

NAME: SANA TARIQ
CLASS: BSE 5B
REG.NO: 058
SUBJECT: CLOUD COMPUTING

LAB#14

TASK 1:

```
@SanaTariq205 ② /workspaces/terraform_machine (main) $ terraform --version
Terraform v1.14.3
on linux_amd64
@SanaTariq205 ② /workspaces/terraform_machine (main) $ ansible --version
ansible: command not found
@SanaTariq205 ② /workspaces/terraform_machine (main) $ aws sts get-caller-identity
Unable to locate credentials. You can configure credentials by running "aws login".
@SanaTariq205 ② /workspaces/terraform_machine (main) $ ls ~/.ssh
authorized_keys
@SanaTariq205 ② /workspaces/terraform_machine (main) $ ssh-keygen -t ed25519 -f ~/.ssh/id_ed25519 -N ""
Generating public/private ed25519 key pair.
Your identification has been saved in /home/codespace/.ssh/id_ed25519
Your public key has been saved in /home/codespace/.ssh/id_ed25519.pub
The key fingerprint is:
SHA256:9nkGfFaARAgCjNVRfexwoCQJKPoLjySy1jdNjkf61k codespace@codespaces-7ce4f3
The key's randomart image is:
+--[ED25519 256]--+
|o====+ oo.+ |
|o+...+ = ... + |
|* . = . . . |
|.o . . . |
|o. . . .S . |
|++ . *.... o |
|*.. . E.o o |
|o. .o. o |
| .o. |
+---[SHA256]----+
@SanaTariq205 ② /workspaces/terraform_machine (main) $ ls -la ~/.ssh
total 24
drwxr-xr-x 2 codespace codespace 4096 Jan  9 15:10 .
drwxr-x--- 1 codespace codespace 4096 Jan  9 15:08 ..
-rw-r--r-- 1 codespace codespace 184 Jan  9 14:59 authorized_keys
-rw----- 1 codespace codespace 419 Jan  9 15:10 id_ed25519
-rw-r--r-- 1 codespace codespace 109 Jan  9 15:10 id_ed25519.pub
```

```
@SanaTariq205 ② /workspaces/terraform_machine (main) $ cat terraform.tfvars
vpc_cidr_block = "10.0.0.0/16"
subnet_cidr_block = "10.0.10.0/24"
availability_zone = "us-east-1a"
env_prefix = "dev"
instance_type = "t3.micro"
public_key = "~/.ssh/id_ed25519.pub"
private_key = "~/.ssh/id_ed25519"
@SanaTariq205 ② /workspaces/terraform_machine (main) $ terraform init
Initializing the backend...
Initializing modules...
- myapp-subnet in modules/subnet
- myapp-webserver in modules/webserver
Initializing provider plugins...
- Finding latest version of hashicorp/http...
- Finding latest version of hashicorp/aws...
- Installing hashicorp/http v3.5.0...
- Installed hashicorp/http v3.5.0 (signed by HashiCorp)
- Installing hashicorp/aws v6.28.0...
- Installed hashicorp/aws v6.28.0 (signed by HashiCorp)
Terraform has created a lock file .terraform.lock.hcl to record the provider selections it made above. Include this file in your version control repository so that Terraform can guarantee to make the same selections by default when you run "terraform init" in the future.

Terraform has been successfully initialized!
```

```
Outputs:  
webserver_public_ips = [  
    "44.199.249.163",  
    "44.202.192.83",  
]  

```

TASK 2:

```
● @SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $ pipx install ansible-core  
ansible --version  
installed package ansible-core 2.20.1, installed using Python 3.12.1  
These apps are now globally available  
  - ansible  
  - ansible-config  
  - ansible-console  
  - ansible-doc  
  - ansible-galaxy  
  - ansible-inventory  
  - ansible-playbook  
  - ansible-pull  
  - ansible-test  
  - ansible-vault  
done! ✨ ★ ✨  
ansible [core 2.20.1]  
  config file = None  
  configured module search path = ['~/home/codespace/.ansible/plugins/modules', '/usr/share/ansible/plugins/modu  
les']  
  
● @SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $ cat <<EOF > hosts  
44.199.249.163 ansible_user=ec2-user ansible_ssh_private_key_file=/home/codespace/.ssh/id_ed25519 ansible_ssh_c  
ommon_args=' -o StrictHostKeyChecking=no'  
44.202.192.83 ansible_user=ec2-user ansible_ssh_private_key_file=/home/codespace/.ssh/id_ed25519 ansible_ssh_co  
mmon_args=' -o StrictHostKeyChecking=no'  
EOF  
● @SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $ ls -la hosts  
cat hosts  
-rw-rw-rw- 1 codespace codespace 303 Jan 11 12:12 hosts  
44.199.249.163 ansible_user=ec2-user ansible_ssh_private_key_file=/home/codespace/.ssh/id_ed25519 ansible_ssh_c  
ommon_args=' -o StrictHostKeyChecking=no'  
44.202.192.83 ansible_user=ec2-user ansible_ssh_private_key_file=/home/codespace/.ssh/id_ed25519 ansible_ssh_co  
mmon args=' -o StrictHostKeyChecking=no'  
  
cat hosts  
● @SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $ ansible all -i hosts -m ping  
[WARNING]: Host '44.202.192.83' is using the discovered Python interpreter at '/usr/bin/python3.9', but future  
installation of another Python interpreter could cause a different interpreter to be discovered. See https://docs.ansible.com/ansible-core/2.20/reference\_appendices/interpreter\_discovery.html for more information.  
44.202.192.83 | SUCCESS => {  
  "ansible_facts": {  
    "discovered_interpreter_python": "/usr/bin/python3.9"  
  },  
  "changed": false,  
  "ping": "pong"  
}  
[WARNING]: Host '44.199.249.163' is using the discovered Python interpreter at '/usr/bin/python3.9', but future  
installation of another Python interpreter could cause a different interpreter to be discovered. See https://docs.ansible.com/ansible-core/2.20/reference\_appendices/interpreter\_discovery.html for more information.  
44.199.249.163 | SUCCESS => {  
  "ansible_facts": {  
    "discovered_interpreter_python": "/usr/bin/python3.9"  
  },  
  "changed": false,  
  "ping": "pong"  
}  
● @SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $
```

