1. **Watch ansible-02 video and write down notes.**
2. **Install httpd using ansible playbook, use handlers, notifiers.**

Create directory named as playbooks and go to that directory and crete a file named as httpd.yml

```
[root@ip-172-31-31-18 ~]# mkdir playbooks
[root@ip-172-31-31-18 ~]# cd playbooks/
[root@ip-172-31-31-18 playbooks]# vi httpd.yml
```

Give the script like this

```
---
- hosts: all
  become: yes
  tasks:
    - name: Install httpd
      yum: name=httpd state=latest
    - name: Copy index.html
      copy: src=index.html dest=/var/www/html
      notify: Restart httpd
  handlers:
      name: Restart httpd
      service: name=httpd state=restarted
```

Create index.html in the playbooks directory.

```
this is httpd index file
```

To check the syntax of playbook use this command.

- ansible-playbook httpd.yml –syntax-check

```
[root@ip-172-31-31-18 playbooks]# vi httpd.yml
[root@ip-172-31-31-18 playbooks]# ansible-playbook httpd.yml --syntax-check
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see det

playbook: httpd.yml
[root@ip-172-31-31-18 playbooks]# ansible-playbook httpd.yml --check
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see det

PLAY [all] ********************************************************************************

TASK [Gathering Facts] ********************************************************************
[WARNING]: Platform linux on host 172.31.14.138 is using the discovered Python interpreter at
installation of another Python interpreter could change the meaning of that path. See https://
core/2.15/reference_appendices/interpreter_discovery.html for more information.
ok: [172.31.14.138]
[WARNING]: Platform linux on host 172.31.71.79 is using the discovered Python interpreter at /
installation of another Python interpreter could change the meaning of that path. See https://
core/2.15/reference_appendices/interpreter_discovery.html for more information.
ok: [172.31.71.79]

TASK [Install httpd] **********************************************************************
changed: [172.31.14.138]
changed: [172.31.71.79]

TASK [Copy index.html] ********************************************************************
changed: [172.31.14.138]
changed: [172.31.71.79]
```

To execute the playbook use

- ansible-playbook httpd.yml

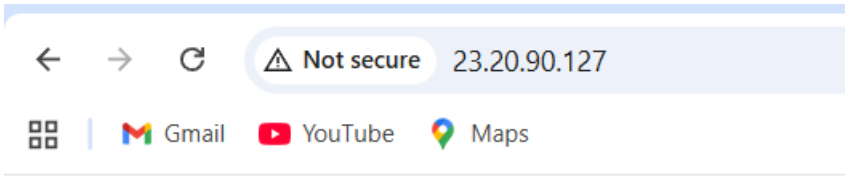
```
[root@ip-172-31-31-18 playbooks]# ansible-playbook httpd.yml
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see details

PLAY [all] ********************************************************************************

TASK [Gathering Facts] ********************************************************************
[WARNING]: Platform linux on host 172.31.14.138 is using the discovered Python interpreter at /usr/b
installation of another Python interpreter could change the meaning of that path. See https://docs.a
core/2.15/reference_appendices/interpreter_discovery.html for more information.
ok: [172.31.14.138]
[WARNING]: Platform linux on host 172.31.71.79 is using the discovered Python interpreter at /usr/bi
installation of another Python interpreter could change the meaning of that path. See https://docs.a
core/2.15/reference_appendices/interpreter_discovery.html for more information.
ok: [172.31.71.79]

TASK [Install httpd] **********************************************************************
changed: [172.31.14.138]
changed: [172.31.71.79]

TASK [Copy index.html] ********************************************************************
changed: [172.31.14.138]
changed: [172.31.71.79]

RUNNING HANDLER [Restart httpd] ***********************************************************
changed: [172.31.71.79]
changed: [172.31.14.138]

PLAY RECAP ********************************************************************************
172.31.14.138              : ok=4    changed=3    unreachable=0    failed=0    skipped=0    rescued=
172.31.71.79               : ok=4    changed=3    unreachable=0    failed=0    skipped=0    rescued=

[root@ip-172-31-31-18 playbooks]#
```

