

Ansible Dynamic Inventory

(Ubuntu as Master and Amazon Linux 2 as Nodes)

Pre-requisites:

Create 1 Ubuntu 20.4 EC2 Instance with an IAM role of EC2 permissions.

Create 2 EC2 Amazon Linux – 2 Instances with 22 port allowing master EC2 IP in security group.

Ubuntu for Ansible Master

Amazon Linux 2 for Ansible Nodes

<input type="checkbox"/>	Ansible-Master	i-0e5bac0f4dc387a3b	✔ Running		t2.micro	✔ 2/2 checks passed	No alarms	+	us-west-2a
<input type="checkbox"/>	Ansible-Node-2	i-0e34cf15afe8fae93	✔ Running		t2.micro	✔ 2/2 checks passed	No alarms	+	us-west-2a
<input type="checkbox"/>	Ansible-Node-1	i-0f1d3f8735b69ae5f	✔ Running		t2.micro	✔ 2/2 checks passed	No alarms	+	us-west-2a

- SSH into Ansible-Master

```
avinashmami@Avinashs-MacBook-Pro:~$ ssh -i "avi-jes-oregon.pem" ubuntu@ec2-54-149-246-151.us-west-2.compute.amazonaws.com
Welcome to Ubuntu 20.04.3 LTS (GNU/Linux 5.11.0-1022-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

System information as of Sat Dec 18 20:02:51 UTC 2021

System load:  0.0               Processes:            103
Usage of /:   27.6% of 7.69GB   Users logged in:     1
Memory usage: 25%              IPv4 address for eth0: 10.0.0.153
Swap usage:   0%

11 updates can be applied immediately.
4 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Last login: Sat Dec 18 20:02:39 2021 from 124.123.172.210
ubuntu@ip-10-0-0-153:~$
```

- Update the EC2 instance packages

```
sudo apt update -y
```

- Install Ansible -

```
sudo apt install -y ansible
```



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- Install Python

```
sudo apt install python-is-python3
```

- Install PIP

```
sudo apt-get install python3-pip -y
```

- Install Boto

```
sudo pip3 install boto
```

- Install Boto3

```
sudo pip3 install boto3
```

- Install Ansible Dynamic Inventory Plugin

```
ansible-galaxy collection install amazon.aws
```

- Add a tag to two Ansible Node EC2 Instances

- o Env : dev

- Create a file for Ansible Dynamic Inventory Plugin

- o sudo vi aws_ec2.yaml

- plugin: aws_ec2
 - regions:
 - us-west-2
 - filters:
 - tag:Env:
 - dev



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- Goto /etc/ansible/ansible.cfg, here everything is commented so uncomment "sudo_user" and "host_key_checking"
 - o sudo vi /etc/ansible/ansible.cfg and uncomment

- To test dynamic Inventory

```
ansible-inventory -i aws_ec2.yaml --list
```

```
    "subnet_id": "subnet-05f3a4202f1e7127f",
    "tags": {
      "Env": "dev",
      "Name": "Ansible-Node-1"
    },
    "virtualization_type": "hvm",
    "vpc_id": "vpc-0b1a467e85796eabc"
  }
},
"all": {
  "children": [
    "aws_ec2",
    "ungrouped"
  ]
},
"aws_ec2": {
  "hosts": [
    "ec2-34-210-217-193.us-west-2.compute.amazonaws.com",
    "ec2-34-215-101-35.us-west-2.compute.amazonaws.com"
  ]
}
}
```



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- Create the pem key file which is used for Ansible Node EC2 Instances

```
sudo vi avi-jes-oregon.pem

chmod 400 avi-jes-oregon.pem
```

- Run below command to check ping for Ansible Nodes

```
ansible aws_ec2 -i aws_ec2.yaml -m ping --private-key=avi-jes-oregon.pem
--user ec2-user
```

```
ubuntu@ip-10-0-0-153:~$ ansible aws_ec2 -i aws_ec2.yaml -m ping --private-key=avi-jes-oregon.pem --user ec2-user
[WARNING]: Platform linux on host ec2-34-219-222-75.us-west-2.compute.amazonaws.com is using the discovered Python in
/usr/bin/python, but future installation of another Python interpreter could change this. See
https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more information.
ec2-34-219-222-75.us-west-2.compute.amazonaws.com | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python"
  },
  "changed": false,
  "ping": "pong"
}
[WARNING]: Platform linux on host ec2-18-237-3-191.us-west-2.compute.amazonaws.com is using the discovered Python in
/usr/bin/python, but future installation of another Python interpreter could change this. See
https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more information.
ec2-18-237-3-191.us-west-2.compute.amazonaws.com | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python"
  },
  "changed": false,
  "ping": "pong"
}
```

- Run below command to install git on Ansible nodes using dynamic inventory

```
sudo ansible aws_ec2 -i aws_ec2.yaml -m yum -a 'name=git state=present'
--private-key=avi-jes-oregon.pem --become --user ec2-user
```



