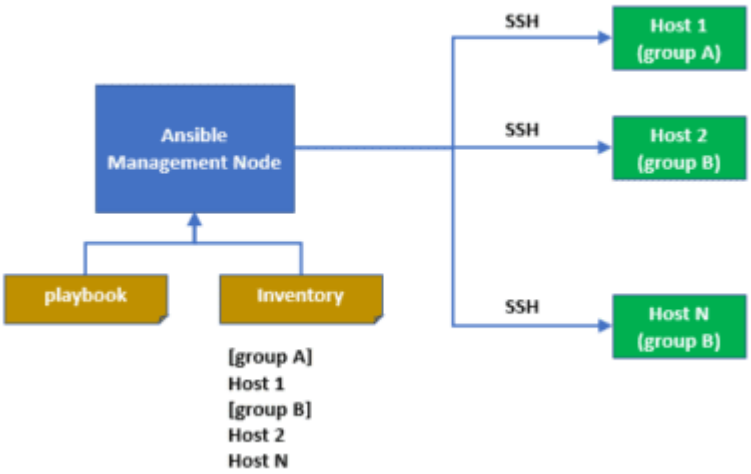
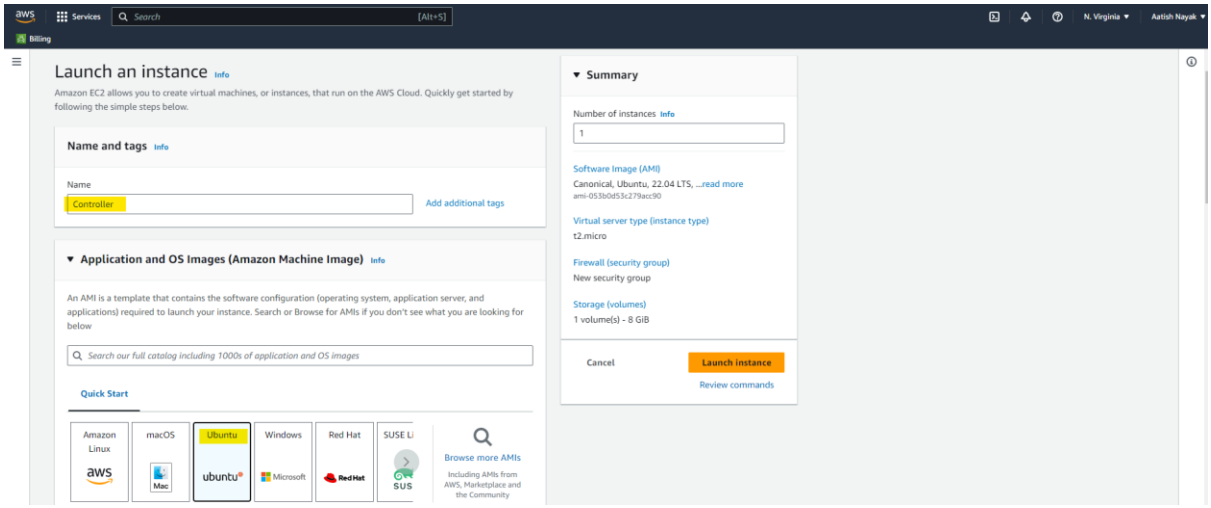
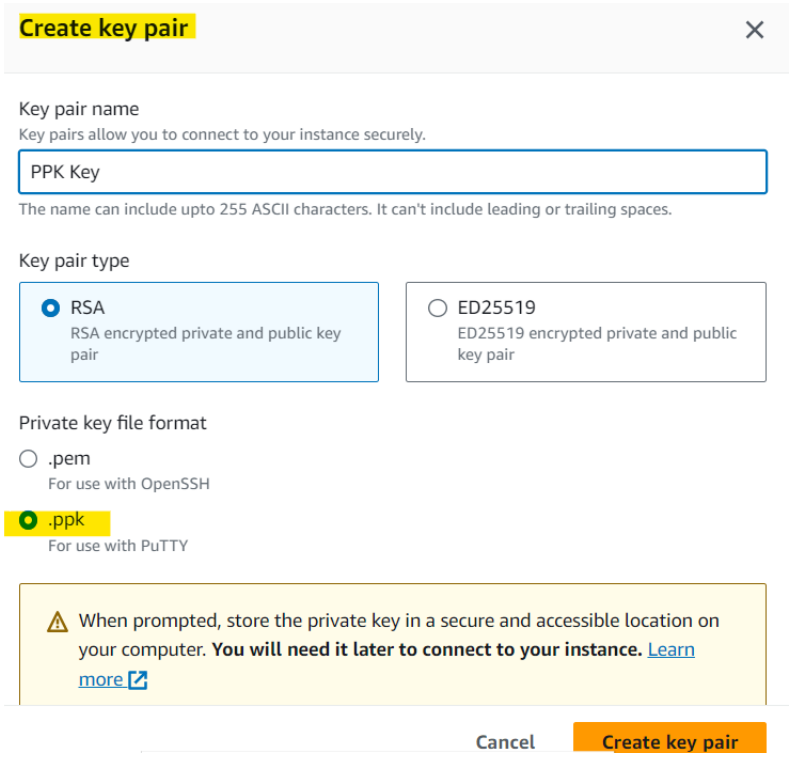
Ansible on AWS



