1. Watch ansible-01 video and write down notes.

2. Setup one master and two worker nodes in ansible.

Launch 3 ec2-instances in ec2.

Give the names as master, worker-01, worker-02.

Login into your controller server use root for 3 servers.

```
[root@ip-172-31-59-49 ~]# python3 --version
Python 3.9.24
[root@ip-172-31-59-49 ~]#
```

- yum install ansible -y

```
[root@ip-172-31-59-49 ~]# yum install ansible -y
Amazon Linux 2023 Kernel Livepatch repository
Dependencies resolved.
================================================================
 Package                        Architecture          Versi
================================================================
Installing:
 ansible                        noarch                8.3.0
Installing dependencies:
 ansible-core                   x86_64                2.15.
 git-core                       x86_64                2.50.
 sshpass                        x86_64                1.09-

Transaction Summary
================================================================
Install  4 Packages

Total download size: 40 M
Installed size: 552 M
Downloading Packages:
(1/4): ansible-core 2 15 3 1 amzn2023 0 11 x86 64 rpm
```

Go to /etc/ansible an change the hosts file.

- cd /etc/ansible
- vi hosts

```
[all]
172.31.101.60
172.31.119.28
```

Do the ssh-key gen and copy the public key in both the servers.
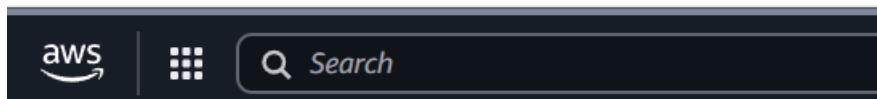
In main server do the

- ssh-keygen
- copy this /root/.ssh/id_rsa.pub
- cat /root/.ssh/id_rsa.pub
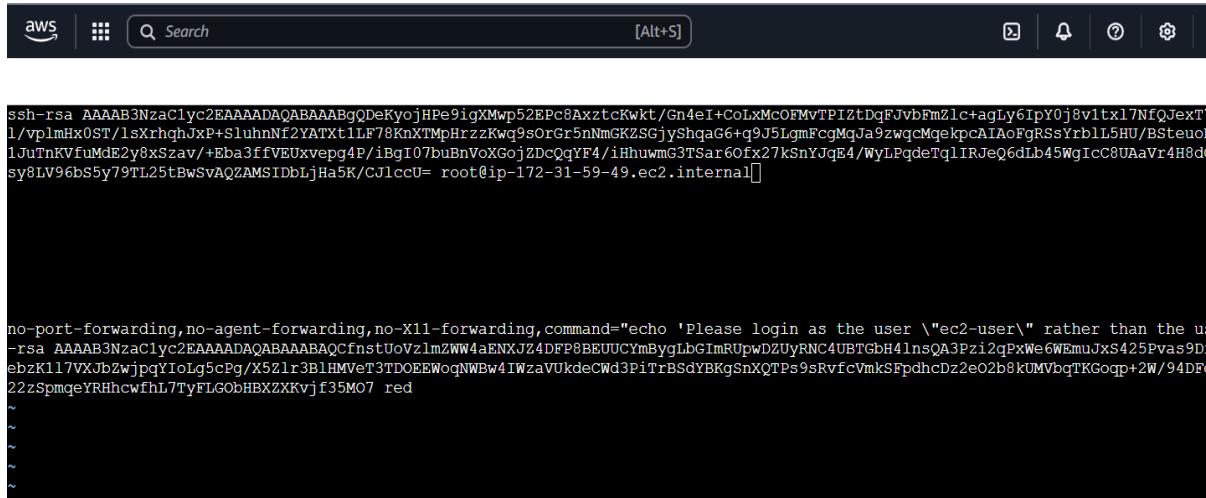
```
[root@ip-172-31-59-49 ansible]# ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/root/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /root/.ssh/id_rsa
Your public key has been saved in /root/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:0WXnPoQ+eQiCgQNsEQqHM4pyBXuLd2cv8oyweuuF7JA root@ip-172-31-59-49.ec2.internal
The key's randomart image is:
+---[RSA 3072]----+
|.o*= ..     o .  |
|=oo.+  o . o +   |
|++.....o o . o   |
|+ .o .   o o =   |
|... o . S   = +  |
|   + o o .   o . |
|   E + o . .     |
|    o.+ = .      |
|    .+=.. o      |
+----[SHA256]-----+
[root@ip-172-31-59-49 ansible]# cat /root/.ssh/id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABgQDeKyojHPe9igXMwp52EPc8AxztcKwkt/Gn4eI+CoLxMcOFMvTPIX
T7FckI6fZ6fAcmm04qTEV1Ib9RrF3ypY+ffznm6LN9ol/vplmHx0ST/lsXrhqhJxP+SluhnNf2YATXt1LF78KnXTM
gmFcgMqJa9zwqcMqekpcAIAoFgRSsYrblL5HU/BSteuoRqqzK9dn/SGO7+FCEPSFFPbtuMOvYq3fhK6a6Kd2qE1Ju
BgIO7buBnVoXGojZDcQqYF4/iHhuwmG3TSar6Ofx27kSnYJqE4/WyLPqdeTqlIRJeQ6dLb45WgIcC8UAaVr4H8dCC
pkSsy8LV96bS5y79TL25tBwSvAQZAMSIDbLjHa5K/CJlccU= root@ip-172-31-59-49.ec2.internal
[root@ip-172-31-59-49 ansible]#
```

