

Module-6: Ansible Assignment - 1

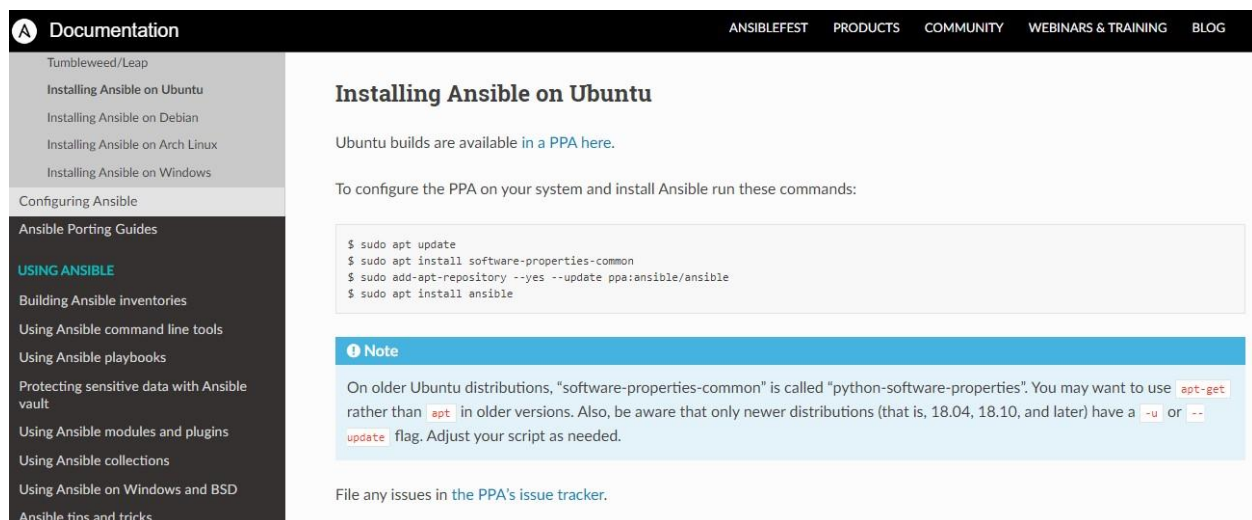
You have been asked to:

- Setup Ansible cluster with 3 nodes
- On slave1 install java
- On slave 2 install mysql-server

Do the above tasks using Ansible playbooks

The above task can be achieved as follows

- We can perform above task on AWS login to the AWS management console and then create three instances with Ubuntu and enable ssh and http to allow internet traffic.
- Name the instances as **Aansible_Master**, **Ansible_Slave1**, **Ansible_Slave2** and connect to all instances.
- Go to the Ansible documentation and apply commands as shown below.



The screenshot shows the Ansible documentation website. The left sidebar contains a navigation menu with links like 'Documentation', 'Installing Ansible on Ubuntu', 'Configuring Ansible', and 'Ansible Porting Guides'. The main content area is titled 'Installing Ansible on Ubuntu' and includes the text 'Ubuntu builds are available in a PPA here.' and 'To configure the PPA on your system and install Ansible run these commands:'. Below this is a code block with the following commands:

```
$ sudo apt update
$ sudo apt install software-properties-common
$ sudo add-apt-repository --yes --update ppa:ansible/ansible
$ sudo apt install ansible
```

Below the code block is a 'Note' section with a blue background, stating: 'On older Ubuntu distributions, "software-properties-common" is called "python-software-properties". You may want to use `apt-get` rather than `apt` in older versions. Also, be aware that only newer distributions (that is, 18.04, 18.10, and later) have a `-u` or `--update` flag. Adjust your script as needed.'

At the bottom of the page, it says 'File any issues in the PPA's issue tracker.'