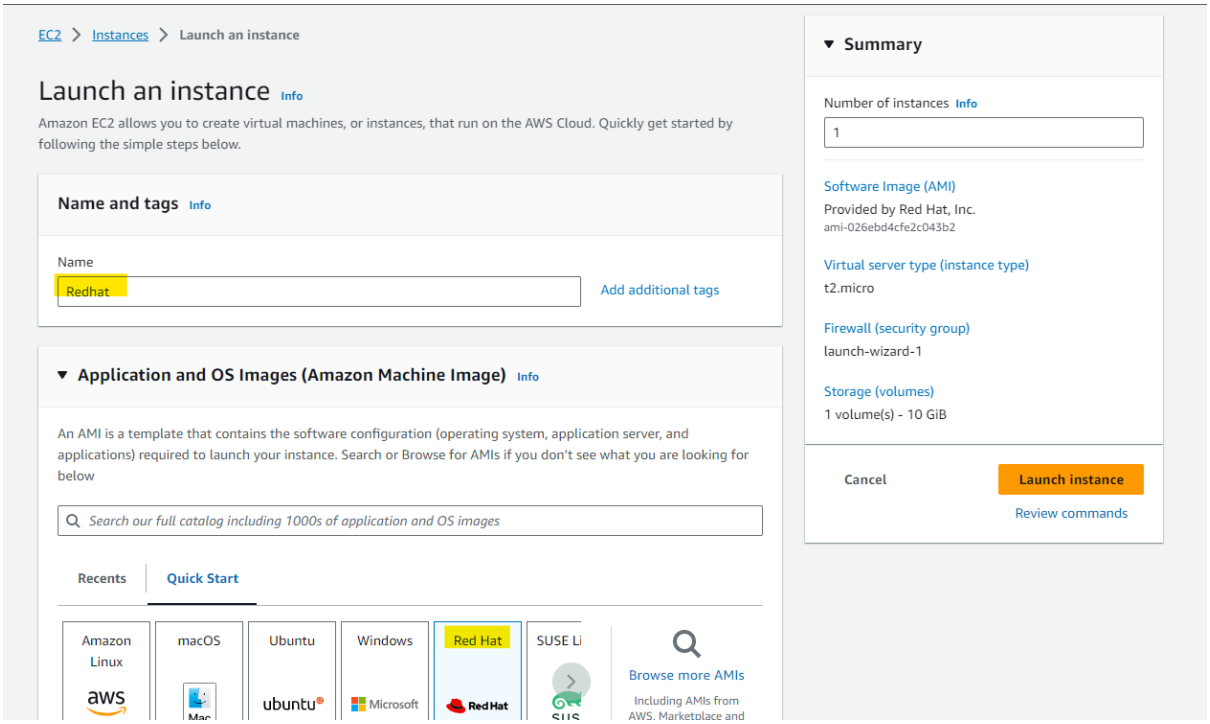
- **Create EC2 Named Controller**
- **Choice Ubuntu as an Operating System**



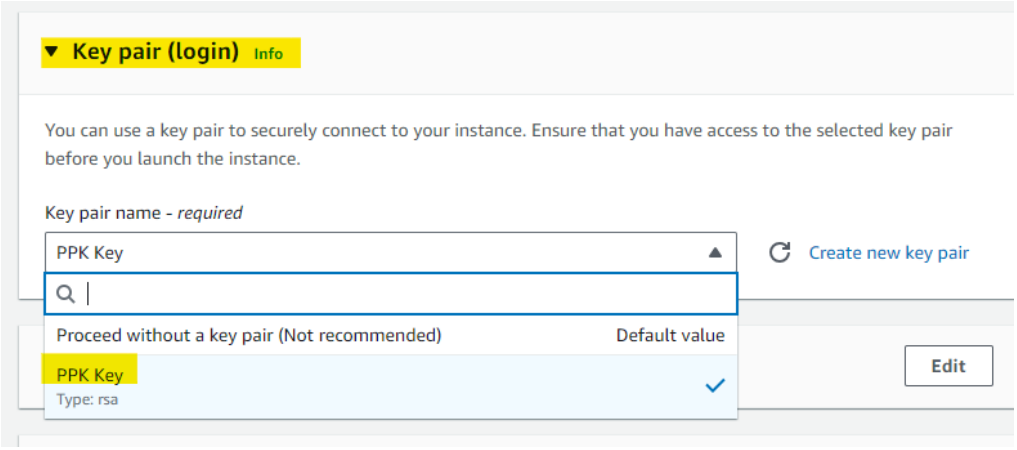
- **Create a ppk Key**
- **Review and Create the EC2 (controller)**