Copy the key and login to worker-01 server, go to .ssh directory and make the paste the copied key in authorized files

- cd .ssh
- vi authorized_keys


```
[root@ip-172-31-101-60 ~]# cd .ssh
[root@ip-172-31-101-60 .ssh]# ls
authorized_keys
[root@ip-172-31-101-60 .ssh]# vi authorized_keys
[root@ip-172-31-101-60 .ssh]# []
```
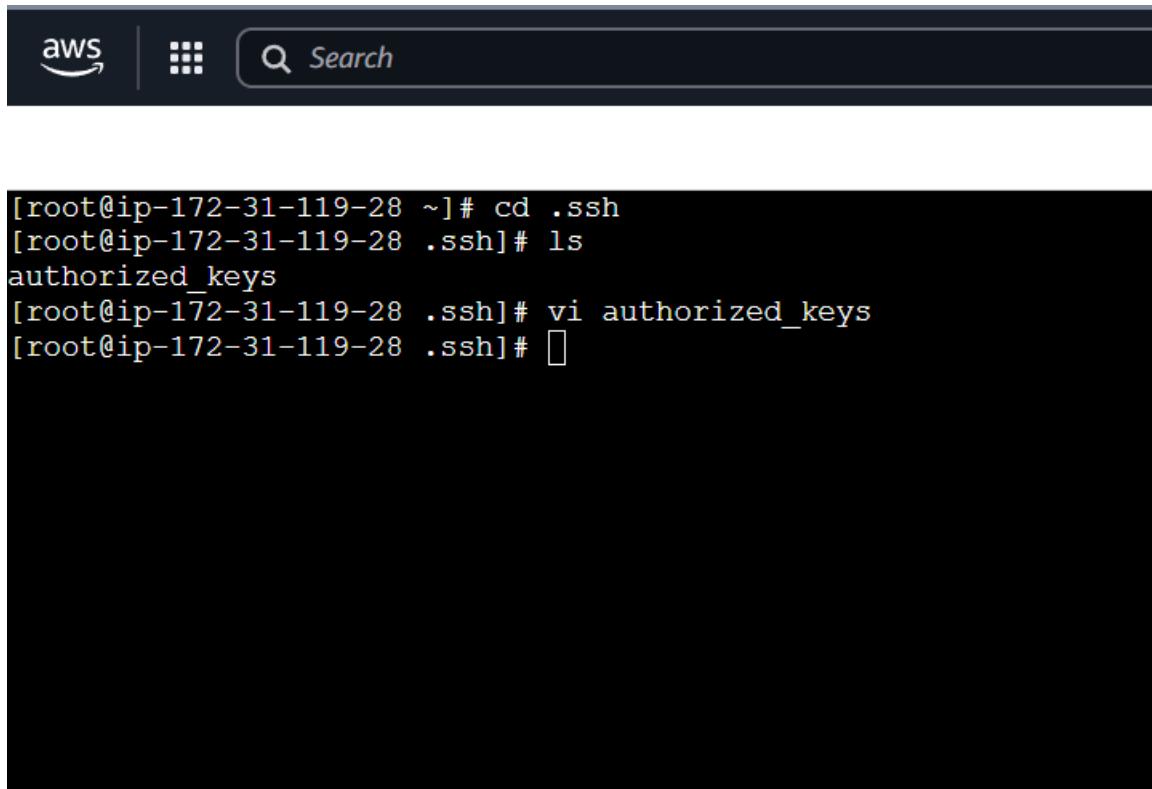
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABgQDeKyojHPe9igXMwp52EPc8AxztcKwkt/Gn4eI+CoLxMcOFMvTPIZtDqFJvbFmZlc+agLy6IpY0j8v1txl7NfQJexT7
l/vplmHx0ST/lsXrhqhJxP+SluhnNf2YATXt1LF78KnXTMpHrzzKwq9sOrGr5nNmGKZSGjyShqaG6+q9J5LgmFcgMqJa9zwqcMqekpcAIAoFgRSsYrblL5HU/BSteuoR