- After installing ansible we need to make ssh connection **cd .ssh/** then apply commands as shown below
- **cd .ssh/**
- **ls**
- **ssh-keygen**
- **cat id_rsa.pub**
- Copy the public key and paste it in two Slaves as shown below

```

ubuntu@ip-172-31-91-133:~$ sudo apt install ansible
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  ansible-core python3-jmespath python3-kerberos python3-nacl python3-ntlm-auth python3-packaging python3-paramiko python3-requests-kerberos
  python3-requests-ntlm python3-resolvelib python3-winrm python3-xlrd python3-xlsxwriter python3-yaml python3-yaml-cpp python3-zipp python3-zstd
Suggested packages:
  python-nacl-doc python3-gssapi python3-invoke
The following NEW packages will be installed:
  ansible ansible-core python3-jmespath python3-kerberos python3-nacl python3-ntlm-auth python3-packaging python3-paramiko
  python3-requests-kerberos python3-requests-ntlm python3-resolvelib python3-winrm python3-xlrd python3-xlsxwriter python3-yaml python3-yaml-cpp python3-zipp python3-zstd
0 upgraded, 14 newly installed, 0 to remove and 30 not upgraded.
Need to get 17.9 MB of archives.
After this operation, 300 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 python3-packaging all 21.3-1 [30.7 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 python3-resolvelib all 0.8.1-1 [23.6 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 python3-jmespath all 0.10.0-1 [21.7 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 python3-kerberos amd64 1.1.14-3.1build5 [23.0 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 python3-nacl amd64 1.5.0-2 [63.1 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 python3-ntlm-auth all 1.4.0-1 [20.4 kB]

```

i-012e927f278ab88c1 (Ansible_Master)

PublicIPs: 54.174.91.230 PrivateIPs: 172.31.91.133

```

EC2
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-91-133:~$ cd .ssh/
ubuntu@ip-172-31-91-133:~/.ssh$ ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/home/ubuntu/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/ubuntu/.ssh/id_rsa
Your public key has been saved in /home/ubuntu/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:+KDYfIolpMURdgf8mM5+d63PPhMe0h3h74imlZuiaHc ubuntu@ip-172-31-91-133
The key's randomart image is:
+---[RSA 3072]-----+
|  o.o..          |
| .o..          . |
| . +            . |
| .o.o..        o |
| +o o S . . o |
| + o.o . +.. . |
| .o.o . +o+ o |
| B. +.o EoBo. . |
| . +=.o.+oB*o |
+---[SHA256]-----+
ubuntu@ip-172-31-91-133:~/.ssh$ ls

```

i-012e927f278ab88c1 (Ansible_Master)

PublicIPs: 54.174.91.230 PrivateIPs: 172.31.91.133

```
EC2

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-46-86:~$ cd .ssh/
ubuntu@ip-172-31-46-86:~/.ssh$ ls
authorized_keys
ubuntu@ip-172-31-46-86:~/.ssh$ sudo nano authorized_keys
ubuntu@ip-172-31-46-86:~/.ssh$
```

i-053d32d72430fb214 (Ansible_Slave1)

PublicIPs: 54.205.179.238 PrivateIPs: 172.31.46.86

```
EC2
GNU nano 6.2 authorized_keys
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQCbzGXGb0cm/xAfflZ0BU8Om+XSQkrb1v4RuySkikKugYpY0ZkrhKbcq3FUylddFL3UuzsHsDufpavEB1rOb2jFN7GrFr8B0dc+LLixTciP
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQBgQCwkG68sBQ511XRUVts9BiCKOdzu0Q8ALQXY7kPeTnvGY0LOuidNpLoQlTNtF2KGECfDoEnL71HV7+qAKXg2+ALG01ThgcR+4papiFZ2G2V
^G Help      ^C Write Out  ^W Where Is   ^R Cut        | Read 2 lines | ^C Location  ^U Undo       ^M Set Mark   ^_ To Bracket
^X Exit      ^O Read File  ^N Replace    ^U Paste      ^J Justify    ^_ Go To Line ^B Redo       ^G Copy       ^C Where Was
```

i-0c29c8355345d9f7d (Ansible_Slave1)