TASK 3:

```

GNU nano 7.2                               main.tf *
availability_zone = var.availability_zone
env_prefix = var.env_prefix
default_route_table_id = aws_vpc.myapp_vpc.default_route_table_id
}

module "myapp-webserver" {
  source = "./modules/webserver"
  env_prefix = var.env_prefix
  instance_type = var.instance_type
  availability_zone = var.availability_zone
  public_key = var.public_key
  my_ip = local.my_ip
  vpc_id = aws_vpc.myapp_vpc.id
  subnet_id = module.myapp-subnet.subnet.id

  count      = 3
  instance_suffix = count.index
}

```

outputs:

```

webserver_public_ips = [
  "44.199.249.163",
  "44.202.192.83",
  "44.223.82.95",
]
@SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $ cat <<EOF > hosts
[ec2]
44.199.249.163
44.202.192.83

[ec2:vars]
ansible_user=ec2-user
ansible_ssh_private_key_file=/home/codespace/.ssh/id_ed25519
ansible_ssh_common_args=' -o StrictHostKeyChecking=no'

[droplet]
44.223.82.95

[droplet:vars]

```

```

@SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $ ansible ec2 -i hosts -m ping
[WARNING]: Host '44.202.192.83' is using the discovered Python interpreter at '/usr/bin/python3.9', but future
installation of another Python interpreter could cause a different interpreter to be discovered. See https://do
cs.ansible.com/ansible-core/2.20/reference_appendices/interpreter_discovery.html for more information.
44.202.192.83 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3.9"
    },
    "changed": false,
    "ping": "pong"
}
[WARNING]: Host '44.199.249.163' is using the discovered Python interpreter at '/usr/bin/python3.9', but future
installation of another Python interpreter could cause a different interpreter to be discovered. See https://do
cs.ansible.com/ansible-core/2.20/reference_appendices/interpreter_discovery.html for more information.
44.199.249.163 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3.9"
    },
    "changed": false,
    "ping": "pong"
}
@SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $ 

```

```

@SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $ ansible 44.199.249.163 -i hosts -m ping
[WARNING]: Host '44.199.249.163' is using the discovered Python interpreter at '/usr/bin/python3.9', but future
installation of another Python interpreter could cause a different interpreter to be discovered. See https://do
cs.ansible.com/ansible-core/2.20/reference_appendices/interpreter_discovery.html for more information.
44.199.249.163 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3.9"
    },
    "changed": false,
    "ping": "pong"
}
@SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $ 

```

```

@SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $ ansible droplet -i hosts -m ping
[WARNING]: Host '44.223.82.95' is using the discovered Python interpreter at '/usr/bin/python3.9', but future i
nstallation of another Python interpreter could cause a different interpreter to be discovered. See https://do
cs.ansible.com/ansible-core/2.20/reference_appendices/interpreter_discovery.html for more information.
44.223.82.95 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3.9"
    },
    "changed": false,
    "ping": "pong"
}
@SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $ 

```

```

@sanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ ansible all -i hosts -m ping
]
[WARNING]: Host '44.199.249.163' is using the discovered Python interpreter at '/usr/bin/python3.9', but future
installation of another Python interpreter could cause a different interpreter to be discovered. See https://do
ocs.ansible.com/ansible-core/2.20/reference_appendices/interpreter_discovery.html for more information.
44.199.249.163 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3.9"
    },
    "changed": false,
    "ping": "pong"
}
[WARNING]: Host '44.202.192.83' is using the discovered Python interpreter at '/usr/bin/python3.9', but future
installation of another Python interpreter could cause a different interpreter to be discovered. See https://do
ocs.ansible.com/ansible-core/2.20/reference_appendices/interpreter_discovery.html for more information.
44.202.192.83 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3.9"
    },
    "changed": false,
    "ping": "pong"
}
@sanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $

```

TASK 4:

```

● @SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ cat <<EOF > ~/.ansible.cfg
[defaults]
host_key_checking = False
interpreter_python = /usr/bin/python3
EOF
● @SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ nano hosts
● @SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ ansible all -i hosts -m ping
44.202.192.83 | SUCCESS => {
    "changed": false,
    "ping": "pong"
}
44.223.82.95 | SUCCESS => {
    "changed": false,
    "ping": "pong"
}
44.199.249.163 | SUCCESS => {
    "changed": false,
    "ping": "pong"
}
● @SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ ls -la my-playbook.yaml
ls -la my-playbook.yaml
-rw-rw-rw- 1 codespace codespace 0 Jan 11 12:23 my-playbook.yaml
● @SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ cat <<EOF > my-playbook.yaml
---
- name: Configure nginx web server
  hosts: ec2
  become: true
  tasks:
    - name: install nginx and update cache
      yum:
        name: nginx
        state: present
        update_cache: yes

    - name: start nginx server
      service:
        name: nginx
        state: started
EOF