1JuTnKVfuMdE2y8xSzav/+Eba3ffVEUxvepg4P/iBgI07buBnVoXGojZDcQqYF4/iHhuwmG3TSar6Ofx27kSnYJqE4/WyLPqdeTqlIRJeQ6dLb45WgIcC8UAaVr4H8dC
sy8LV96bS5y79TL25tBwSvAQZAMSIDbLjHa5K/CJlccU= root@ip-172-31-59-49.ec2.internal
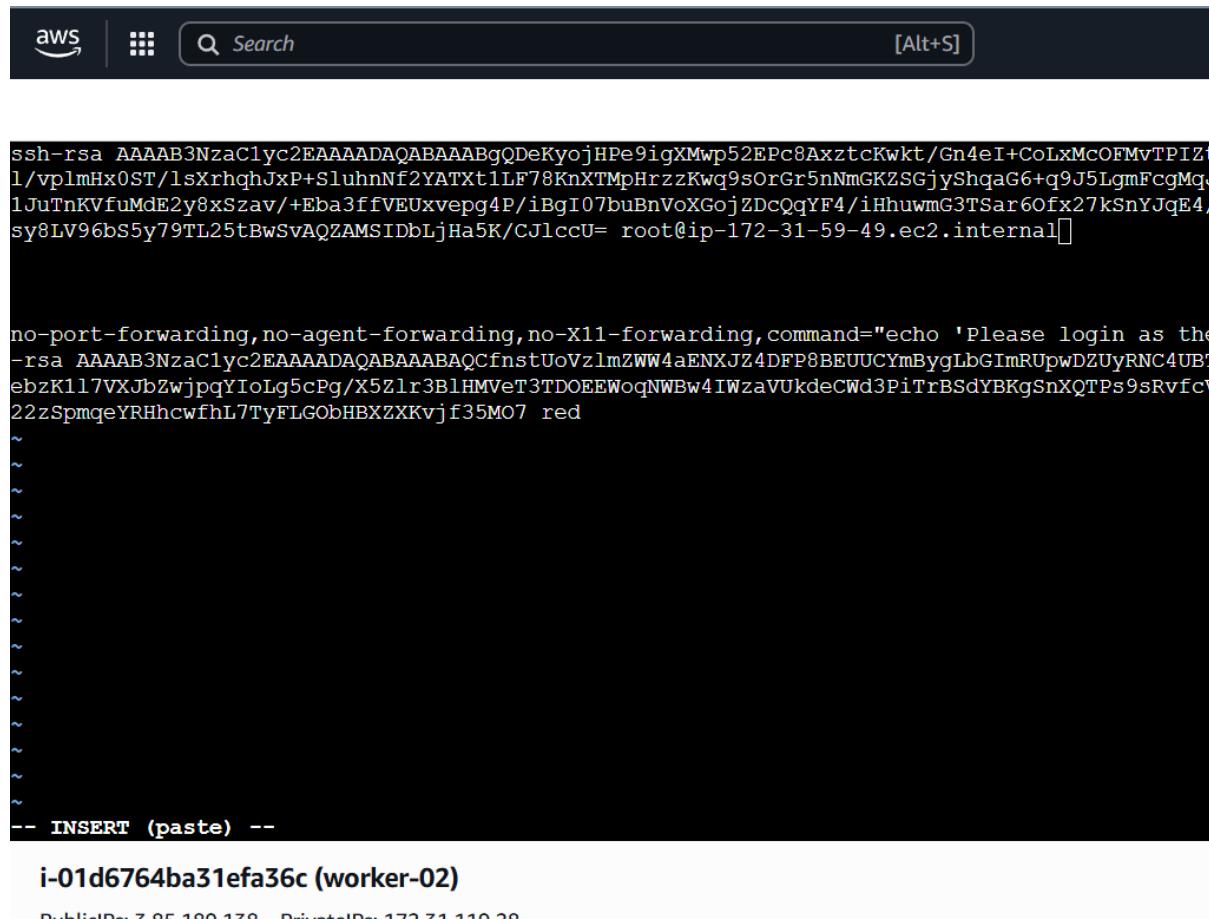
no-port-forwarding,no-agent-forwarding,no-X11-forwarding,command="echo 'Please login as the user \"ec2-user\" rather than the us
-rsa AAAAB3NzaC1yc2EAAAADAQABAAABAQCfnstUoVzlmZWW4aENXJZ4DFP8BEUUCYmBygLbGImRUpwDZUyRNC4UBTGbH4lnsQA3Pzi2qPxWe6WEmuJxS425Pvas9Dr
ebzK1l7VXJbZwjpqYIoLg5cPg/X5Zlr3BlHMVeT3TDOEEWoqNWBw4IWzaVUkdeCWd3PiTrBSdYBKgSnXQTPs9sRvfcVmkSFpdhcDz2eO2b8kUMVbqTKGoqp+2W/94DFe
22zSpmqeYRHhcwfhL7TyFLGObHBXZXKvjf35MO7 red
~
~
~
~
~