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```

noarch      1:0.17020-2.amzn2      amzn2-core      32 k\n perl-Git      noarch      2.32.0-1.
amzn2.0.1    amzn2-core      43 k\n perl-TermReadKey      x86_64      2.30-20.amzn2.0.2      amzn2-core
31 k\n\nTransaction Summary\n=====
\nInstall 1 Package (+6 Dependent packages)\n\nTotal download size: 7.8 M\nInstalled size: 38 M\nDownloading pac
kages:\n-----\nTotal
23 MB/s | 7.8 MB 00:00 \nRunning transaction check\nRunning transaction test\
\nTransaction test succeeded\nRunning transaction\n Installing : git-core-2.32.0-1.amzn2.0.1.x86_64
1/7 \n Installing : git-core-doc-2.32.0-1.amzn2.0.1.noarch      2/7 \n Installi
ng : 1:perl-Error-0.17020-2.amzn2.noarch      3/7 \n Installing : 1:emacs-filesystem-27.2-4
.amzn2.0.1.noarch      4/7 \n Installing : perl-TermReadKey-2.30-20.amzn2.0.2.x86_64
5/7 \n Installing : perl-Git-2.32.0-1.amzn2.0.1.noarch      6/7 \n Installing : git
-2.32.0-1.amzn2.0.1.x86_64      7/7 \n Verifying : perl-TermReadKey-2.30-20.amzn2.0.
2.x86_64      1/7 \n Verifying : git-core-doc-2.32.0-1.amzn2.0.1.noarch      2/
7 \n Verifying : perl-Git-2.32.0-1.amzn2.0.1.noarch      3/7 \n Verifying : 1:emacs-fil
esystem-27.2-4.amzn2.0.1.noarch      4/7 \n Verifying : git-2.32.0-1.amzn2.0.1.x86_64
5/7 \n Verifying : git-core-2.32.0-1.amzn2.0.1.x86_64      6/7 \n Ve
rifying : 1:perl-Error-0.17020-2.amzn2.noarch      7/7 \n\nInstalled:\n git.x86_64 0:2.32.
0-1.amzn2.0.1      \n\nDependency Installed:\n emacs-filesystem.noarch
1:27.2-4.amzn2.0.1      \n git-core.x86_64 0:2.32.0-1.amzn2.0.1      \n p
perl-Error.noarch 1:0.17020-2.amzn2      \n perl-Git.noarch 0:2.32.0-1.amzn
2.0.1      \n perl-TermReadKey.x86_64 0:2.30-20.amzn2.0.2
\n\nComplete!\n"
]
}
[ec2-user@ip-10-0-0-221 ~]$

```

- Let's run ansible playbook in the below demo
- Create a Ansible Playbook
 - o `sudo vi test-playbook.yaml`

```

---
- name: sample playbook
  hosts: all
  become: true
  tasks:
    - name: install httpd
      yum:
        name: httpd
        state: latest

    - name: run httpd
      service:
        name: httpd
        state: started

    - name: create content
      copy:
        content: "GM! Hello from JJTech"
        dest: /var/www/html/index.html

```

- To test ansible playbook run below command



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```
sudo ansible-playbook -i aws_ec2.yaml -l aws_ec2 test-playbook.yaml
--private-key=avi-jes-oregon.pem --user ec2-user
```

```
ubuntu@ip-10-0-0-153:~$ ansible-playbook -i aws_ec2.yaml -l aws_ec2 test.yaml --private-key=avi-jes-oregon.pem --user ec2-user

PLAY [sample playbook] *****

TASK [Gathering Facts] *****
[WARNING]: Platform linux on host ec2-34-214-165-33.us-west-2.compute.amazonaws.com is using the discovered Python interpreter at
/usr/bin/python, but future installation of another Python interpreter could change this. See
https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more information.
ok: [ec2-34-214-165-33.us-west-2.compute.amazonaws.com]
[WARNING]: Platform linux on host ec2-34-220-66-105.us-west-2.compute.amazonaws.com is using the discovered Python interpreter at
/usr/bin/python, but future installation of another Python interpreter could change this. See
https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more information.
ok: [ec2-34-220-66-105.us-west-2.compute.amazonaws.com]

TASK [install httpd] *****
changed: [ec2-34-214-165-33.us-west-2.compute.amazonaws.com]
changed: [ec2-34-220-66-105.us-west-2.compute.amazonaws.com]

TASK [run httpd] *****
changed: [ec2-34-220-66-105.us-west-2.compute.amazonaws.com]
changed: [ec2-34-214-165-33.us-west-2.compute.amazonaws.com]

TASK [create content] *****
changed: [ec2-34-214-165-33.us-west-2.compute.amazonaws.com]
changed: [ec2-34-220-66-105.us-west-2.compute.amazonaws.com]

PLAY RECAP *****
ec2-34-214-165-33.us-west-2.compute.amazonaws.com : ok=4    changed=3    unreachable=0    failed=0    skipped=0    rescued=0    ign
ored=0
ec2-34-220-66-105.us-west-2.compute.amazonaws.com : ok=4    changed=3    unreachable=0    failed=0    skipped=0    rescued=0    ign
ored=0

ubuntu@ip-10-0-0-153:~$
```

- To test whether playbook is executed successfully. Copy the public ip of Ansible node and search on google.

← → ↻ ⚠ Not Secure | 34.210.217.193

GM! Hello from JJTech



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