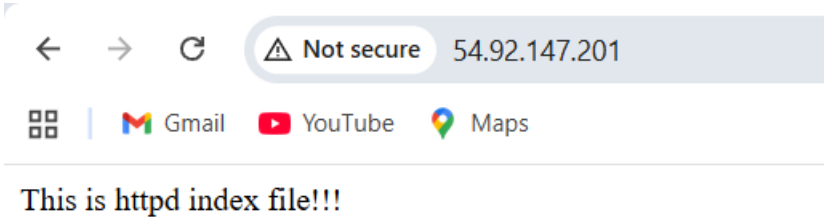
To check dry run use this command.

- ansible-playbook httpd.yml --check

```
[root@ip-172-31-31-18 playbooks]# ansible-playbook httpd.yml --check
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see detail

PLAY [all] *********************************************************************************

TASK [Gathering Facts] *********************************************************************
[WARNING]: Platform linux on host 172.31.14.138 is using the discovered Python interpreter at /us
installation of another Python interpreter could change the meaning of that path. See https://doc
core/2.15/reference_appendices/interpreter_discovery.html for more information.
ok: [172.31.14.138]
[WARNING]: Platform linux on host 172.31.71.79 is using the discovered Python interpreter at /usr
installation of another Python interpreter could change the meaning of that path. See https://doc
core/2.15/reference_appendices/interpreter_discovery.html for more information.
ok: [172.31.71.79]

TASK [Install httpd] ***********************************************************************
ok: [172.31.14.138]
ok: [172.31.71.79]

TASK [Copy index.html] *********************************************************************
ok: [172.31.14.138]
ok: [172.31.71.79]

PLAY RECAP *********************************************************************************
172.31.14.138              : ok=3    changed=0    unreachable=0    failed=0    skipped=0    rescu
172.31.71.79               : ok=3    changed=0    unreachable=0    failed=0    skipped=0    rescu

[root@ip-172-31-31-18 playbooks]#
```

if you check with the public ips you can see your index.html page.





3. Write a ansible playbook to install apache tomcat.

Create a file named as tomcat.yml and paste the playbook.

```
[root@ip-172-31-31-18 playbooks]# vi tomcat.yml
```

```
---
- hosts: all
  become: yes

  tasks:
    - name: Install Java (Amazon Linux 2023)
      package:
        name: java-17-amazon-corretto
        state: present

    - name: Create Tomcat directory
      file:
        path: /opt/tomcat
        state: directory

    - name: Download Tomcat
      get_url:
        url: https://archive.apache.org/dist/tomcat/tomcat-10/v10.1.26/bin/apache-tomcat-10.1.26.tar.gz
        dest: /tmp/tomcat.tar.gz
```

- name: Extract Tomcat

unarchive:

src: /tmp/tomcat.tar.gz

dest: /opt/tomcat

remote_src: yes

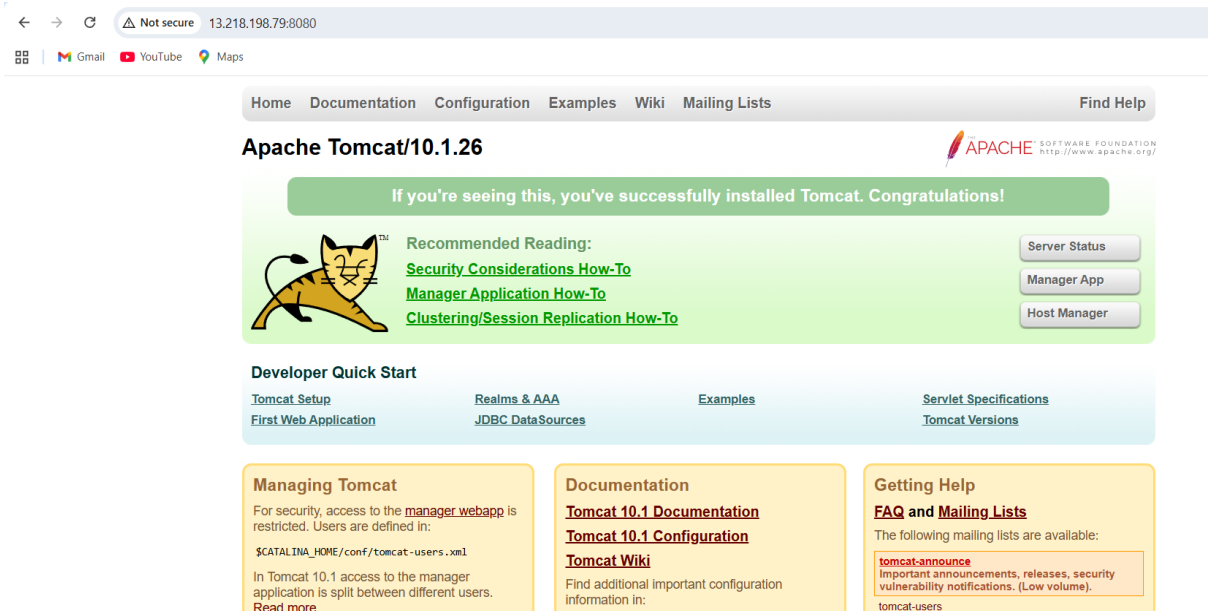
extra_opts: [--strip-components=1]