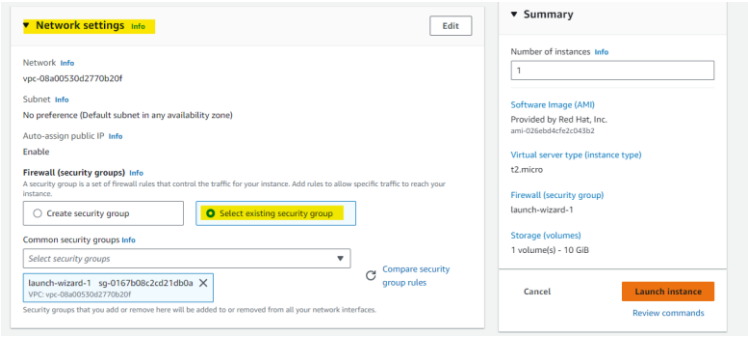


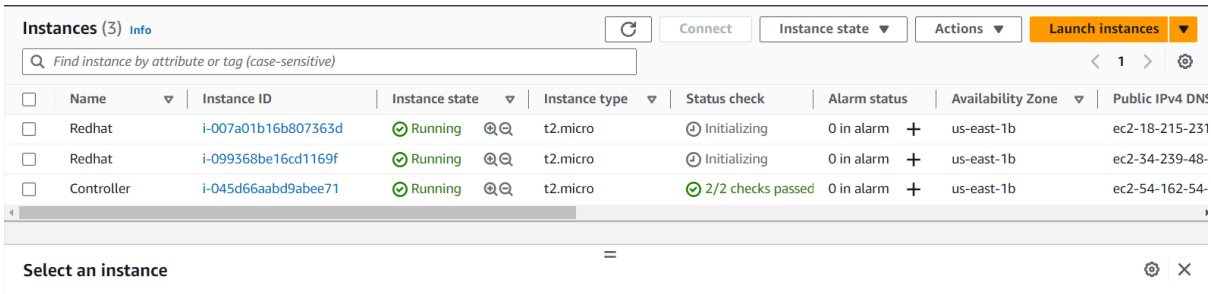
- **Create Two EC2 (worker)**
- **Choose RedHat as an Operating System**



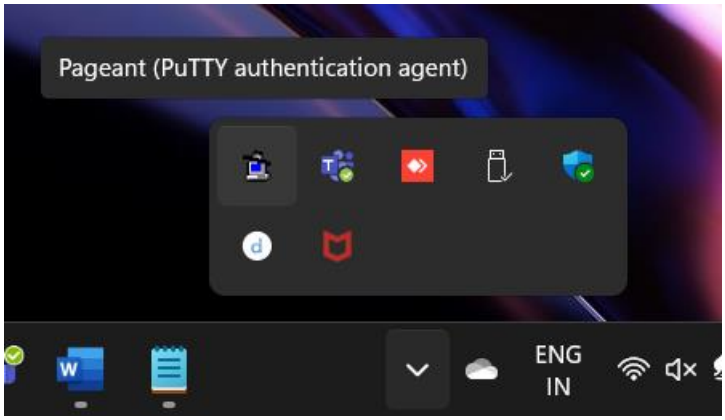
- **Select the same key for EC2 (Worker) and EC2 (controller)**
- **Select the Same SG for all instance**

