0lBmI.
This key is not known by any other names.
The authenticity of host '172.31.32.229 (172.31.32.229)' can't be established.
ED25519 key fingerprint is SHA256:Wqh6l8dvtiF9t5BzZ0+7nPydQpjeB5U0Q6Ic8CZgCd4.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
172.31.41.66 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": false,
  "ping": "pong"
}
yes
172.31.32.229 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": false,
  "ping": "pong"
}
```

→ Ansible Playbook to Install httpd(apache2) using handlers, notifiers:

```
ubuntu@ip-172-31-37-195: ~
--
- hosts: all
  become: yes
  tasks:
    - name: Install Apache
      apt: name=apache2 state=latest
    - name: copy index.html
      copy: src=index.html dest=/var/www/html
      notify: Restart apache2
  handlers:
    - name: Restart apache2
      service: name=apache2 state=restarted
~
~
~
~
~
```

## →Run playbook:

```
ubuntu@ip-172-31-37-195:~/playbooks$ ansible-playbook apache2.yml

PLAY [all] *****

TASK [Gathering Facts] *****
ok: [172.31.41.66]
ok: [172.31.32.229]

TASK [Install Apache (httpd)] *****
changed: [172.31.41.66]
changed: [172.31.32.229]

TASK [Debug Apache Installation Result] *****
ok: [172.31.32.229] => {
  "apache_install_result": {
    "cache_update_time": 1741164292,
    "cache_updated": false,
    "changed": true,
    "time": [
      1741164292.0,
      1741164292.0
    ]
  }
}

TASK [Copy index.html] *****
changed: [172.31.32.229]
changed: [172.31.41.66]

RUNNING HANDLER [Restart apache2] *****
changed: [172.31.32.229]
changed: [172.31.41.66]

PLAY RECAP *****
172.31.32.229      : ok=5    changed=3    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
172.31.41.66      : ok=5    changed=3    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

ubuntu@ip-172-31-37-195:~/playbooks$ vi apache2.yml
ubuntu@ip-172-31-37-195:~/playbooks$
```

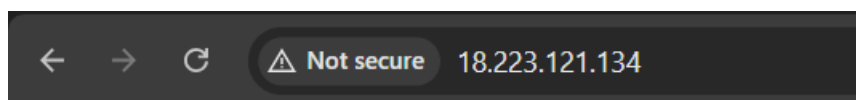
## →Apache 2 running in worker1:

```
ubuntu@ip-172-31-32-229:~$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
   Active: active (running) since Wed 2025-03-26 10:12:33 UTC; 7min ago
     Docs: https://httpd.apache.org/docs/2.4/
   Process: 2910 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
  Main PID: 2913 (apache2)
    Tasks: 55 (limit: 1129)
   Memory: 5.4M (peak: 5.7M)
      CPU: 42ms
   CGroup: /system.slice/apache2.service
           └─2913 /usr/sbin/apache2 -k start
             └─2915 /usr/sbin/apache2 -k start
               └─2916 /usr/sbin/apache2 -k start

Mar 26 10:12:33 ip-172-31-32-229 systemd[1]: Starting apache2.service - The Apache HTTP Server...
Mar 26 10:12:33 ip-172-31-32-229 systemd[1]: Started apache2.service - The Apache HTTP Server.
ubuntu@ip-172-31-32-229:~$
```

i-0227c43cf5c08d637 (Ansible-worker1)

PublicIPs: 18.223.121.134 PrivateIPs: 172.31.32.229



hello this is my first ansible playbook!!

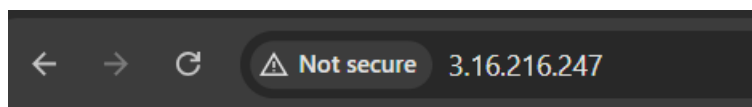
## →Apache 2 running in worker2:

```
ubuntu@ip-172-31-41-66:~$ cd .ssh/
ubuntu@ip-172-31-41-66:~/.ssh$ ls
authorized_keys
ubuntu@ip-172-31-41-66:~/.ssh$ vi authorized_keys
ubuntu@ip-172-31-41-66:~/.ssh$ cd
ubuntu@ip-172-31-41-66:~$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
   Active: active (running) since Wed 2025-03-26 10:12:33 UTC; 3min 49s ago
     Docs: https://httpd.apache.org/docs/2.4/
   Process: 2882 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
   Main PID: 2885 (apache2)
     Tasks: 55 (limit: 1129)
    Memory: 5.4M (peak: 5.6M)
       CPU: 36ms
    CGroup: /system.slice/apache2.service
           └─2885 /usr/sbin/apache2 -k start
           └─2887 /usr/sbin/apache2 -k start
           └─2888 /usr/sbin/apache2 -k start