```

```

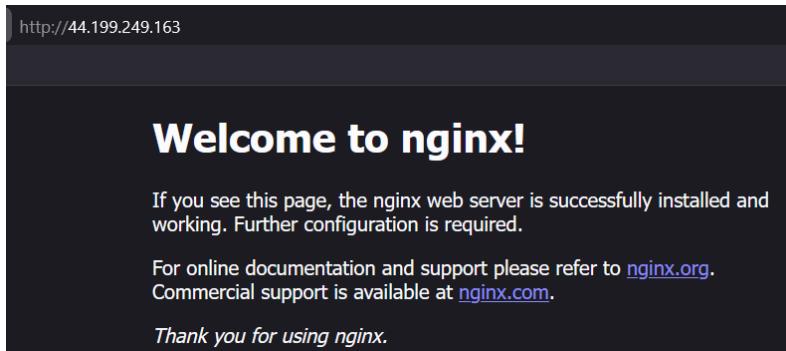
● @SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $ ansible-playbook -i hosts my-playbook.yaml
PLAY [Configure nginx web server] ****
TASK [Gathering Facts] ****
ok: [44.202.192.83]
ok: [44.199.249.163]

TASK [install nginx and update cache] ****
changed: [44.202.192.83]
changed: [44.199.249.163]

TASK [start nginx server] ****
changed: [44.202.192.83]
changed: [44.199.249.163]

PLAY RECAP ****
44.199.249.163 : ok=3    changed=2    unreachable=0    failed=0    skipped=0    rescued=0    ignore=0
44.202.192.83 : ok=3    changed=2    unreachable=0    failed=0    skipped=0    rescued=0    ignore=0
d=0

```



```

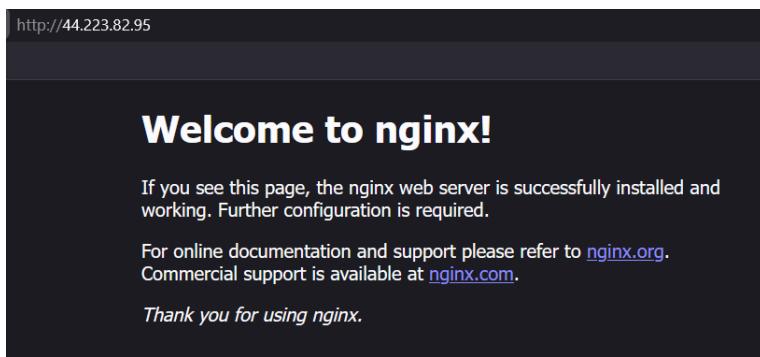
● @SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $ nano my-playbook.yaml
● @SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $ ansible-playbook -i hosts my-playbook.yaml
PLAY [Configure nginx web server] ****
TASK [Gathering Facts] ****
ok: [44.223.82.95]

TASK [install nginx and update cache] ****
changed: [44.223.82.95]

TASK [start nginx server] ****
changed: [44.223.82.95]

PLAY RECAP ****
44.223.82.95 : ok=3    changed=2    unreachable=0    failed=0    skipped=0    rescued=0    ignore=0
d=0

```



TASK 5:

```
● @SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $ touch ansible.cfg
ls -la ansible.cfg
-rw-rw-rw- 1 codespace codespace 0 Jan 11 12:29 ansible.cfg
● @SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $ cat <<EOF > ansible.cfg
[defaults]
host_key_checking=False
interpreter_python = /usr/bin/python3
EOF
○ @SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $
```

```
subnet_id = module.myapp_subnet.subnet.

    count          = 1
    instance_suffix = count.index
}
```

```
Apply complete! Resources: 0 added, 0 changed, 6 destroyed.

Outputs:

webserver_public_ips = [
  "44.199.249.163",
]
○ @SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $
```

```
GNU nano 7.2                                my-playbook.yaml
name: Configure nginx web server
hosts: nginx
become: true
tasks:
  - name: install nginx and update cache
    yum:
      name: nginx
      state: present
      update_cache: yes
  - name: install openssl
    yum:
      name: openssl
      state: present

  - name: start nginx server
    service:
      name: nginx
      state: started
```

```
● @SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $ ansible-playbook -i hosts my-playbook.yaml
[WARNING]: Ansible is being run in a world writable directory (/workspaces/cc_sanatariq_058/terraform_machine), ignoring it as an ansible.cfg source. For more information see https://docs.ansible.com/ansible/devel/references_appendices/config.html#cfg-in-world-writable-dir

PLAY [Configure nginx web server] ****
TASK [Gathering Facts] ****
ok: [44.199.249.163]

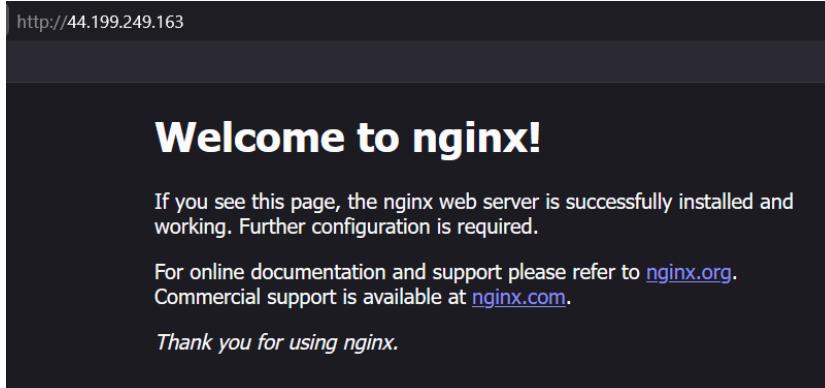
TASK [install nginx and update cache] ****
ok: [44.199.249.163]

TASK [install openssl] ****
ok: [44.199.249.163]

TASK [start nginx server] ****
changed: [44.199.249.163]

PLAY RECAP ****
44.199.249.163 : ok=4    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignore
d=0

○ @SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $
```



