Devops-Capstone-Project1

1. Installed Configuration managementTool

```
ubuntu@Project1Master:~$ ansible --version
ansible [core 2.17.7]
  config file = /etc/ansible/ansible.cfg
  configured module search path = ['/home/ubuntu/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/lib/python3/dist-packages/ansible
  ansible collection location = /home/ubuntu/.ansible/collections:/usr/share/ansible/collections
  executable location = /usr/bin/ansible
  python version = 3.12.3 (main, Sep 11 2024, 14:17:37) [GCC 13.2.0] (/usr/bin/python3)
  jinja version = 3.1.2
  libyaml = True
ubuntu@Project1Master:~$
```

```
information.
172.31.19.193 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3.12"
    },
    "changed": false,
    "ping": "pong"
}
yes
Please type 'yes', 'no' or the fingerprint: yes
[WARNING]: Platform linux on host 172.31.29.229 is using the discovered Python
hon
interpreter could change the meaning of that path. See https://docs.ansible.co
e
information.
172.31.29.229 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3.12"
    },
    "changed": false,
```

2. Playbook to install necessary software on master node and both slave

```
  GNU nano 7.2                                                      play.yaml *
---
- name: Tasks on Master
  hosts: localhost
  become: true
  tasks:
    - name: Execute tasks for masters
      script: master.sh

- name: Tasks on Slaves
  hosts: all
  become: true
  tasks:
    - name: Execute tasks for Slave
      script: slave.sh
```

- Script file for master node

```
  GNU nano 7.2                                                      master.sh *
sudo apt update
sudo apt install openjdk-17-jdk -y

sudo wget -O /usr/share/keyrings/jenkins-keyring.asc \
    https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key
echo "deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc]" \
    https://pkg.jenkins.io/debian-stable binary/ | sudo tee \
    /etc/apt/sources.list.d/jenkins.list > /dev/null

sudo apt-get update
sudo apt-get install fontconfig openjdk-17-jre
sudo apt-get install jenkins -y
```

- Scrip file for both slave node

```
GNU nano 7.2                                                    slave.sh
sudo apt update
sudo apt install openjdk-17-jdk -y
sudo apt install docker.io -y
```

- Successfully executed playbook

```
ok: [localhost]

TASK [Execute tasks for masters] ***********************************************************************
changed: [localhost]

PLAY [Tasks on Slaves] *********************************************************************************

TASK [Gathering Facts] *********************************************************************************
[WARNING]: Platform linux on host 172.31.19.193 is using the discovered Python interpreter at /usr/bin/python3.12, but future inst
Python interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.17/reference_appendices/inte
for more information.
ok: [172.31.19.193]
[WARNING]: Platform linux on host 172.31.29.229 is using the discovered Python interpreter at /usr/bin/python3.12, but future inst
Python interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.17/reference_appendices/inte
for more information.
ok: [172.31.29.229]

TASK [Execute tasks for Slave] *************************************************************************
changed: [172.31.29.229]
changed: [172.31.19.193]

PLAY RECAP *********************************************************************************************
172.31.19.193              : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```

- Java and Jenkins on master installed

```
ubuntu@Project1Master:/etc/ansible$ java --version
openjdk 17.0.13 2024-10-15
OpenJDK Runtime Environment (build 17.0.13+11-Ubuntu-2ubuntu124.04)
OpenJDK 64-Bit Server VM (build 17.0.13+11-Ubuntu-2ubuntu124.04, mixed mode, sharing)
ubuntu@Project1Master:/etc/ansible$ jenkins --version
2.479.2
ubuntu@Project1Master:/etc/ansible$
```

i-05aa6349b6ba1d8ea (Project1Master)

- Java and Docker on both slave 1 and slave 2 installed

```
ubuntu@Project1Slave1:~$ java --version
openjdk 17.0.13 2024-10-15
OpenJDK Runtime Environment (build 17.0.13+11-Ubuntu-2ubuntu124.04)
OpenJDK 64-Bit Server VM (build 17.0.13+11-Ubuntu-2ubuntu124.04, mixed mode, sharing)
ubuntu@Project1Slave1:~$ docker --version
Docker version 26.1.3, build 26.1.3-0ubuntu1~24.04.1
ubuntu@Project1Slave1:~$ s
```

i-024c8dca204c76fdf (Project1Slave1)

```
ubuntu@Project1Slave2:~$ java --version
openjdk 17.0.13 2024-10-15
OpenJDK Runtime Environment (build 17.0.13+11-Ubuntu-2ubuntu124.04)
OpenJDK 64-Bit Server VM (build 17.0.13+11-Ubuntu-2ubuntu124.04, mixed mode, sharing)
ubuntu@Project1Slave2:~$ docker --version
Docker version 26.1.3, build 26.1.3-0ubuntu1~24.04.1
ubuntu@Project1Slave2:~$ s
```

i-067046f13b23398cb (Project1Slave2)

3. Develop(Slave1) and Production(Slave 2) node on jenkins

S	Name ↓	Architecture	Clock Difference	Free Disk Space	Free Swap Space	Free Temp Space	Response Time	
🖥	Built-In Node	Linux (amd64)	In sync	3.28 GiB	❗ 0 B	3.28 GiB	0ms	⚙
🖥	Slave1	Linux (amd64)	In sync	3.88 GiB	❗ 0 B	3.88 GiB	27ms	⚙
🖥	Slave2	Linux (amd64)	In sync	3.85 GiB	❗ 0 B	3.85 GiB	93ms	⚙
	Data obtained	**15 sec**	**15 sec**	**15 sec**	**15 sec**	**15 sec**	**15 sec**	

Nodes   + New Node   Configure Monitors   ↻

4. Three jobs for build(job1), test(job2), prod(job3)

S	W	Name ↓	Last Success		Last Failure	Last Duration	
✓	☀	job1	1 hr 5 min	#5	N/A	1.2 sec	▷
✓	☀	job2	34 min	#2	N/A	22 sec	▷
✓	☀	job3	4 min 19 sec	#4	N/A	1.2 sec	▷

- **Docker command in execute shell for job1 (similarly job2)**

See the list of available environment variables