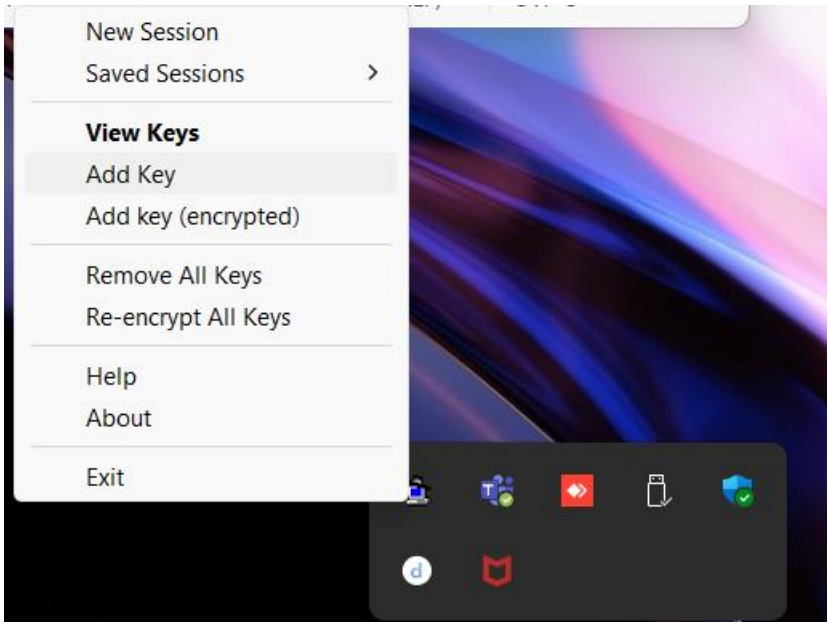


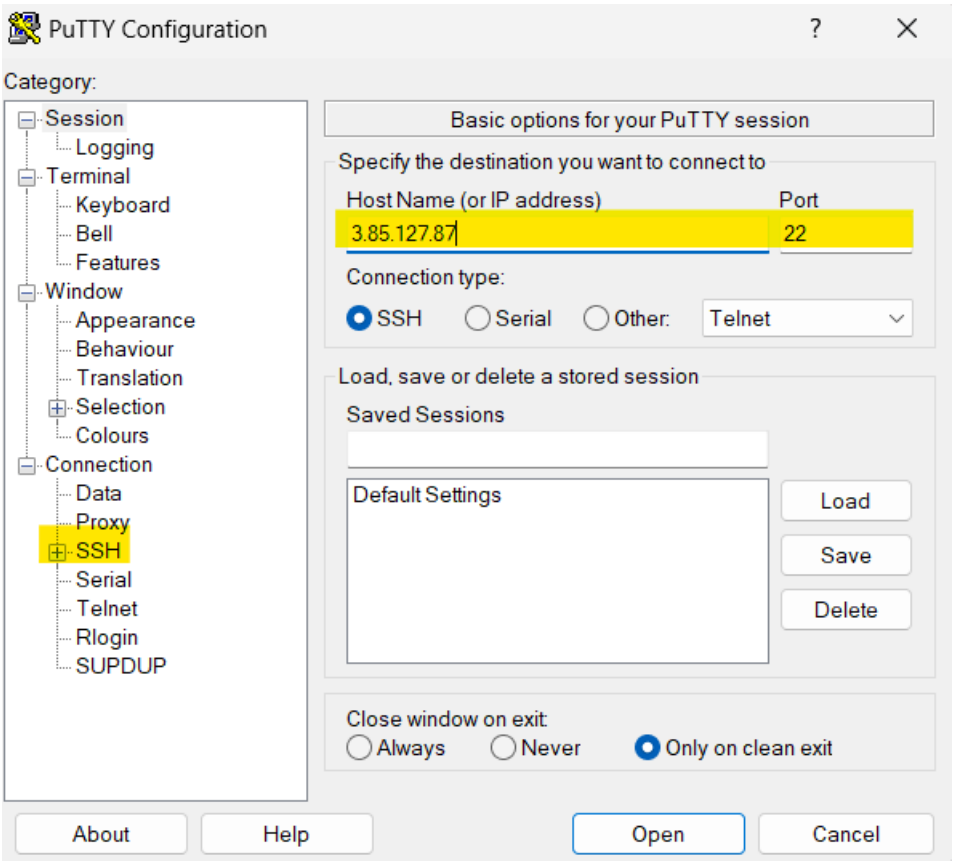




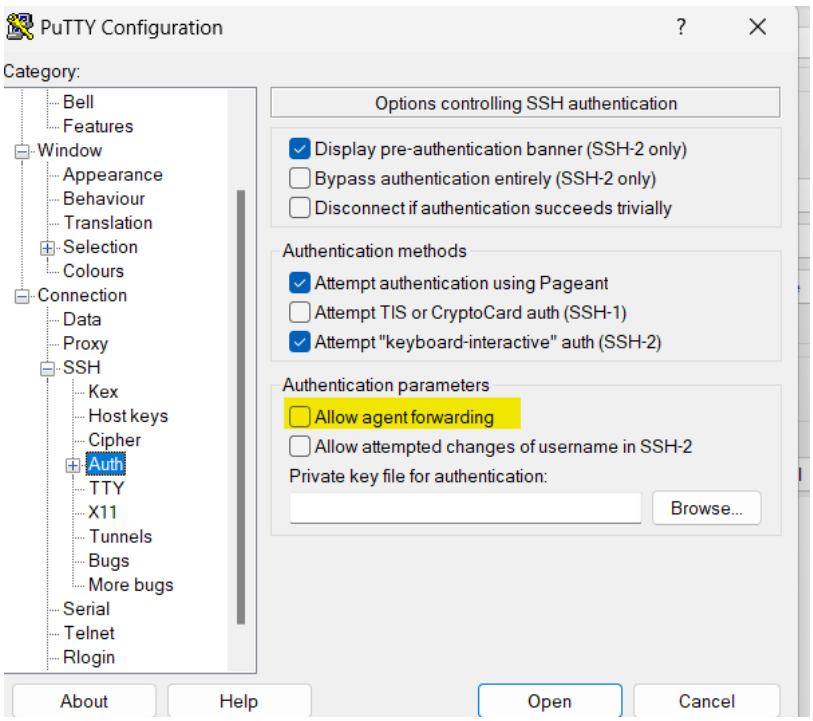
- **Download Putty Pageant (putty.org)**
- **Add ppk Key to Pageant**
- **Open Putty**
- **Connect to EC2 (Controller)**