TASK 6:

```
● @SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ ansible-playbook -i hosts my-playbook.yaml
[WARNING]: Ansible is being run in a world writable directory (/workspaces/cc_sanatariq_058/terraform_machine),
ignoring it as an ansible.cfg source. For more information see https://docs.ansible.com/ansible/devel/referenc
e_appendices/config.html#cfg-in-world-writable-dir

sanatariq_058:ab5 [re nginx web server] ****
TASK [Gathering Facts] ****
ok: [44.199.249.163]

TASK [install nginx and update cache] ****
ok: [44.199.249.163]

TASK [install openssl] ****
ok: [44.199.249.163]

TASK [start nginx server] ****
ok: [44.199.249.163]

PLAY [Configure SSL certificates] ****

TASK [Gathering Facts] ****
ok: [44.199.249.163]

TASK [Create SSL private directory] ****
changed: [44.199.249.163]

TASK [Create SSL certs directory] ****
changed: [44.199.249.163]

TASK [Create SSL certs directory] ****
changed: [44.199.249.163]

TASK [Create SSL certs directory] ****
changed: [44.199.249.163]

TASK [Get IMDSv2 token] ****
ok: [44.199.249.163]

TASK [Get current public IP] ****
ok: [44.199.249.163]

TASK [Show current public IP] ****
ok: [44.199.249.163] => {
    "msg": "Public IP: 44.199.249.163"
}

TASK [Generate self-signed SSL certificate] ****
changed: [44.199.249.163]

PLAY RECAP ****
44.199.249.163 : ok=11  changed=3    unreachable=0   failed=0    skipped=0   rescued=0   ignore=0

● @SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $
```

```
@sanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ ssh ec2-user@$(terraform output -json w  
ebserver_public_ip) | jq -r '[.]' -i ~/ssh/id_ed25519 "sudo cat /etc/ssl/certs/selfsigned.crt"  
-----BEGIN CERTIFICATE-----  
MIIDQTCAsingAwIBAgIUTAP13qf0dgJ1ixCsnNg7f5se9ogwQDYKoZThvckNAQEL  
BQAWEQTEXBWBUAG1AeUeAwMjA084XNjHmWhNvTjYwMTExMTI0NzIxWhm  
MjcwMTEXtMT0NzIxhjJAZMrcwFQYDWDQDDA40NCax0TkujtQ5lje2BCCASiwDQYJ  
KoZIhvcNAQEBBQadggEPADCCAQcGEBAL41k81e7qt8KRBuss5mLgkvNesGwR+p  
89Mgg9nBuKHpt/etd1XfgPBrteShjbbmp8fSgi03Is7wcfBFMfIhtkYY75  
/FshnJ0DlJm7Hd1nRTQ0L1RQ02009Am4wfq1trk7F7b1YC1Cbby1BteqRj7m  
NT1C19pGd+Ayk0AypCKdFok8zRw5mrwjmshwD3117cb6+FejwkjwhlC4Nv5Lj8  
ApfbFTNTwg6d8wpvCQkvebZKtxqo1VG011eLtxdn3vfyuTEMpzSLu+Bgr/9I  
BR1lwzHjr+MaqoRjJiHoyeJO/EwIQu7r+Lgb09x2B8de8iim7zLkAwEAAoB  
gDB1BwgGA11dpgQmWB0tWeBeb4315p+vyngZgD1NDL5GTafBgnHMSMEGDAwlg8Tw  
08eb4h3i5p+vymGzD1NDL5GTafBgnHREEDCAGhwQsx/mjMAKgA1uEdwQCMAAw  
CwYDVR0PEAdQmBg/IBMGAludJQ0MA0gCCsGAQFBwBMA0gCSqS1b3DQEbwUA  
A1A1BAQauL77rykbePzKahIAtRvr1Yrsi1nck+KoAa6K41BY8MrGgtfCz/Csn  
z1t19Hq0JwdunDevJy6gb95i1zAbtrUHs9GtF7yEmyeSptOle4LzRdtmRk02D  
NSfGezQJ2P7mIqGyMq1Lg+80A9yjh1ugzJ1HxLkuDzfcv8WMBkgMo1g0fFRS  
Kq2NLkBorTUPuNT1JMVZKLPSH3vAFZ-hscObSX5DdcCuWo/B1x46fE62EMYtWk  
t1nXDRtG3tkw7ftkhqzKSL1wLlv87pj2TH1PwZ8gPmQN0G15RN1jxe3hcB+2q  
g19rLmAvf+CqaBD1RvEqWmltyYo/  
-----END CERTIFICATE-----  
@SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ [ ]  
  
● @SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ ssh ec2-user@$(terraform output -json w  
ebserver_private_ip) | jq -r '[.]' -i ~/ssh/id_ed25519 "sudo cat /etc/ssl/private/selfsigned.key"  
-----BEGIN PRIVATE KEY-----  
MIIEVQJBADANBgkqhGiGwOBQAFMCSwbg5SjAgEa01BAnBwNCZPw0u6E/Cq  
wBr0Z1A1Gh+KuLkfqPTIPYCbWb1h6xYu/3k3zv324nZkxhRuTV22zKfh80CKNy  
L08M1BQTH1BzGGE1Tz0245tA5zux3zTU0uBiypU01ng7vQufn6qTbyau  
29A1GwcpQbxGqKyzSu21mfawefn1pMgAwInraPCT7kecK45q1CA95S0wmvh  
X08K5181SwDwOsFA00X0B6l3wtFx2m5h3rtcUK1erJ5108zK2973  
skd0N61uyVgYka/SAUZLSL9M46/jkmkE1V4Dr9tVxMKSE0/4J4UPCRtgXX  
vnpkR957aqBAAEfgAEASEYU17jTpTM1Hk2tW0aMhrMzQ511j7Wbfjx0sHT  
y2Kg16v50l0hqC01NgYtHUKzDeseSAULm0ErCtQcaLSp2VmD02chxsL6kFj+o  
s3wdUaPUQnfZ05N1hlehiYTSJ1T9vzgEpnPRVC62UL3ak6PfkZcnMuItgodp0r5  
qjt14s+Q360GeY6g.MJ0A1m0Q1Xp4cJ6lmgX1/9kUIC12y6ai1C61mpzcr  
VTKhPwlyLusHrkyyxDpuJyuphrX25fB/gM0u2BF91rFBMyAHq0d7j  
rtzgXQ0Rkt0npD2qprQmYw3U/kxpOYs1ucmNfEQkBgQ03s)j7Oty21zl0lwP  
g/Fb/ /h0ny1gyZhox6gcZdSgny/Ay/HmnzicDkzB0llMvtTQCKKKM81h  
yapKlnJukcuRtZxJdOpdDnhrj3s7msoFlce59oepzg0mNk16n/pCfGb  
13Nfx3P7xZc1xw18UgoPxxBqB0d0e/84K1RB D2/gox5kwQzWmKre0LOJERN  
X25a4RJ3w1zofB1nLyGXM0MAtCmtnMEB01111zupGf54ak7ckw8A2uRmrxle  
S/2enNb311quQ1qdBmfm81-/S0Qmame4n7V7ywyQc/4w6lJe8dltBcpnhDx73  
SwQo9BqBqBqBqBqBqBqBqBqBqBqBqBqBqBqBqBqBqBqBqBqBqBqBqBqB  
T2ZU0JUcxJ7dzL5xZC0ZMMPh0paZ1c1a1Z25xVh80x1NP185CKmB1k687pFq5  
918Cw90Q046H9Jh1m1v21tbzHugmthHmMsheo9+79J2xCatA0gA6lgy  
zaPm7zalqfjJrV3JdOpdDnhrj3s7msoFlce59oepzg0mNk16n/pCfGb  
1145vw8x0f3b525wmsVxxJfxPStCgWmuFg7QfZxPMQ11zUmIAYX03YhEH  
K0fHNMk0FMk/f5f7cyuz/ /0mGJgxP1f5f0GyE4BmDsy1lwkLhAjroh  
By1J1h7r+Lw1s1JwEwWvssVylWg9yW9y2022LBzNg1/mjPAxJEE4M fmhCj86/tg  
wjY655f+jwqlCpkv6pFwLmCey4q/Gaq5d4GMk6/ja1f6xdhyuasmt3hbyEdpA4w  
Cx2w1l9eqNSPGdqoq0w04m=-----END PRIVATE KEY-----  
@SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ [ ]
```