```
sudo docker build /home/ubuntu/jenkins/workspace/job1 -t job1
sudo docker run -itd -p 83:80 --name=c1 job1
```

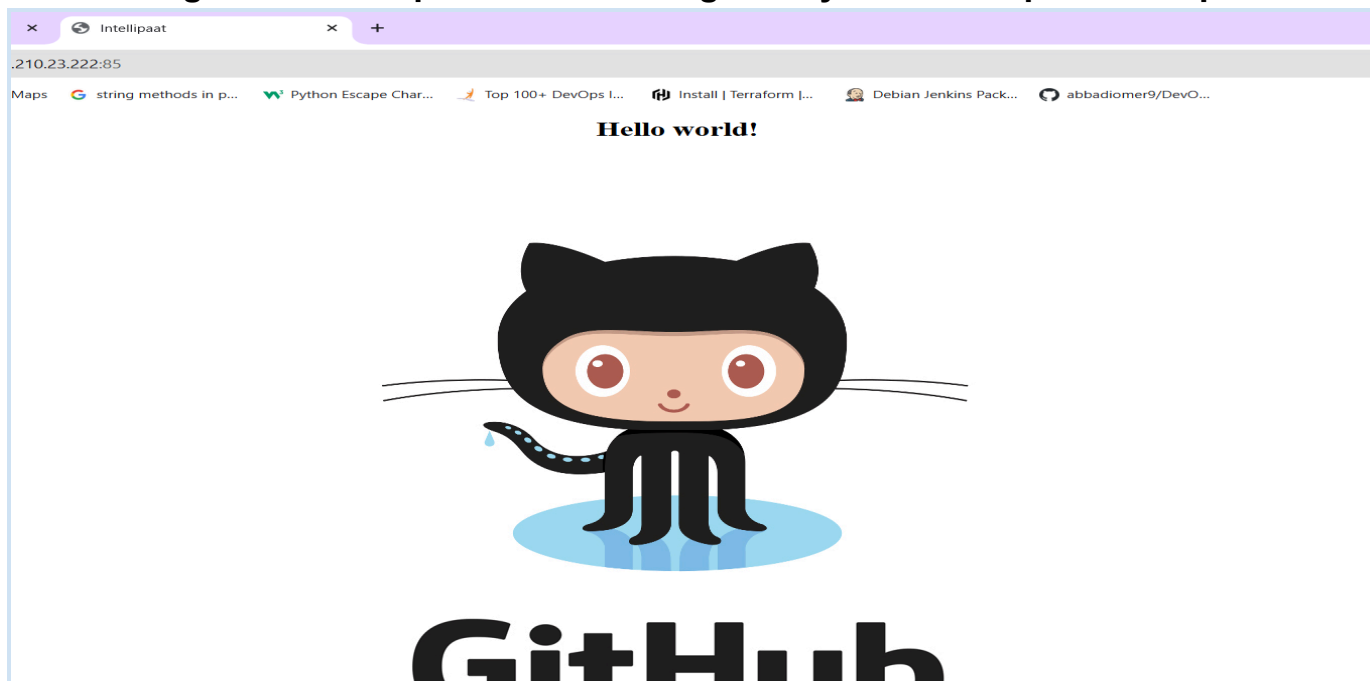- **Docker command in execute shell for job3 to push commit to prod**

≡ **Execute shell** ?   ✕

Command

See the list of available environment variables

```
sudo docker build . -t job3
sudo docker run -itd -p 88:80 --name=c3 job3
```

5. No changes on develop branch as changes only tested not pushed to prod

✕   ⊗ Intellipaat   ✕   +

.210.23.222:85

Maps   G string methods in p...   W Python Escape Char...   ⚡ Top 100+ DevOps I...   ⓗ Install | Terraform |...   ⚑ Debian Jenkins Pack...   ◯ abbadiomer9/DevO...

Hello world!

GitHub

6. Before Changes made to master branch

website_demo / index.html   in master

Edit | Preview   Code 55% faster with GitHub Copilot

```
1   <html>
2   <head>
3   <title> Intellipaat </title>
4   </head>
5   <body style = "background-image:url('images/github3.jpg'); background-size: 100%">
6   <h2 ALIGN=CENTER>Hello world!</h2>
7   </body>
8   </html>
9
```

7. Changes made on master and committed and pushed to prod

⚠ Not secure   54.90.172.63:88

▶ YouTube   🗺 Maps   G string methods in p...   ⩗ Python Escape Char...   ⬲ Top 100+ DevOps I...   ⑭ Install | Terraform |...   ⬕ Debian Jenkins Pack...   ⬯ abbadiomer9/DevO...

Hello world! making changes to master