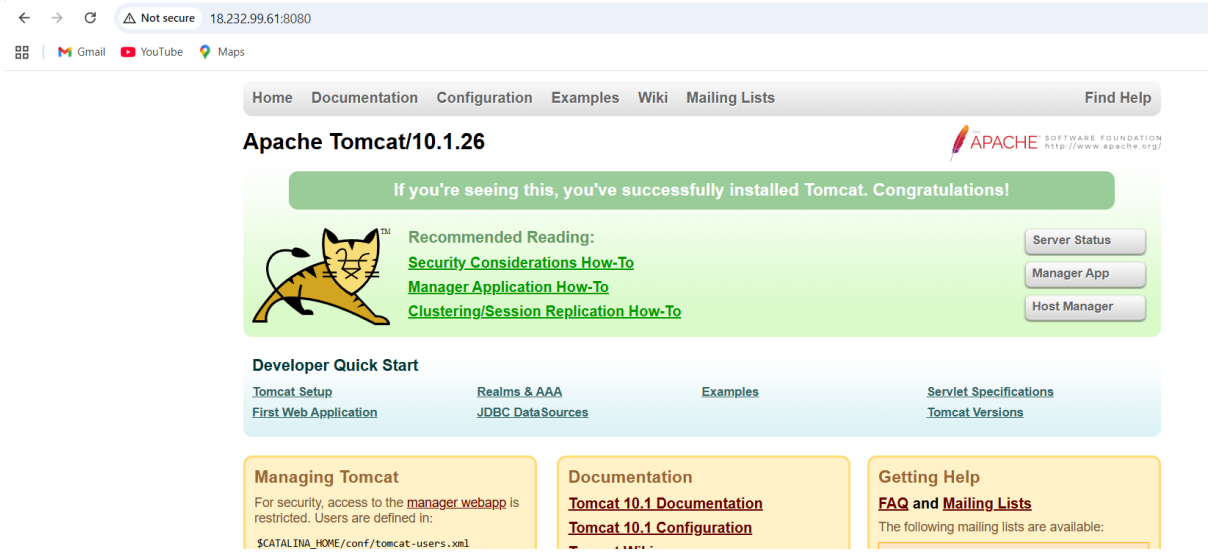
- name: Start Tomcat

command: /opt/tomcat/bin/startup.sh

```yaml
---
- hosts: all
  become: yes

  tasks:
    - name: Install Java (Amazon Linux 2023)
      package:
        name: java-17-amazon-corretto
        state: present

    - name: Create Tomcat directory
      file:
        path: /opt/tomcat
        state: directory

    - name: Download Tomcat
      get_url:
        url: https://archive.apache.org/dist/tomcat/tomcat-10/v10.1.26/bin/apache-tomcat-10.1.26.tar.gz
        dest: /tmp/tomcat.tar.gz

    - name: Extract Tomcat
      unarchive:
        src: /tmp/tomcat.tar.gz
        dest: /opt/tomcat
        remote_src: yes
        extra_opts: [--strip-components=1]

    - name: Start Tomcat
      command: /opt/tomcat/bin/startup.sh
```

If you browse with the ip addresses tomcat will be appeard in your servers.