TASK 7:

```
● @SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $ mkdir -p files templates
touch files/index.php templates/nginx.conf.j2
ls -R
.:
ansible.cfg hosts main.tf my-playbook.yaml templates terraform.tfstate.backup variables.tf
files locals.tf modules outputs.tf      terraform.tfstate terraform.tfvars

./files:
index.php

./modules:
subnet webserver

./modules/subnet:
main.tf outputs.tf variables.tf

./modules/webserver:
main.tf outputs.tf variables.tf

./templates:
nginx.conf.j2
```

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS ⚡ python -m terraform_machine ✎ + × ☰ ... | ☰

① @Sanatariq05 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ ansible-playbook -i hosts my-playbook.yml
[WARNING]: Ansible is being run in a world writable directory (/workspaces/cc_sanatariq_058/terraform_machine),
ignoring it as an ansible.cfg source. For more information see https://docs.ansible.com/ansible-devel/referenc
e_appendices/config.html#cfg-in-world-writable-dir

PLAY [Configure nginx web server] ****
TASK [Gathering Facts] ****
ok: [44.199.249.163]

TASK [install nginx and update cache] ****
ok: [44.199.249.163]

TASK [install openssl] ****
ok: [44.199.249.163]

TASK [start nginx server] ****
ok: [44.199.249.163]

PLAY [Configure SSL certificates] ****
TASK [Gathering Facts] ****
ok: [44.199.249.163]

TASK [Create SSL private directory] ****
ok: [44.199.249.163]

TASK [Create SSL certs directory] ****
ok: [44.199.249.163]
```

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS ⚡ bash - terraform_machine + × ☰ ... [x]
@SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ ansible-playbook -i hosts my-playbook.yaml

TASK [Get current public IP] *****
ok: [44.199.249.163]

TASK [Show current public IP] *****
ok: [44.199.249.163] => {
    "msg": "Public IP: 44.199.249.163"
}

TASK [Generate self-signed SSL certificate] *****
ok: [44.199.249.163]

PLAY [Deploy Nginx website and configuration files] *****

TASK [Gathering Facts] *****
ok: [44.199.249.163]

TASK [install php-fpm and php-curl] *****
changed: [44.199.249.163]

TASK [Copy website files] *****
changed: [44.199.249.163]

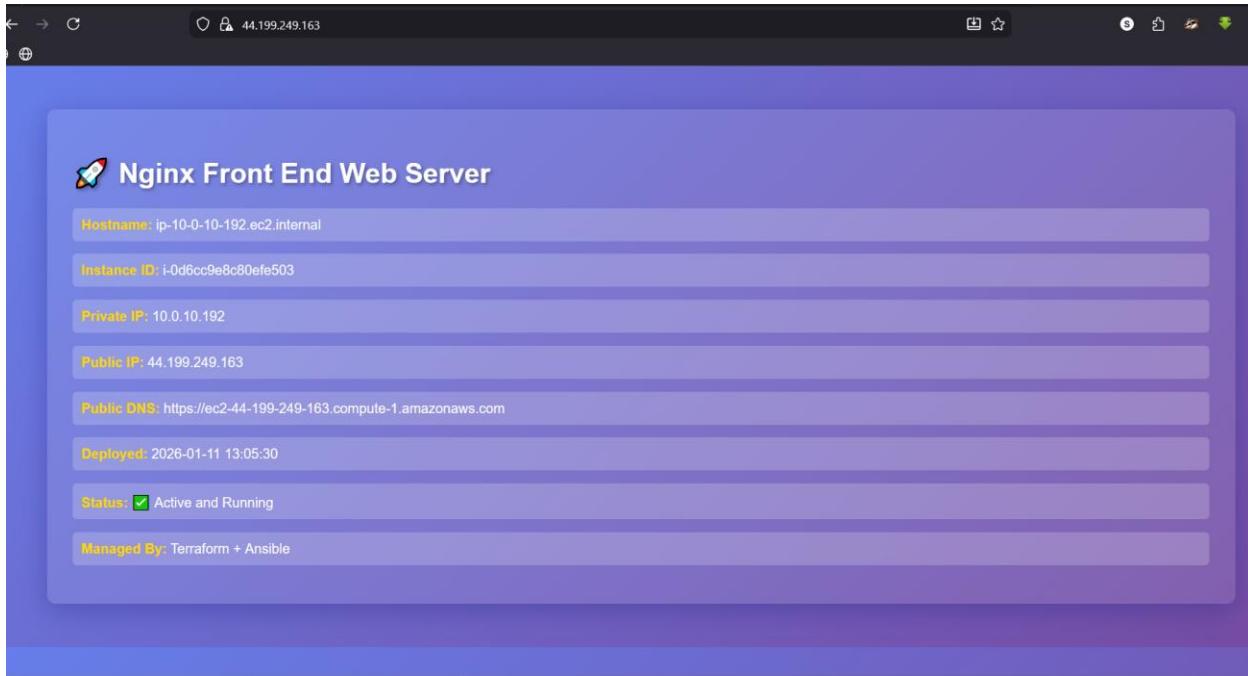
TASK [Copy nginx.conf template] *****
changed: [44.199.249.163]

TASK [Restart nginx] *****
changed: [44.199.249.163]
```

```
TASK [Start and enable php-fpm] *****
changed: [44.199.249.163]

PLAY RECAP *****
44.199.249.163 : ok=17   changed=5    unreachable=0   failed=0    skipped=0   rescued=0   ignore=0

○ @SanaTariq205 → /workspaces/cc_sanatariq_058/terraform machine (main) $
```