Login to the worker-02 go to .ssh directory and make the paste the copied key in authorized files

- cd .ssh
- vi authorized_keys

```
[root@ip-172-31-119-28 ~]# cd .ssh
[root@ip-172-31-119-28 .ssh]# ls
authorized_keys
[root@ip-172-31-119-28 .ssh]# vi authorized_keys
[root@ip-172-31-119-28 .ssh]#
```

```
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABgQDeKyojHPe9igXMwp52EPc8AxztcKwkt/Gn4eI+CoLxMcOFMvTPIZt
l/vplmHx0ST/lsXrhqhJxP+SluhnNf2YATXt1LF78KnXTMpHrzzKwq9sOrGr5nNmGKZSGjyShqaG6+q9J5LgmFcgMqJ
1JuTnKVfuMdE2y8xSzav/+Eba3ffVEUxvepg4P/iBgI07buBnVoXGojZDcQqYF4/iHhuwmG3TSar6Ofx27kSnYJqE4/
sy8LV96bS5y79TL25tBwSvAQZAMSIDbLjHa5K/CJlccU= root@ip-172-31-59-49.ec2.internal

no-port-forwarding,no-agent-forwarding,no-X11-forwarding,command="echo 'Please login as the
-rsa AAAAB3NzaC1yc2EAAAADAQABAAABAQCfnstUoVzlmZWW4aENXJZ4DFP8BEUUCYmBygLbGImRUpwDZUyRNC4UBT
ebzK1l7VXJbZwjpqYIoLg5cPg/X5Zlr3BlHMVeT3TDOEEWoqNWBw4IWzaVUkdeCWd3PiTrBSdYBKgSnXQTPs9sRvfcV
22zSpmqeYRHhcwfhL7TyFLGObHBXZXKvjf35MO7 red
~
~
~
~
~
~
~
~
~
~
~
~
~
-- INSERT (paste) --
```

i-01d6764ba31efa36c (worker-02)