PublicIPs: 54.209.88.18 PrivateIPs: 172.31.80.245

EC2

```
~/ssh/known_hosts:1: [hashed name]
The authenticity of host '172.31.86.84 (172.31.86.84)' can't be established.
ED25519 key fingerprint is SHA256:KzNChbdjFMkO6rVmks7UC0lR/9pXAIInMZ5PJg5vxT5o.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
172.31.80.245 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": false,
  "ping": "pong"
}
yes
172.31.86.84 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": false,
  "ping": "pong"
}
ubuntu@ip-172-31-91-133:/etc/ansible$ cd
ubuntu@ip-172-31-91-133:~$ sudo nano play1.yaml
ubuntu@ip-172-31-91-133:~$ ansible-playbook play1.yaml --syntax-check
```

i-012e927f278ab88c1 (Ansible_Master)

PublicIPs: 54.174.91.230 PrivateIPs: 172.31.91.133

```
playbook: play1.yaml
ubuntu@ip-172-31-91-133:~$ ansible-playbook play1.yaml --check

PLAY [task for Slave1] *****

TASK [Gathering Facts] *****
ok: [172.31.80.245]

TASK [install java on Slave1] *****
changed: [172.31.80.245]

PLAY [task for Slave2] *****

TASK [Gathering Facts] *****
ok: [172.31.86.84]

TASK [install mysql on Slave2] *****
changed: [172.31.86.84]

PLAY RECAP *****
```

i-012e927f278ab88c1 (Ansible_Master)

PublicIPs: 54.174.91.230 PrivateIPs: 172.31.91.133


```
EC2
GNU nano 6.2 play1.yaml
---
- name: task for Slave1
  hosts: Slave1
  become: true
  tasks:
    - name: install java in Slave1
      apt: name=openjdk-11-jdk state=latest
- name: task for Slave2
  hosts: Slave2
  become: true
  tasks:
    - name: install mysql in Slave2
      apt: name=mysql-server state=latest
```

```
aws Services Search [Alt+S] N. Virginia Sai Raja Reddy N
EC2
ubuntu@ip-172-31-91-133:~$ ansible-playbook play1.yaml
PLAY [task for Slave1] *****
TASK [Gathering Facts] *****
ok: [172.31.80.245]
TASK [install java on Slave1] *****
changed: [172.31.80.245]
PLAY [task for Slave2] *****
TASK [Gathering Facts] *****
ok: [172.31.86.84]
TASK [install mysql on Slave2] *****
changed: [172.31.86.84]
PLAY RECAP *****
172.31.80.245      : ok=2  changed=1  unreachable=0  failed=0  skipped=0  rescued=0  ignored=0
172.31.86.84      : ok=2  changed=1  unreachable=0  failed=0  skipped=0  rescued=0  ignored=0
ubuntu@ip-172-31-91-133:~$

i-012e927f278ab88c1 (Ansible_Master)
PublicIPs: 54.174.91.230  PrivateIPs: 172.31.91.133
```

```
ubuntu@ip-172-31-80-245:~/.ssh$ java --version
openjdk 11.0.21 2023-10-17
OpenJDK Runtime Environment (build 11.0.21+9-post-Ubuntu-0ubuntu122.04)
OpenJDK 64-Bit Server VM (build 11.0.21+9-post-Ubuntu-0ubuntu122.04, mixed mode, sharing)
ubuntu@ip-172-31-80-245:~/.ssh$
```

i-0c29c8355345d9f7d (Ansible_Slave1)
PublicIPs: 54.209.88.18 PrivateIPs: 172.31.80.245

```
ubuntu@ip-172-31-86-84:~/.ssh$ mysql --version
mysql Ver 8.0.35-0ubuntu0.22.04.1 for Linux on x86_64 ((Ubuntu))
ubuntu@ip-172-31-86-84:~/.ssh$
```

i-0ee5a6be8aa70cd8c (Ansible_Slave2)
PublicIPs: 44.202.87.7 PrivateIPs: 172.31.86.84

We can get the versions as we were successfully installed java on Slave1 and mysql on Slave2.