TASK 8:

```
module.myapp_subnet.aws_subnet.myapp_subnet_1: Destroying... [id=subnet-0e0f043343434343]
module.myapp_webserver[0].aws_key_pair.ssh-key: Destruction complete after 0s
module.myapp_subnet.aws_subnet.myapp_subnet_1: Destruction complete after 1s
module.myapp_webserver[0].aws_security_group.web_sg: Destruction complete after 1s
aws_vpc.myapp_vpc: Destroying... [id=vpc-05fc32c3df8f63e21]
aws_vpc.myapp_vpc: Destruction complete after 1s

Destroy complete! Resources: 7 destroyed.
○ @SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $
```

```
Apply complete! Resources: 7 added, 0 changed, 0 destroyed.
```

```
Outputs:
```

```
webserver_public_ips = [
  "3.80.144.123",
]
```

```
○ @SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $ cat <<EOF > hosts
[docker_servers]
3.80.144.123

[docker_servers:vars]
ansible_user=ec2-user
ansible_ssh_private_key_file=/home/codespace/.ssh/id_ed25519
EOF
○ @SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine (main) $
```

```
@SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ ansible-playbook -i hosts my-playbook.yml
[WARNING]: Ansible is being run in a world writable directory (/workspaces/cc_sanatariq_058/terraform_machine), ignoring it as an ansible.cfg source. For more information see https://docs.ansible.com/ansible/devel/references_appendices/config.html#cfg-in-world-writable-dir

PLAY [Configure Docker] ****
TASK [Gathering Facts] ****
ok: [3.80.144.123]

TASK [install docker and update cache] ****
changed: [3.80.144.123]

PLAY [Install Docker Compose] ****
TASK [Gathering Facts] ****
ok: [3.80.144.123]

TASK [create docker cli-plugins directory] ****
changed: [3.80.144.123]

TASK [install docker-compose] ****
changed: [3.80.144.123]

TASK [View architecture of the system] ****
ok: [3.80.144.123] => {
    "msg": "System architecture of 3.80.144.123 is x86_64"
}
}
```

```
} ****

TASK [Alternate method to view architecture of the system] ****
ok: [3.80.144.123] => {
    "msg": "System architecture of 3.80.144.123 is x86_64"
}

TASK [restart docker service] ****
changed: [3.80.144.123]

PLAY RECAP ****
3.80.144.123 : ok=8    changed=4    unreachable=0    failed=0    skipped=0    rescued=0    ignore=0
```

```
@SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ ssh ec2-user@$(terraform output -json webserver_public_ip | jq -r '[.[]]') -i ~/ssh/id_ed25519 "sudo docker ps"
CONTAINER ID        IMAGE               COMMAND             CREATED            STATUS              PORTS               NAMES
@SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $
```

TASK 9:

```
become: true ...
@SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ ansible-playbook -i hosts my-playbook.yml
PLAY [Configure Docker] ****
TASK [Gathering Facts] ****
ok: [100.52.173.81]

TASK [install docker and update cache] ****
changed: [100.52.173.81]

PLAY [Install Docker Compose] ****
TASK [Gathering Facts] ****
ok: [100.52.173.81]

TASK [create docker cli-plugins directory] ****
changed: [100.52.173.81]

TASK [install docker-compose] ****
changed: [100.52.173.81]

TASK [View architecture of the system] ****
ok: [100.52.173.81] => {
    "msg": "System architecture of 100.52.173.81 is x86_64"
}

TASK [Alternate method to view architecture of the system] ****
ok: [100.52.173.81] => {
    "msg": "System architecture of 100.52.173.81 is x86_64"
```

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
@SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ ansible-playbook -i hosts my-playbook.yml
ans1
TASK [reconnect to apply group changes] ****
TASK [verify docker access] ****
ok: [100.52.173.81]

TASK [display docker ps output] ****
ok: [100.52.173.81] => {
    "docker_ps.stdout": "CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES"
}

PLAY [Deploy Docker Containers] ****

TASK [Gathering Facts] ****
ok: [100.52.173.81]

TASK [check if docker-compose file exists] ****
ok: [100.52.173.81]

TASK [copy docker-compose file] ****
changed: [100.52.173.81]