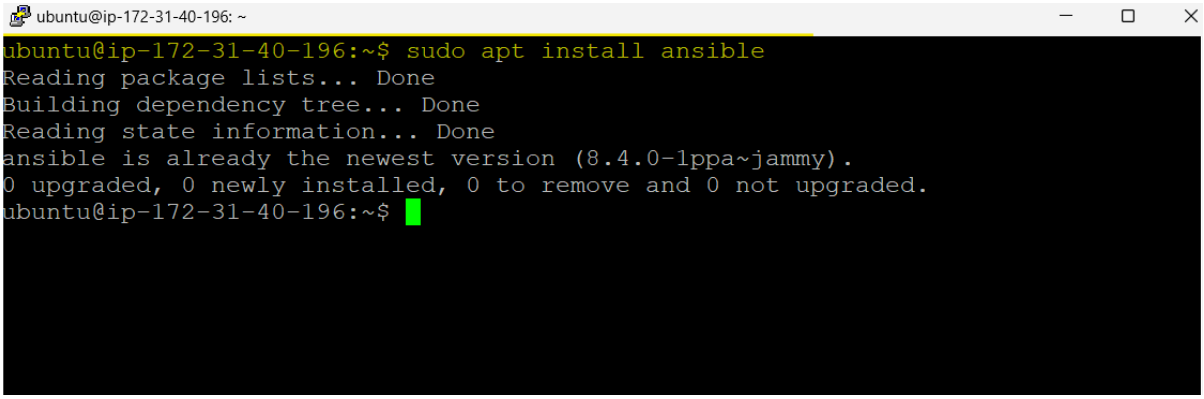
- **Login/Connect to Controller EC2 Instance**
- **Click on SSH**
- **Inside SSH click on Auth and allow Agent Forwarding**



- **Once Connected Install Ansible**
  https://www.digitalocean.com/community/tutorials/how-to-install-and-configure-ansible-on-ubuntu-22-04

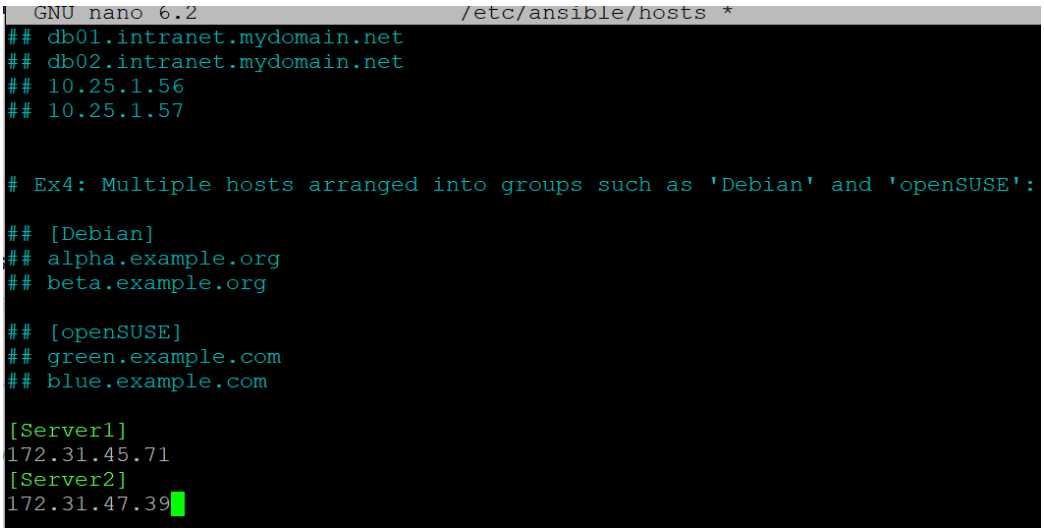
  Command to Install Ansible in ubuntu 22

- **sudo apt-add-repository ppa:ansible/ansible (This will create Repository for Ansible)**
- **sudo apt update (Updating the operating System)**
- **sudo apt install ansible (This will Install Ansible)**