PublicIPs: 3.85.189.138   PrivateIPs: 172.31.119.28

Go to your main server

- ansible all -m ping

```
[root@ip-172-31-59-49 ansible]# ansible all -m ping
[WARNING]: Invalid characters were found in group names but not replaced, use -v
The authenticity of host '172.31.119.28 (172.31.119.28)' can't be established.
ED25519 key fingerprint is SHA256:Lfrw4ef1pRkFB9MPsMTadFBIuz754JEtEnjUQOhwqXg.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? [WARNING]:
the discovered Python interpreter at /usr/bin/python3.9, but future
installation of another Python interpreter could change the meaning of that path
core/2.15/reference_appendices/interpreter_discovery.html for more information.
172.31.101.60 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3.9"
    },
    "changed": false,
    "ping": "pong"
}
yes
[WARNING]: Platform linux on host 172.31.119.28 is using the discovered Python
installation of another Python interpreter could change the meaning of that path
core/2.15/reference_appendices/interpreter_discovery.html for more information.
172.31.119.28 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3.9"
    },
    "changed": false,
    "ping": "pong"
}
[root@ip-172-31-59-49 ansible]#
```

3. Execute the adhoc command shared in #dvps-cloud-documents-12 Channel.

- ansible all -m ping

```
[root@ip-172-31-59-49 ~]# ansible all -m ping
[WARNING]: Invalid characters were found in group names but not replac
[WARNING]: Platform linux on host 172.31.101.60 is using the discovere
installation of another Python interpreter could change the meaning of
core/2.15/reference_appendices/interpreter_discovery.html for more inf
172.31.101.60 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3.9"
    },
    "changed": false,
    "ping": "pong"
}
[WARNING]: Platform linux on host 172.31.119.28 is using the discovere
installation of another Python interpreter could change the meaning of
core/2.15/reference_appendices/interpreter_discovery.html for more inf
172.31.119.28 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3.9"
    },
    "changed": false,
    "ping": "pong"
}
[root@ip-172-31-59-49 ~]#
```

- ansible all -m setup

```
[root@ip-172-31-59-49 ~]# ansible all -m setup
[WARNING]: Invalid characters were found in group names but not replaced,
[WARNING]: Platform linux on host 172.31.119.28 is using the discovered Py
installation of another Python interpreter could change the meaning of tha
core/2.15/reference_appendices/interpreter_discovery.html for more informa
172.31.119.28 | SUCCESS => {
    "ansible_facts": {
        "ansible_all_ipv4_addresses": [
            "172.31.119.28"
        ],
        "ansible_all_ipv6_addresses": [
            "fe80::ca5:3cff:fe72:9711"
        ],
        "ansible_apparmor": {
            "status": "disabled"
        },
        "ansible_architecture": "x86_64",
        "ansible_bios_date": "10/16/2017",
        "ansible_bios_vendor": "Amazon EC2",
        "ansible_bios_version": "1.0",
        "ansible_board_asset_tag": "i-01d6764ba31efa36c",
        "ansible_board_name": "NA",
        "ansible_board_serial": "NA",
        "ansible_board_vendor": "Amazon EC2",
        "ansible_board_version": "NA",
        "ansible_chassis_asset_tag": "Amazon EC2",
        "ansible_chassis_serial": "NA",
        "ansible_chassis_vendor": "Amazon EC2",
```

- ansible all -a uptime

```
[root@ip-172-31-59-49 ~]# ansible all -a uptime
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to se
[WARNING]: Platform linux on host 172.31.119.28 is using the discovered Python interprete
installation of another Python interpreter could change the meaning of that path. See htt
core/2.15/reference_appendices/interpreter_discovery.html for more information.
172.31.119.28 | CHANGED | rc=0 >>
 12:30:45 up 40 min,  3 users,  load average: 0.17, 0.04, 0.01
[WARNING]: Platform linux on host 172.31.101.60 is using the discovered Python interprete
installation of another Python interpreter could change the meaning of that path. See htt
core/2.15/reference_appendices/interpreter_discovery.html for more information.
172.31.101.60 | CHANGED | rc=0 >>
 12:30:45 up 40 min,  3 users,  load average: 0.33, 0.07, 0.02
[root@ip-172-31-59-49 ~]#
```