Mar 26 10:12:33 ip-172-31-41-66 systemd[1]: Starting apache2.service - The Apache HTTP Server...
Mar 26 10:12:33 ip-172-31-41-66 systemd[1]: Started apache2.service - The Apache HTTP Server.
ubuntu@ip-172-31-41-66:~$
```

i-0e04a62c82e7f5dec (Ansible-worker2)

PublicIPs: 3.16.216.247 PrivateIPs: 172.31.41.66



hello this is my first ansible playbook!!

## 3)Write a ansible playbook to install apache tomcat.

### → ansible playbook to install apache tomcat:

```
ubuntu@ip-172-31-37-195: ~
---
- hosts: all
  become: yes
  tasks:
    - name: Install Java
      apt:
        name: default-jdk
        state: present
    - name: Download Tomcat
      get_url:
        url: "https://archive.apache.org/dist/tomcat/tomcat-9/v9.0.80/bin/apache-tomcat-9.0.80.tar.gz"
        dest: /tmp/
    - name: Extract Tomcat
      unarchive:
        src: /tmp/apache-tomcat-9.0.80.tar.gz
        dest: /opt/
        remote_src: yes
    - name: Start Tomcat
      command: /opt/apache-tomcat-9.0.80/bin/startup.sh
~
~
~
~
~
~
~
```

## →Run playbook:

```
ubuntu@ip-172-31-37-195:~$ vi tomcat.yml
ubuntu@ip-172-31-37-195:~$ ansible-playbook tomcat.yml

PLAY [all] *****

TASK [Gathering Facts] *****
ok: [172.31.32.229]
ok: [172.31.41.66]

TASK [Install Java] *****
ok: [172.31.32.229]
ok: [172.31.41.66]

TASK [Download Tomcat] *****
changed: [172.31.41.66]
changed: [172.31.32.229]

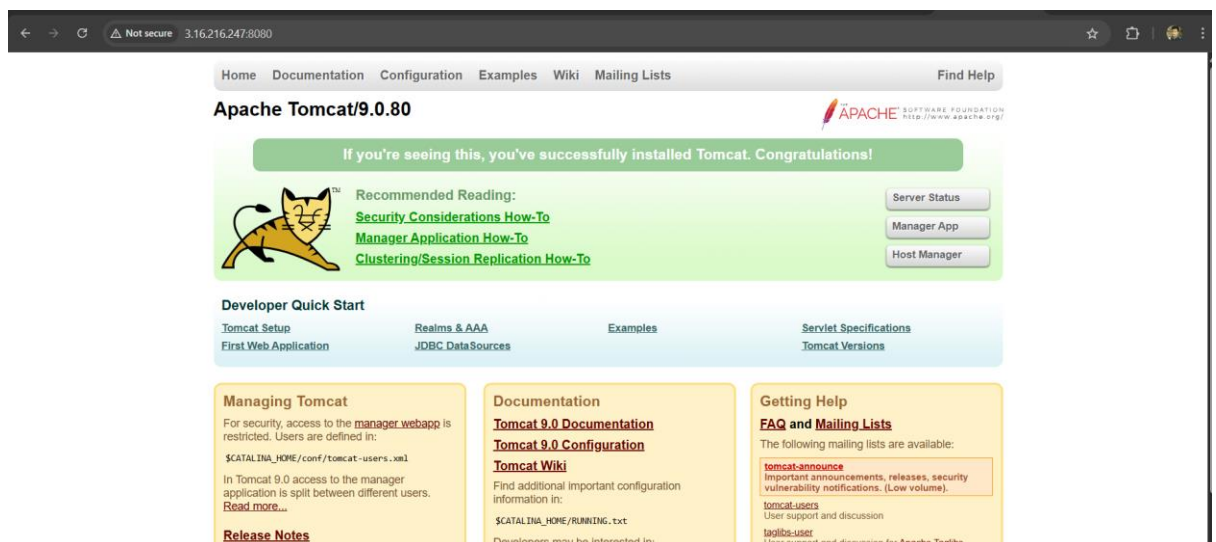
TASK [Extract Tomcat] *****
changed: [172.31.32.229]
changed: [172.31.41.66]

TASK [Start Tomcat] *****
changed: [172.31.41.66]
changed: [172.31.32.229]

PLAY RECAP *****
172.31.32.229      : ok=5    changed=3    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
172.31.41.66      : ok=5    changed=3    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

ubuntu@ip-172-31-37-195:~$
```

## →tomcat running:



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

### →AWS configure:

```
ubuntu@ip-172-31-37-195:~$ aws --version
aws-cli/2.25.3 Python/3.12.9 Linux/6.8.0-1024-aws exe/x86_64.ubuntu.24
ubuntu@ip-172-31-37-195:~$ aws configure
AWS Access Key ID [None]: AKIA6ELKOLHCKFBV3FOM
AWS Secret Access Key [None]: +bZOX8b1dk51bnjI/84zPy9KcRQkDAjffFqYFYj8F
Default region name [None]: us-east-2
Default output format [None]: json
ubuntu@ip-172-31-37-195:~$ ansible-playbook ec2.yml

PLAY [Provision an EC2 instance on AWS] *****

TASK [Launch EC2 instance] *****
```

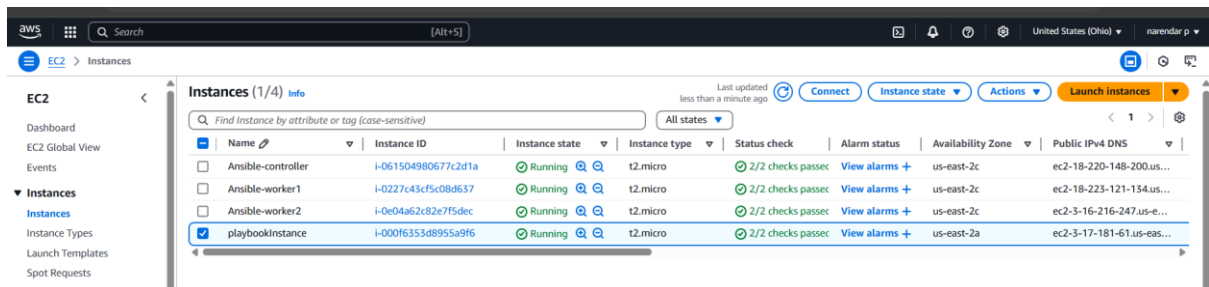
→ ansible playbook to provision one ec2 on aws.

```
ubuntu@ip-172-31-37-195: ~  
---  
- name: Provision an EC2 Instance on AWS  
  hosts: localhost  
  gather_facts: no  
  tasks:  
    - name: Launch EC2 instance  
      ec2_instance:  
        name: playbookInstance  
        key_name: ansible  
        instance_type: t2.micro  
        image_id: ami-04f167a56786e4b09  
        region: us-east-2  
        vpc_subnet_id: subnet-084cd94d0085a7ade  
        security_groups: ["default"]  
        network:  
          assign_public_ip: yes  
        tags:  
          Name: instancenaren  
        register: ec2  
    - name: Display instance details  
      debug:  
        var: ec2.instances[0]  
~  
~  
~  
~
```

→run playbook:

```
ubuntu@ip-172-31-37-195:~$ vi ec2.yml  
ubuntu@ip-172-31-37-195:~$ ansible-playbook ec2.yml  
  
PLAY [Provision an EC2 Instance on AWS] *****  
  
TASK [Launch EC2 instance] *****  
changed: [localhost]  
  
TASK [Display instance details] *****  
ok: [localhost] => {  
  "ec2.instances[0]": {  
    "ami_launch_index": 0,  
    "architecture": "x86_64",  
    "block_device_mappings": [  
      {  
        "device_name": "/dev/sda1",  
        "ebs": {  
          "attach_time": "2025-03-26T13:23:20+00:00",  
          "delete_on_termination": true,  
          "status": "attaching",  
          "volume_id": "vol-05f9ccb130d3690a3"  
        }  
      }  
    ],  
    "Name": "playbookInstance",  
    "usage_operation": "RunInstances",  
    "usage_operation_update_time": "2025-03-26T13:23:19+00:00",  
    "virtualization_type": "hvm",  
    "vpc_id": "vpc-0f9ee23733eee978a"  
  }  
}  
  