Setting Up the Inventory File

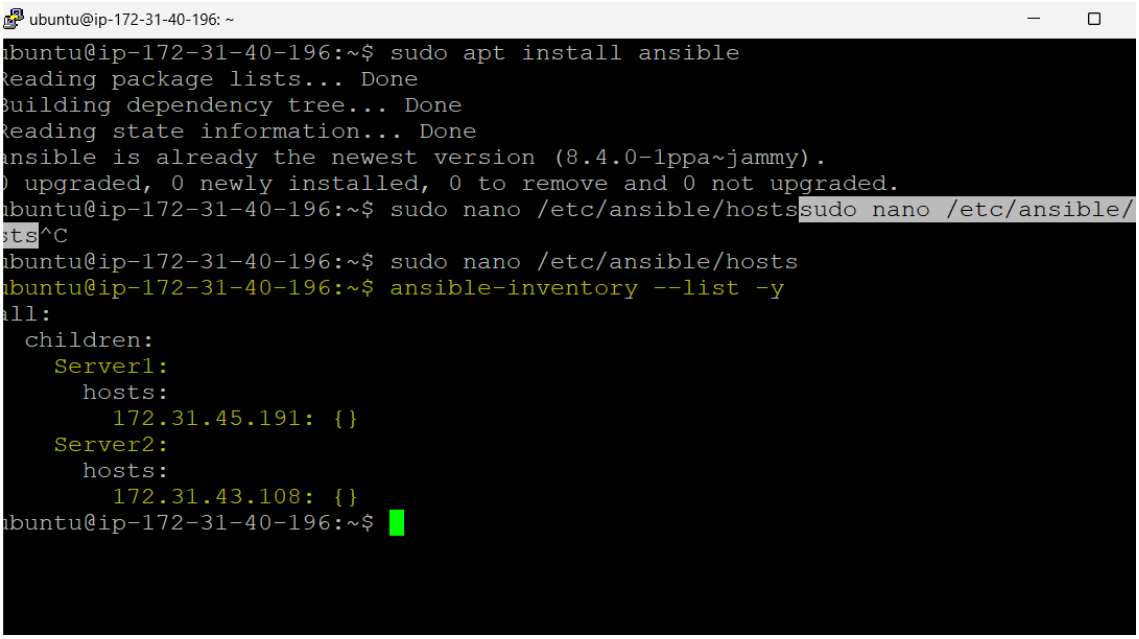
- **sudo nano /etc/ansible/hosts (This command Displays the Path of Inventory Files)**



- **List the Worker EC2 instance Private IP**
- **To save Ctrl X**
- **Y to save**

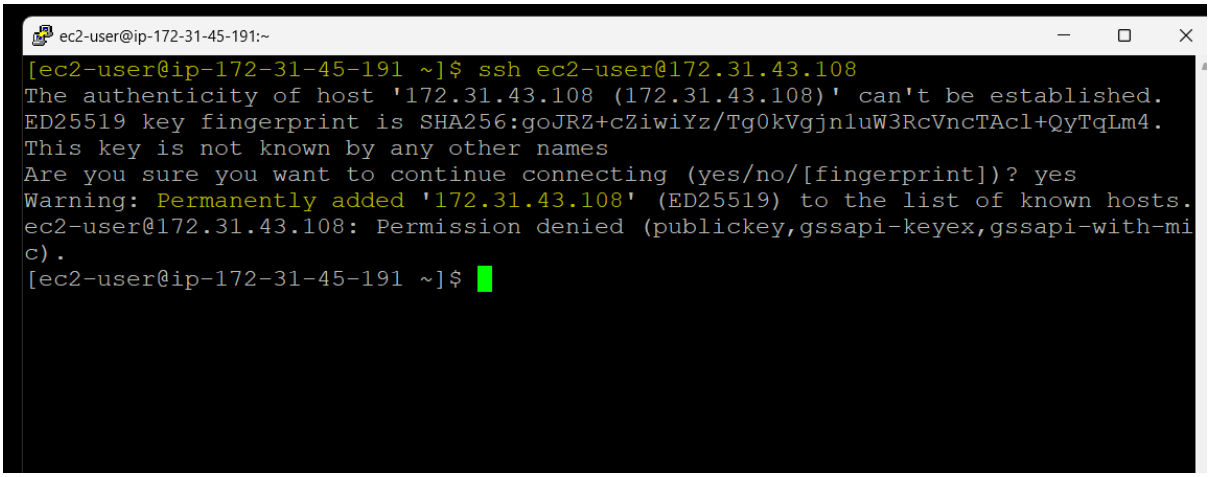
- **Next Click Enter**

- **Use the following command to list the inventory**
- **ansible-inventory --list -y**