- ansible all -a free -m

```
[root@ip-172-31-59-49 ~]# ansible all -a "free -m"
[WARNING]: Invalid characters were found in group names but not replaced, use -vvv
[WARNING]: Platform linux on host 172.31.119.28 is using the discovered Python int
installation of another Python interpreter could change the meaning of that path.
core/2.15/reference_appendices/interpreter_discovery.html for more information.
172.31.119.28 | CHANGED | rc=0 >>
               total        used        free      shared  buff/cache   available
Mem:             904         186         497           0         221         589
Swap:              0           0           0
[WARNING]: Platform linux on host 172.31.101.60 is using the discovered Python int
installation of another Python interpreter could change the meaning of that path.
core/2.15/reference_appendices/interpreter_discovery.html for more information.
172.31.101.60 | CHANGED | rc=0 >>
               total        used        free      shared  buff/cache   available
Mem:             904         183         499           0         221         591
Swap:              0           0           0
[root@ip-172-31-59-49 ~]#
```

- ansible all -m yum -a name=httpd state=installed

it will install httpd in both the servers.

```
[root@ip-172-31-59-49 ~]# ansible all -m yum -a "name=httpd state=installed"
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see de
[WARNING]: Platform linux on host 172.31.119.28 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.
172.31.119.28 | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3.9"
    },
    "changed": true,
    "msg": "",
    "rc": 0,
    "results": [
        "Installed: apr-util-1.6.3-1.amzn2023.0.2.x86_64",
        "Installed: mod_http2-2.0.27-1.amzn2023.0.3.x86_64",
        "Installed: httpd-filesystem-2.4.65-1.amzn2023.0.2.noarch",
        "Installed: httpd-2.4.65-1.amzn2023.0.2.x86_64",
        "Installed: apr-util-lmdb-1.6.3-1.amzn2023.0.2.x86_64",
        "Installed: mailcap-2.1.49-3.amzn2023.0.3.noarch",
        "Installed: generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch",
        "Installed: httpd-core-2.4.65-1.amzn2023.0.2.x86_64",
        "Installed: apr-util-openssl-1.6.3-1.amzn2023.0.2.x86_64",
        "Installed: libbrotli-1.0.9-4.amzn2023.0.2.x86_64",
        "Installed: mod_lua-2.4.65-1.amzn2023.0.2.x86_64",
        "Installed: httpd-tools-2.4.65-1.amzn2023.0.2.x86_64",
        "Installed: apr-1.7.5-1.amzn2023.0.4.x86_64"
    ]
}
[WARNING]: Platform linux on host 172.31.101.60 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.
172.31.101.60 | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3.9"
    },
```

- ansible all -m service -a name=httpd state=started enabled=yes

```
[root@ip-172-31-59-49 ~]# ansible all -m service -a "name=httpd state=started enabled=yes"
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see details
[WARNING]: Platform linux on host 172.31.101.60 is using the discovered Python interpreter at /usr/
installation of another Python interpreter could change the meaning of that path. See https://docs
core/2.15/reference_appendices/interpreter_discovery.html for more information.
172.31.101.60 | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3.9"
    },
    "changed": true,
    "enabled": true,
    "name": "httpd",
    "state": "started",
    "status": {
        "AccessSELinuxContext": "system_u:object_r:httpd_unit_file_t:s0",
        "ActiveEnterTimestampMonotonic": "0",
        "ActiveExitTimestampMonotonic": "0",
        "ActiveState": "inactive",
        "After": "systemd-journald.socket -.mount basic.target systemd-tmpfiles-setup.service tmp.r
slice httpd-init.service nss-lookup.target remote-fs.target network.target",
        "AllowIsolate": "no",
        "AssertResult": "no",
        "AssertTimestampMonotonic": "0",
        "Before": "shutdown.target",
        "BlockIOAccounting": "no",
        "BlockIOWeight": "[not set]",
        "CPUAccounting": "yes",
        "CPUAffinityFromNUMA": "no",
```
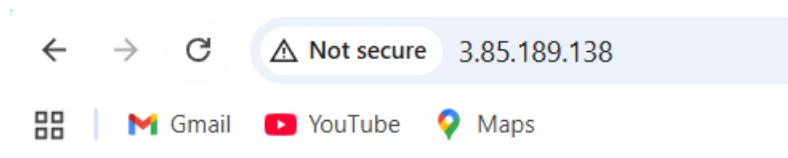
```
        "UtmpMode": "init",
        "Wants": "tmp.mount httpd-init.service",
        "WatchdogSignal": "6",
        "WatchdogTimestampMonotonic": "0",
        "WatchdogUSec": "infinity"
    }
}
[WARNING]: Platform linux on host 172.31.119.28 is using the discovered Python interprete
installation of another Python interpreter could change the meaning of that path. See htt
core/2.15/reference_appendices/interpreter_discovery.html for more information.
172.31.119.28 | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3.9"
    },
    "changed": true,
    "enabled": true,
    "name": "httpd",
    "state": "started",
    "status": {
        "AccessSELinuxContext": "system_u:object_r:httpd_unit_file_t:s0",
        "ActiveEnterTimestampMonotonic": "0",
        "ActiveExitTimestampMonotonic": "0",
        "ActiveState": "inactive",
        "After": "network.target httpd-init.service system.slice systemd-journald.socket
ervice sysinit.target remote-fs.target tmp.mount -.mount nss-lookup.target",
        "AllowIsolate": "no",
        "AssertResult": "no",
        "AssertTimestampMonotonic": "0",
        "Before": "shutdown.target",
```