TASK [deploy containers using docker-compose] ****
ok: [100.52.173.81]

PLAY RECAP ****
100.52.173.81 : ok=16 changed=6 unreachable=0 failed=0 skipped=0 rescued=0 ignore=0

@SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ █

```

```

        cidr_blocks = [ "0.0.0.0/0" ]
    }
    ingress {
        from_port   = 3000
        to_port     = 3000
        protocol   = "tcp"
        cidr_blocks = ["0.0.0.0/0"]
    }
}

```

Not Secure http://100.52.173.81:3000

Initial Configuration

If you run Gitea inside Docker, please read the [documentation](#) before changing any settings.

Database Settings

Gitea requires MySQL, PostgreSQL, MSSQL, SQLite3 or TiDB (MySQL protocol).

Database Type *	PostgreSQL
Host *	db:5432
Username *	gitea
Password *	*****
Database Name *	gitea
SSL *	Disable
Schema	Leave blank for database default ("public").

General Settings

Site Title *	Gitea: Git with a cup of tea
You can enter your company name here.	

Register

You are registering the first account in the system, which has administrator privileges. Please carefully remember your username and password. If you forget the username or password, please refer to the Gitea documentation to recover the account.

Username *

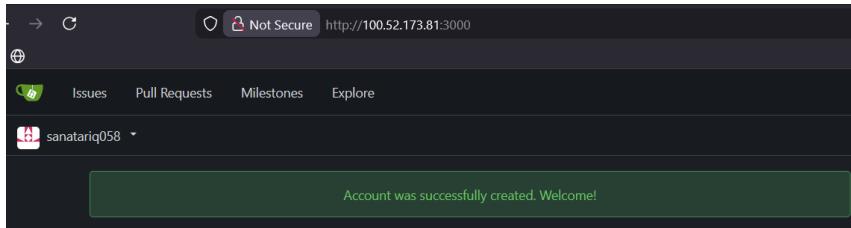
Email Address *

Password *

This connection is not secure. Logins entered here could be compromised.
[Learn More](#)

or

 [Sign in with OpenID](#)



TASK 10:

```
● @Sanatariq058 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ cat <<'EOF' > temp_playbook.yaml
- name: Wait for some time to ensure system readiness
  hosts: all
  gather_facts: false
  tasks:
    - name: Wait 300 seconds for port 22 to become open
      wait_for:
        port: 22
        host: "{{ inventory_hostname }}"
        delay: 10
        timeout: 300
      delegate_to: localhost
EOF
● @Sanatariq058 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ cat my-playbook.yaml >> temp_playbook.yaml
● @Sanatariq058 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ mv temp_playbook.yaml my-playbook.yaml
● @Sanatariq058 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ cat my-playbook.yaml >> temp_playbook.yaml
● @Sanatariq058 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ mv temp_playbook.yaml my-playbook.yaml
● @Sanatariq058 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ 
```

```
module.myapp-webserver[0].aws_key_pair.ssh-key: Destruction
module.myapp-subnet.aws_subnet.myapp_subnet_1: Destruction
module.myapp-webserver[0].aws_security_group.web_sg: Destruction
aws_vpc.myapp_vpc: Destroying... [id=vgw-0d08316fd5a2e80b4]
aws_vpc.myapp_vpc: Destruction complete after 1s

Destroy complete! Resources: 7 destroyed.
```

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
@SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ terraform apply -auto-approve
null_resource.configure_server (local-exec): TASK [Gathering Facts]
null_resource.configure_server: Still creating... [02m20s elapsed]
null_resource.configure_server (local-exec): ok: [3.226.248.192]

null_resource.configure_server (local-exec): TASK [copy docker-compose file]
null_resource.configure_server: Still creating... [02m30s elapsed]
null_resource.configure_server (local-exec): ok: [3.226.248.192]

null_resource.configure_server (local-exec): TASK [deploy containers using docker-compose]
null_resource.configure_server: Still creating... [02m40s elapsed]
null_resource.configure_server (local-exec): ok: [3.226.248.192]

null_resource.configure_server (local-exec): PLAY RECAP
null_resource.configure_server (local-exec):   3.226.248.192 : ok=27    changed=4    unreachable=0
          failed=0   skipped=0   rescued=0   ignored=0

null_resource.configure_server: Creation complete after 2m48s [id=5905489508129150962]

Apply complete! Resources: 1 added, 0 changed, 1 destroyed.

Outputs:

webserver_public_ips = [
  "3.226.248.192",
]

```

TASK 11/12:

```

@SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ nano main.tf
@SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ nano outputs.tf
@SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ $(which python) -m pip install boto3 boto3core
Collecting boto3
  Downloading boto3-1.42.25-py3-none-any.whl.metadata (6.8 kB)
Collecting botocore
  Downloading botocore-1.42.25-py3-none-any.whl.metadata (5.9 kB)
Collecting jmespath<2.0.0,>=0.7.1 (from boto3)
  Downloading jmespath-1.0.1-py3-none-any.whl.metadata (7.6 kB)
Collecting s3transfer<0.17.0,>=0.16.0 (from boto3)
  Downloading s3transfer-0.16.0-py3-none-any.whl.metadata (1.7 kB)
Requirement already satisfied: python-dateutil<3.0.0,>=2.1 in /home/codespace/.local/lib/python3.12/site-packages (from boto3)
Requirement already satisfied: urllib3!=2.2.0,<3,>=1.25.4 in /home/codespace/.local/lib/python3.12/site-packages (from botocore)
Requirement already satisfied: six>=1.5 in /home/codespace/.local/lib/python3.12/site-packages (from python-dateutil<3.0.0,>=2.1>botocore)
  Downloading s3transfer-0.16.0-py3-none-any.whl.metadata (1.7 kB)
Requirement already satisfied: python-dateutil<3.0.0,>=2.1 in /home/codespace/.local/lib/python3.12/site-packages (from botocore)
Requirement already satisfied: urllib3!=2.2.0,<3,>=1.25.4 in /home/codespace/.local/lib/python3.12/site-packages (from botocore)
Requirement already satisfied: six>=1.5 in /home/codespace/.local/lib/python3.12/site-packages (from python-dateutil<3.0.0,>=2.1>botocore)
  Downloading boto3-1.42.25-py3-none-any.whl (140 kB)
  Downloading botocore-1.42.25-py3-none-any.whl (14.6 MB)
  Downloading jmespath-1.0.1-py3-none-any.whl (20 kB)
  Downloading s3transfer-0.16.0-py3-none-any.whl (80 kB)
Installing collected packages: jmespath, botocore, s3transfer, boto3
Successfully installed boto3-1.42.25 botocore-1.42.25 jmespath-1.0.1 s3transfer-0.16.0
@SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ terraform apply -auto-approve