Create Connections

- Use the following command to create connections
- **ssh ec2-user@privateip**



Testing Connection

- **Use the following command to test the connection Between Controller and Worker EC2 Instance**
- **ansible -m ping all - -user=ec2-user**

```
ubuntu@ip-172-31-40-196: ~
ubuntu@ip-172-31-40-196:~$ ansible -m ping all --user=ec2-user
172.31.43.108 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "ping": "pong"
}
172.31.45.191 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "ping": "pong"
}
ubuntu@ip-172-31-40-196:~$
```

Check the storage on the Worker Ec2 Instance

- **ansible -a “df -h” all - -user=ec2-user**

```
ubuntu@ip-172-31-40-196: ~
ubuntu@ip-172-31-40-196:~$ ansible -a "df -h" all --user=ec2-user
172.31.43.108 | CHANGED | rc=0 >>
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        4.0M     0  4.0M   0% /dev
tmpfs           385M     0  385M   0% /dev/shm
tmpfs           154M  4.4M  150M   3% /run
/dev/xvda4      9.4G  1.3G  8.1G  14% /
/dev/xvda3      495M  153M  343M  31% /boot
/dev/xvda2      200M  8.0K  200M   1% /boot/efi
tmpfs            77M     0   77M   0% /run/user/1000
172.31.45.191 | CHANGED | rc=0 >>
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        4.0M     0  4.0M   0% /dev
tmpfs           385M     0  385M   0% /dev/shm
tmpfs           154M  4.4M  150M   3% /run
/dev/xvda4      9.4G  1.3G  8.1G  14% /
/dev/xvda3      495M  153M  343M  31% /boot
/dev/xvda2      200M  8.0K  200M   1% /boot/efi
tmpfs            77M     0   77M   0% /run/user/1000
ubuntu@ip-172-31-40-196:~$
```

Check Partition on the Worker Ec2 instance

- **ansible -a “lsblk” all - -user=ec2-user**

```
ubuntu@ip-172-31-40-196:~$ ansible -a "lsblk" all --user=ec2-user
172.31.43.108 | CHANGED | rc=0 >>
NAME    MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
xvda    202:0    0   10G  0 disk
├─xvda1 202:1    0    1M  0 part
├─xvda2 202:2    0  200M  0 part /boot/efi
├─xvda3 202:3    0  500M  0 part /boot
└─xvda4 202:4    0  9.3G  0 part /
172.31.45.191 | CHANGED | rc=0 >>
NAME    MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
xvda    202:0    0   10G  0 disk
├─xvda1 202:1    0    1M  0 part
├─xvda2 202:2    0  200M  0 part /boot/efi
├─xvda3 202:3    0  500M  0 part /boot
└─xvda4 202:4    0  9.3G  0 part /
ubuntu@ip-172-31-40-196:~$
```

Check RAM on Worker Ec2 instance

- **ansible -a “free -h” all - -user=ec2-user**

```
ubuntu@ip-172-31-40-196:~$ ansible -a "free -h" all --user=ec2-user
172.31.43.108 | CHANGED | rc=0 >>
               total        used        free      shared  buff/cache   available
Mem:           768Mi       259Mi       321Mi       5.0Mi       306Mi       509Mi
Swap:             0B          0B          0B
172.31.45.191 | CHANGED | rc=0 >>
               total        used        free      shared  buff/cache   available
Mem:           768Mi       280Mi       295Mi       5.0Mi       311Mi       487Mi
Swap:             0B          0B          0B
ubuntu@ip-172-31-40-196:~$
```

Create group Using Ansible

- **ansible all -m group -a “name=devops state=present” - -user=ec2-user -b**

```
ubuntu@ip-172-31-40-196:~$ ansible all -m group -a "name=devops state=present" -
-user=ec2-user -b
172.31.45.191 | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": true,
    "gid": 1001,
    "name": "devops",
    "state": "present",
    "system": false
}
172.31.43.108 | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": true,
    "gid": 1001,
    "name": "devops",
    "state": "present",
    "system": false
}
```

Create Users

- **ansible all -m user -a “name=user1 append=yes groups=devops” - -user=ec2-user -b**

