Lab 11: Ansible Dynamic Inventories • Objective: Set up Ansible dynamic inventories to automatically discover and manage infrastructure. Use Ansible Galaxy role to install Apache.

Ansible Dynamic Inventories is a feature that allows Ansible to automatically discover hosts from external sources like AWS, Azure, Google Cloud, etc.

Vim ansible.cfg
To manage configuration related ansible such as (inventory,private_key)

```
[defaults]
inventory = ./aws_ec2.yml
remote_user =  ubuntu
private_key = ./ahmed.pem

~
~
~
~
~
~
~
```

Vim aws_ec2.yml
plugin: amazon.aws.aws_ec2: Tells Ansible to use the AWS EC2 plugin for dynamic inventory.
regions: Specifies the AWS region (us-east-1) where EC2 instances are located.
filters: Filters EC2 instances based on the tag Name with value ivolve.
keyed_groups: Groups EC2 instances by their Name tag, and prefixes the group names with tag.

```
--
plugin: amazon.aws.aws_ec2
regions:
  - us-east-1  # Add your target AWS region
filters:
  "tag:Name": ivolve  # Filter EC2 instances based on tags
keyed_groups:
  - key: tags.Name
    prefix: tag

~
~
~
~
~
~
~
```

Vim playbook.yml

This playbook automatically installs Apache on all EC2 instances (with the tag `Name=ivolve`) in the specified AWS region, using the **geerlingguy.apache** Ansible role.

```
---
- name: Install Apache on Dynamic Inventory Hosts
  hosts: tag_ivolve
  become: yes
  roles:
      - geerlingguy.apache
~
~
~
```

Command (Run playbook)

```
hmed@ahmed-VMware-Virtual-Platform:~/Downloads/lab5/lab5.1$ ansible-playbook -i aws_ec2.yml playbook.yml --priva
e-key=ahmed.pem -u ubuntu

 PLAY [Install Apache on Dynamic Inventory Hosts] >
```

Instance

Name ⌀	∨	Instance ID	Instance state	∨	Instance type	∨	Status check	Alarm status	Availability zone	∨	Public IPv4 DNS	
☑	ivolve	i-08a10154985be6219	⊘ Running ⊕ ⊖		t2.micro		⊘ 2/2 checks passec	View alarms +	us-east-1b		ec2-3-87-201-167.com...	

Output

```
             ||  ----w |
             ||       ||

ec2-3-87-201-167.compute-1.amazonaws.com : ok=16     changed=6      u
=0       ignored=0
```

```
ahmed@ahmed-VMware-Virtual-Platform:~/Downloads/lab5/lab5.1$ ansible all -i aws_ec2.yml -m command -a "systemctl
status apache2" --private-key=ahmed.pem -u ubuntu
ec2-3-87-201-167.compute-1.amazonaws.com | CHANGED | rc=0 >>
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
     Active: active (running) since Wed 2024-12-04 19:52:11 UTC; 3min 32s ago
       Docs: https://httpd.apache.org/docs/2.4/
    Process: 2670 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
   Main PID: 2673 (apache2)
      Tasks: 55 (limit: 1130)
     Memory: 6.2M (peak: 6.4M)
        CPU: 41ms
     CGroup: /system.slice/apache2.service
             ├─2673 /usr/sbin/apache2 -k start
             ├─2675 /usr/sbin/apache2 -k start
             └─2676 /usr/sbin/apache2 -k start

Dec 04 19:52:11 ip-172-31-91-209 systemd[1]: Starting apache2.service - The Apache HTTP Server...
Dec 04 19:52:11 ip-172-31-91-209 systemd[1]: Started apache2.service - The Apache HTTP Server.
```