PLAY RECAP *****  
localhost : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0  
  
ubuntu@ip-172-31-37-195:~$
```

→ Created ec2 on my AWS:

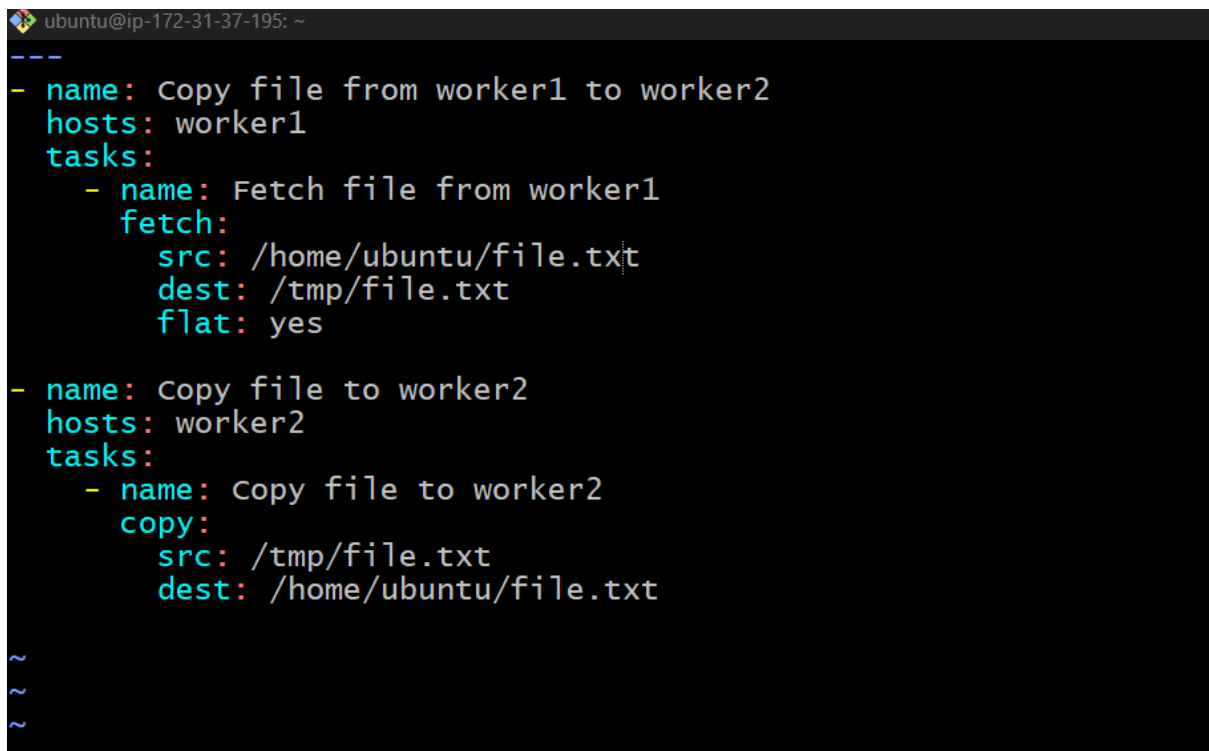


The screenshot shows the AWS Management Console interface for EC2 instances. The left sidebar contains navigation links for EC2, Dashboard, EC2 Global View, Events, Instances, Instance Types, Launch Templates, and Spot Requests. The main panel displays a table of instances with columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, and Public IPv4 DNS. Four instances are listed: Ansible-controller, Ansible-worker1, Ansible-worker2, and playbookinstance. All instances are in the 'Running' state. The 'playbookinstance' is selected with a blue checkmark.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
Ansible-controller	i-061504980677c2d1a	Running	t2.micro	2/2 checks passed	View alarms +	us-east-2c	ec2-18-220-148-200.us...
Ansible-worker1	i-0227c43cf5c08d637	Running	t2.micro	2/2 checks passed	View alarms +	us-east-2c	ec2-18-223-121-134.us...
Ansible-worker2	i-0e04a62c82e7f5dec	Running	t2.micro	2/2 checks passed	View alarms +	us-east-2c	ec2-3-16-216-247.us-e...
playbookinstance	i-000f6353d8955a9f6	Running	t2.micro	2/2 checks passed	View alarms +	us-east-2a	ec2-3-17-181-61.us-eas...

5) Write an ansible playbook to copy one file from worker1 to worker2.

→ ansible playbook to copy one file from worker1 to worker2:



The screenshot shows a terminal window with an Ansible playbook. The terminal prompt is 'ubuntu@ip-172-31-37-195: ~'. The playbook is written in YAML format and consists of two tasks. The first task is named 'Copy file from worker1 to worker2' and is executed on 'worker1'. It includes a 'fetch' task to retrieve a file from '/home/ubuntu/file.txt' on worker1 to '/tmp/file.txt' on worker1. The second task is named 'Copy file to worker2' and is executed on 'worker2'. It includes a 'copy' task to copy the file from '/tmp/file.txt' on worker2 to '/home/ubuntu/file.txt' on worker2.