If you copy the public_ip's of both the work servers and check with port number 80 httpd will be working.

- ansible all -m service -a name=httpd state=stopped enabled=yes

```
[root@ip-172-31-59-49 ~]# ansible all -m service -a "name=httpd state=stopped enabled=yes"
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see de
[WARNING]: Platform linux on host 172.31.119.28 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.
172.31.119.28 | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3.9"
    },
    "changed": true,
    "enabled": true,
    "name": "httpd",
    "state": "stopped",
    "status": {
        "AccessSELinuxContext": "system_u:object_r:httpd_unit_file_t:s0",
        "ActiveEnterTimestamp": "Fri 2025-11-28 12:37:58 UTC",
        "ActiveEnterTimestampMonotonic": "2854205531",
        "ActiveExitTimestampMonotonic": "0",
        "ActiveState": "active",
        "After": "-.mount nss-lookup.target systemd-journald.socket remote-fs.target basic.ta
les-setup.service system.slice httpd-init.service sysinit.target tmp.mount",
        "AllowIsolate": "no",
        "AssertResult": "yes",
        "AssertTimestamp": "Fri 2025-11-28 12:37:58 UTC",
        "AssertTimestampMonotonic": "2854095878",
        "Before": "multi-user.target shutdown.target",
        "BlockIOAccounting": "no",
        "BlockIOWeight": "[not set]",
        "CPUAccounting": "yes",
        "CPUAffinityFromNUMA": "no",
```

```
        "UMask": "0022",
        "UnitFilePreset": "disabled",
        "UnitFileState": "enabled",
        "UtmpMode": "init",
        "WantedBy": "multi-user.target",
        "Wants": "httpd-init.service tmp.mount",
        "WatchdogSignal": "6",
        "WatchdogTimestampMonotonic": "0",
        "WatchdogUSec": "0"
    }
}
[WARNING]: Platform linux on host 172.31.101.60 is using the discovered Pyth
installation of another Python interpreter could change the meaning of that
core/2.15/reference_appendices/interpreter_discovery.html for more informat
172.31.101.60 | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3.9"
    },
    "changed": true,
    "enabled": true,
    "name": "httpd",
    "state": "stopped",
    "status": {
        "AccessSELinuxContext": "system_u:object_r:httpd_unit_file_t:s0",
        "ActiveEnterTimestamp": "Fri 2025-11-28 12:37:58 UTC",
        "ActiveEnterTimestampMonotonic": "2859256406",
        "ActiveExitTimestampMonotonic": "0",
        "ActiveState": "active",
        "After": "httpd-init.service remote-fs.target systemd-journald.socke
rvice network.target basic.target tmp.mount system.slice nss-lookup.target"
        "AllowIsolate": "no",
        "AssertResult": "yes",
        "AssertTimestamp": "Fri 2025-11-28 12:37:58 UTC",
        "AssertTimestampMonotonic": "2859176804",
        "Before": "shutdown.target multi-user.target",
        "BlockIOAccounting": "no",
```

- it will stop the service in both worker servers.