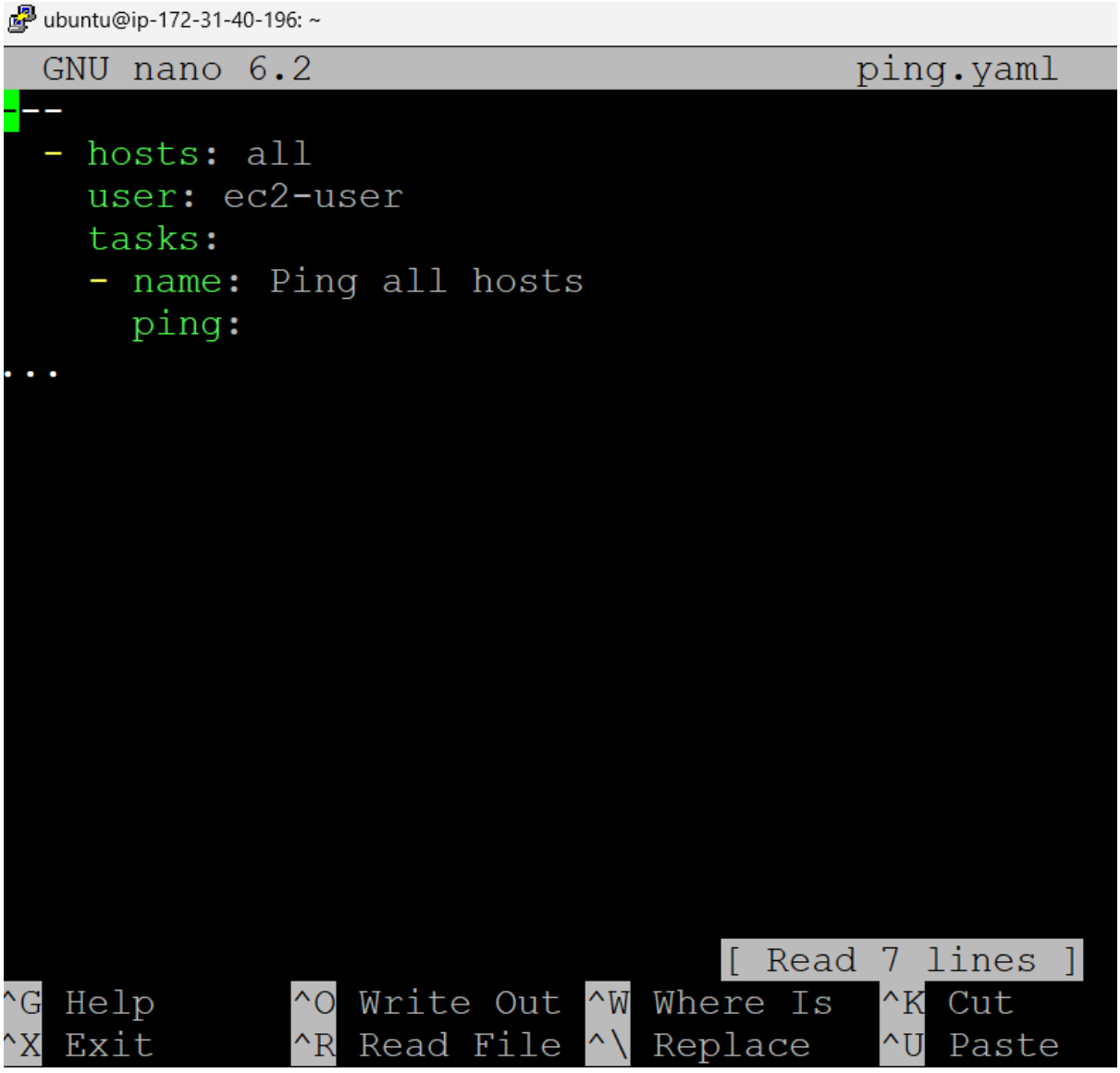
```
ubuntu@ip-172-31-40-196:~$ ansible all -m user -a "name=user1 append=yes groups=
devops" --user=ec2-user -b
172.31.45.191 | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": true,
    "comment": "",
    "create_home": true,
    "group": 1002,
    "groups": "devops",
    "home": "/home/user1",
    "name": "user1",
    "shell": "/bin/bash",
    "state": "present",
    "system": false,
    "uid": 1001
}
```

Ansible Playbook

- **Download a Code with a simple language Oe Refer with the below mentioned example**
- **Reference From operating system (ansible -doc)**

Ping function

- **Create a folder to store the code**
- **Use nano command to insert the code in the file**
- **Copy and paste the code (right click to paste on ubuntu)**
- **Ctrl X to exit**
- **Y and enter to save**



- To run the code us (ansible-playbook ping.yaml)

```
ubuntu@ip-172-31-40-196:~$ ansible-playbook ping.yaml

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

TASK [Gathering Facts] *********************************************************
ok: [172.31.43.108]
ok: [172.31.45.191]

TASK [Ping all hosts] **********************************************************
ok: [172.31.43.108]
ok: [172.31.45.191]

PLAY RECAP *********************************************************************
172.31.43.108              : ok=2    changed=0    unreachable=0    failed=0    s
kipped=0    rescued=0    ignored=0
172.31.45.191              : ok=2    changed=0    unreachable=0    failed=0    s
kipped=0    rescued=0    ignored=0

ubuntu@ip-172-31-40-196:~$
```

Refer the below Diagram for Ansible