```
ubuntu@ip-172-31-37-195: ~
--
- name: Copy file from worker1 to worker2
  hosts: worker1
  tasks:
    - name: Fetch file from worker1
      fetch:
        src: /home/ubuntu/file.txt
        dest: /tmp/file.txt
        flat: yes

- name: Copy file to worker2
  hosts: worker2
  tasks:
    - name: copy file to worker2
      copy:
        src: /tmp/file.txt
        dest: /home/ubuntu/file.txt

~
~
~
```

## →run playbook:

```
ubuntu@ip-172-31-37-195:~$ vi file.yml
ubuntu@ip-172-31-37-195:~$ ansible-playbook file.yml

PLAY [Copy file from worker1 to worker2] *****

TASK [Gathering Facts] *****
ok: [172.31.32.229]

TASK [Fetch file from worker1] *****
changed: [172.31.32.229]

PLAY [Copy file to worker2] *****

TASK [Gathering Facts] *****
ok: [172.31.41.66]

TASK [Copy file to worker2] *****
changed: [172.31.41.66]

PLAY RECAP *****
172.31.32.229      : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
172.31.41.66      : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
ubuntu@ip-172-31-37-195:~$
```

## →created file.txt worker1:

```
Last login: Wed Mar 26 10:56:04 2025 from 172.31.37.195
ubuntu@ip-172-31-32-229:~$ sudo touch file.txt
ubuntu@ip-172-31-32-229:~$ ls
file.txt
ubuntu@ip-172-31-32-229:~$ pwd
/home/ubuntu
ubuntu@ip-172-31-32-229:~$
```

**i-0227c43cf5c08d637 (Ansible-worker1)**

PublicIPs: 18.223.121.134 PrivateIPs: 172.31.32.229

## →copied file.txt in worker2:

```
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

Last login: Wed Mar 26 10:56:04 2025 from 172.31.37.195
ubuntu@ip-172-31-41-66:~$ pwd
/home/ubuntu
ubuntu@ip-172-31-41-66:~$ ls
file.txt
ubuntu@ip-172-31-41-66:~$
```

**i-0e04a62c82e7f5dec (Ansible-worker2)**

PublicIPs: 3.16.216.247 PrivateIPs: 172.31.41.66

## 6) Write an ansible playbook to create different files with different names using single playbook.

→ ansible playbook to create different files with different names using single playbook.

```
ubuntu@ip-172-31-37-195: ~  
---  
- name: Create multiple files  
  hosts: all  
  gather_facts: no  
  tasks:  
    - name: Create files with different names  
      file:  
        path: "/home/ubuntu/{{ item }}"  
        state: touch  
      with_items:  
        - file1.txt  
        - file2.log  
        - file3.conf  
        - file4.yaml  
~  
~
```

→run playbook:

```
ubuntu@ip-172-31-37-195:~$ vi multifile.yml  
ubuntu@ip-172-31-37-195:~$ ansible-playbook multifile.yml  
  
PLAY [Create multiple files] *****  
  
TASK [Create files with different names] *****  
changed: [172.31.41.66] => (item=file1.txt)  
changed: [172.31.32.229] => (item=file1.txt)  
changed: [172.31.41.66] => (item=file2.log)  
changed: [172.31.32.229] => (item=file2.log)  
changed: [172.31.41.66] => (item=file3.conf)  
changed: [172.31.32.229] => (item=file3.conf)  
changed: [172.31.41.66] => (item=file4.yaml)  
changed: [172.31.32.229] => (item=file4.yaml)  
  
PLAY RECAP *****  
172.31.32.229      : ok=1    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0  
172.31.41.66      : ok=1    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0  
  
ubuntu@ip-172-31-37-195:~$
```



→created different files in worker1 and worker2:

```
ubuntu@ip-172-31-41-66:~$ ls
file.txt
ubuntu@ip-172-31-41-66:~$ ls
file.txt file1.txt file2.log file3.conf file4.yaml
ubuntu@ip-172-31-41-66:~$
```

### **i-0e04a62c82e7f5dec (Ansible-worker2)**

PublicIPs: 3.16.216.247 PrivateIPs: 172.31.41.66

---

```
ubuntu@ip-172-31-32-229:~$ ls
file.txt
ubuntu@ip-172-31-32-229:~$ pwd
/home/ubuntu
ubuntu@ip-172-31-32-229:~$ ls
file.txt file1.txt file2.log file3.conf file4.yaml
ubuntu@ip-172-31-32-229:~$
```

### **i-0227c43cf5c08d637 (Ansible-worker1)**

PublicIPs: 18.223.121.134 PrivateIPs: 172.31.32.229