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

Create a file named as ec2.yml

Make sure you install this commands.

- ansible-galaxy collection install amazon.aws
- yum install python3-pip -y
- pip3 install boto3 botocore

```
[root@ip-172-31-5-223 playbooks]# vi ec2.yml
[root@ip-172-31-5-223 playbooks]# ansible-galaxy collection install amazon.aws
```

```
[root@ip-172-31-5-223 playbooks]# yum install python3-pip -y
Last metadata expiration check: 0:11:09 ago on Thu Dec  4 12:31:47 2025.
Dependencies resolved.
================================================================================
 Package                    Architecture        Version
================================================================================
Installing:
 python3-pip                noarch              21.3.1-2.amzn2023.0.14
Installing weak dependencies:
 libxcrypt-compat           x86_64              4.4.33-7.amzn2023

Transaction Summary
================================================================================
Install  2 Packages

Total download size: 1.9 M
Installed size: 11 M
Downloading Packages:
(1/2): libxcrypt-compat-4.4.33-7.amzn2023.x86_64.rpm
(2/2): python3-pip-21.3.1-2.amzn2023.0.14.noarch.rpm
```

```
[root@ip-172-31-5-223 playbooks]# pip3 install boto3 botocore
Collecting boto3
  Downloading boto3-1.42.2-py3-none-any.whl (140 kB)
     |                                | 140 kB 15.3 MB/s
Collecting botocore
  Downloading botocore-1.42.2-py3-none-any.whl (14.5 MB)
     |                                | 14.5 MB 31.4 MB/s
Collecting s3transfer<0.17.0,>=0.16.0
  Downloading s3transfer-0.16.0-py3-none-any.whl (86 kB)
     |                                | 86 kB 10.7 MB/s
Requirement already satisfied: jmespath<2.0.0,>=0.7.1 in /usr/lib/p
Requirement already satisfied: urllib3<1.27,>=1.25.4 in /usr/lib/py
Requirement already satisfied: python-dateutil<3.0.0,>=2.1 in /usr/
Requirement already satisfied: six>=1.5 in /usr/lib/python3.9/site-
e) (1.15.0)
Installing collected packages: botocore, s3transfer, boto3
Successfully installed boto3-1.42.2 botocore-1.42.2 s3transfer-0.16
```

- aws configure

```
[root@ip-172-31-5-223 playbooks]# aws configure
AWS Access Key ID [None]: AKIATNTADWLTR47S7YQC
AWS Secret Access Key [None]: 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
Default region name [None]: us-east-1
Default output format [None]: json
```

In the ec2.yml write this playbook.

```
---
- name: Create a sandbox instance
  hosts: localhost
  connection: local
  gather_facts: no

  vars:
    ansible_python_interpreter: /usr/bin/python3
    instance_type: t3.micro
    image: ami-0fa3fe0fa7920f68e
    region: us-east-1
    subnet: subnet-0a192382de0e2bf6a

  tasks:
    - name: Launch EC2 instance
      amazon.aws.ec2_instance:
        name: simple-ec2
        instance_type: "{{ instance_type }}"
        image_id: "{{ image }}"
        wait: yes
        region: "{{ region }}"
```

vpc_subnet_id: "{{ subnet }}"

network:

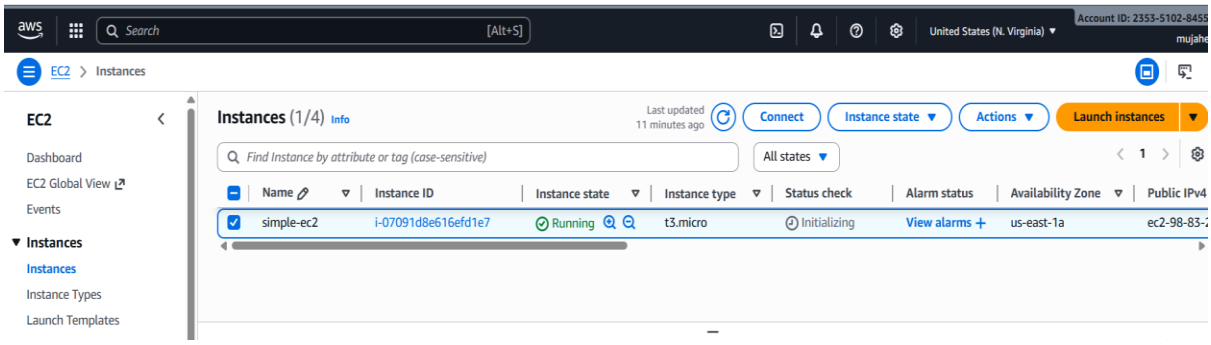
assign_public_ip: true

```
---
- name: Create a sandbox instance
  hosts: localhost
  connection: local
  gather_facts: no

  vars:
    ansible_python_interpreter: /usr/bin/python3
    instance_type: t3.micro
    image: ami-0fa3fe0fa7920f68e
    region: us-east-1
    subnet: subnet-0a192382de0e2bf6a

  tasks:
    - name: Launch EC2 instance
      amazon.aws.ec2_instance:
        name: simple-ec2
        instance_type: "{{ instance_type }}"
        image_id: "{{ image }}"
        wait: yes
        region: "{{ region }}"
        vpc_subnet_id: "{{ subnet }}"
        network:
          assign_public_ip: true
```

- ansible-playbook ec2.yml

```
[root@ip-172-31-5-223 playbooks]# ansible-playbook ec2.yml

PLAY [Create a sandbox instance] ***********************************************

TASK [Launch EC2 instance] *****************************************************
changed: [localhost]

PLAY RECAP *********************************************************************
localhost                  : ok=1    changed=1    unreachable=0    failed=0    s
```

An instance has been created.



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

In server-01 I have test file in tmp directory.

```
[root@ip-172-31-102-211 tmp]# ls
systemd-private-29b86571872841fd80d03b4e1763df68-chronyd.service-d2nFdf  systemd-private-29b865
systemd-private-29b86571872841fd80d03b4e1763df68-dbus-broker.service-34bkpc  systemd-private-29b865
systemd-private-29b86571872841fd80d03b4e1763df68-policy-routes@ens5.service-hq4uc1  test.txt
[root@ip-172-31-102-211 tmp]#
```

Create a playbook named as copy.yml and give the script.

```
---
- name: Fetch file from worker-01
  hosts: worker-01
  become: yes

  tasks:
    - name: Fetch /tmp/test.txt from worker-01
      fetch:
        src: /tmp/test.txt
```

dest: /tmp/test.txt

flat: yes

- name: Copy file to worker-02

hosts: worker-02

become: yes

tasks:

- name: Copy /tmp/test.txt to worker-02

copy:

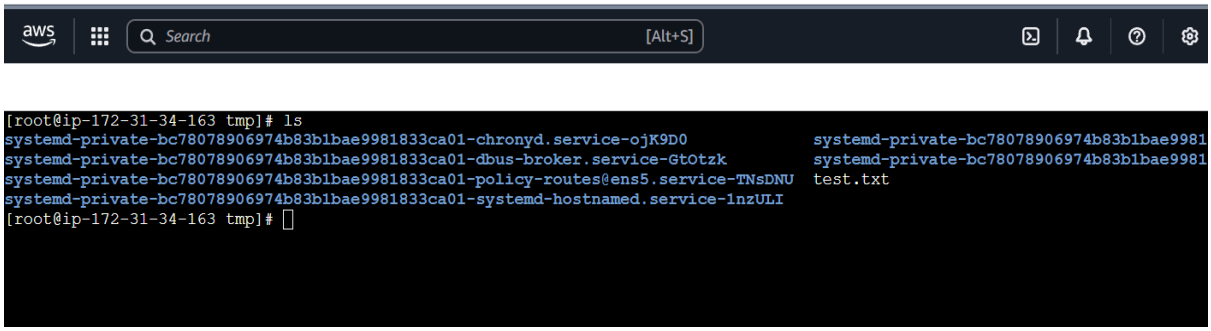
src: /tmp/test.txt

dest: /tmp/test.txt

- ansible-docker copy.yml

```
[root@ip-172-31-5-223 playbooks]# ansible-playbook copy.yml
[WARNING]: Invalid characters were found in group names but not replaced, use -v

PLAY [Fetch file from worker01] ************************************************

TASK [Gathering Facts] *********************************************************
[WARNING]: Platform linux on host 172.31.102.211 is using the discovered Python
but future installation of another Python interpreter could change the meaning o
https://docs.ansible.com/ansible-core/2.15/reference_appendices/interpreter_disc
ok: [172.31.102.211]

TASK [Fetch /tmp/test.txt from worker-01] **************************************
changed: [172.31.102.211]

PLAY [Copy file to worker-02] **************************************************

TASK [Gathering Facts] *********************************************************
[WARNING]: Platform linux on host 172.31.34.163 is using the discovered Python t
future installation of another Python interpreter could change the meaning of th
https://docs.ansible.com/ansible-core/2.15/reference_appendices/interpreter_disc
ok: [172.31.34.163]

TASK [Copy /tmp/test.txt to worker-02] *****************************************
changed: [172.31.34.163]

PLAY RECAP *********************************************************************
172.31.102.211             : ok=2    changed=1    unreachable=0    failed=0    s
172.31.34.163              : ok=2    changed=1    unreachable=0    failed=0    s
```

It will copied to worker-02 /tmp directory.



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

Create a playbook named as createfiles.yml and add this script.

```
---
- name: Create multiple files using a loop
  hosts: all
  become: yes

  vars:
    files_list:
      - /tmp/file1.txt
      - /tmp/file2.log
      - /tmp/report.json
```

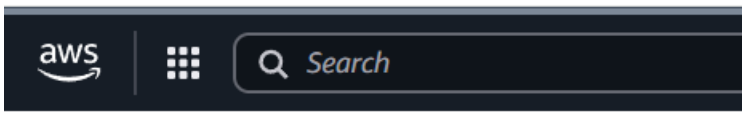
```
tasks:
  - name: Create files with different names
    file:
      path: "{{ item }}"
      state: touch
    loop: "{{ files_list }}"
```

- ansible-playbook createfiles.yml

```
[root@ip-172-31-5-223 playbooks]# ansible-playbook createfiles.yml
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see

PLAY [Create multiple files using a loop] **************************************************

TASK [Gathering Facts] *********************************************************************
[WARNING]: Platform linux on host 172.31.34.163 is using the discovered Python interpreter
future installation of another Python interpreter could change the meaning of that path. Se
https://docs.ansible.com/ansible-core/2.15/reference_appendices/interpreter_discovery.html
ok: [172.31.34.163]
[WARNING]: Platform linux on host 172.31.102.211 is using the discovered Python interpreter
but future installation of another Python interpreter could change the meaning of that path
https://docs.ansible.com/ansible-core/2.15/reference_appendices/interpreter_discovery.html
ok: [172.31.102.211]

TASK [Create files with different names] ***************************************************
changed: [172.31.34.163] => (item=/tmp/file1.txt)
changed: [172.31.102.211] => (item=/tmp/file1.txt)
changed: [172.31.34.163] => (item=/tmp/file2.log)
changed: [172.31.102.211] => (item=/tmp/file2.log)
changed: [172.31.34.163] => (item=/tmp/report.json)
changed: [172.31.102.211] => (item=/tmp/report.json)

PLAY RECAP *********************************************************************************
172.31.102.211             : ok=2    changed=1    unreachable=0    failed=0    skipped=0
172.31.34.163              : ok=2    changed=1    unreachable=0    failed=0    skipped=0
```

Files has been created with different names.


```
[root@ip-172-31-34-163 tmp]# ls
file1.txt
file2.log
report.json
```




```
[root@ip-172-31-102-211 tmp]# ls
file1.txt
file2.log
report.json
```