```

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
@SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ terraform apply -auto-approve
module.myapp-webserver-prod.aws_instance.myapp-server: Creating...
module.myapp-webserver[0].aws_instance.myapp-server: Still destroying... [id=i-042665d1653ebc6a8, 00m10s elapsed]
module.myapp-webserver[0].aws_instance.myapp-server: Still creating... [00m10s elapsed]
module.myapp-webserver[0].aws_instance.myapp-server: Still destroying... [id=i-042665d1653ebc6a8, 00m20s elapsed]
module.myapp-webserver[0].aws_instance.myapp-server: Creation complete after 15s [id=i-02410dcad0d11f096]
module.myapp-webserver-prod.aws_instance.myapp-server: Creation complete after 16s [id=i-0f19e337b1d1bf9f9]
module.myapp-webserver[0].aws_instance.myapp-server: Still destroying... [id=i-042665d1653ebc6a8, 00m30s elapsed]
module.myapp-webserver[0].aws_instance.myapp-server: Still destroying... [id=i-042665d1653ebc6a8, 00m40s elapsed]
module.myapp-webserver[0].aws_instance.myapp-server: Still destroying... [id=i-042665d1653ebc6a8, 00m50s elapsed]
module.myapp-webserver[0].aws_instance.myapp-server: Still destroying... [id=i-042665d1653ebc6a8, 01m00s elapsed]
module.myapp-webserver[0].aws_instance.myapp-server: Destruction complete after 1m3s
module.myapp-webserver[0].aws_key_pair.ssh-key: Destroying... [id=dev-serverkey-0]
module.myapp-webserver[0].aws_security_group.web_sg: Destroying... [id=sg-0810fe7791e3e2f62]
module.myapp-webserver[0].aws_key_pair.ssh-key: Destruction complete after 0s
module.myapp-webserver[0].aws_security_group.web_sg: Destruction complete after 1s

Apply complete! Resources: 6 added, 0 changed, 4 destroyed.

Outputs:

prod_webserver_public_ip = "100.52.214.36"
webserver_public_ip = "98.92.182.171"
@SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $

```

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS python - terraform_machine + - x ... @SanaTariq205 ~/workspaces/cc_sanatariq_058/terraform_machine (main) $ ansible-inventory -i inventory_aws_ec2.yaml --graph @all:
|- @ungrouped:
|- @aws_ec2:
| |--ec2-98-92-182-171.compute-1.amazonaws.com
| |--ip-10-0-10-122.ec2.internal
| |--ip-10-0-1-212.ec2.internal
| |--ip-10-0-10-52.ec2.internal
| |--ip-10-0-1-34.ec2.internal
| |--ec2-100-52-214-36.compute-1.amazonaws.com
|- @tag_Name_dev_ec2_instance_dev_0:
| |--ec2-98-92-182-171.compute-1.amazonaws.com
|- @tag_Name_dev_ec2_instance_1:
| |--ip-10-0-10-122.ec2.internal
|- @tag_Environment_lab:
| |--ip-10-0-1-212.ec2.internal
| |--ip-10-0-1-34.ec2.internal
|- @tag_Name_web_server_1:
| |--ip-10-0-1-212.ec2.internal
|- @tag_Role_web:
| |--ip-10-0-1-212.ec2.internal
| |--ip-10-0-1-34.ec2.internal
|- @tag_Name_dev_ec2_instance_9:
| |--ip-10-0-10-52.ec2.internal
|- @tag_Name_web_server_0:
| |--ip-10-0-1-34.ec2.internal
|- @tag_Name_prod_ec2_instance_prod_0:
| |--ec2-100-52-214-36.compute-1.amazonaws.com
```

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS ⬤ bash - terraform_machine + × ⬤ ... ⬤ ⬤

@sanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ ansible-playbook -i inventory_aws_ec2.yml
aml_my-playbook.yaml --limit tag_Name_dev_ec2_instance_dev_0
TASK [download docker-compose plugin] *****
changed: [ec2-98-92-182-171.compute-1.amazonaws.com]

PLAY [Adding user to docker group] *****
*****
```

TASK [Gathering Facts] *****
ok: [ec2-98-92-182-171.compute-1.amazonaws.com]

TASK [add user to docker group] *****
changed: [ec2-98-92-182-171.compute-1.amazonaws.com]

TASK [reconnect to apply group changes] *****

PLAY [Deploy Docker Containers] *****

TASK [Gathering Facts] *****
ok: [ec2-98-92-182-171.compute-1.amazonaws.com]

TASK [copy docker-compose file] *****
changed: [ec2-98-92-182-171.compute-1.amazonaws.com]

TASK [deploy containers using docker-compose] *****
changed: [ec2-98-92-182-171.compute-1.amazonaws.com]

PLAY RECAP *****
ec2-98-92-182-171.compute-1.amazonaws.com : ok=27 changed=17 unreachable=0 failed=0 skipped=0 resc
ued=0 ignored=0

○ @sanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) \$

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS ⚡ bash - terraform_machine + ⌂ ⌂ ⌂ ... | x

@sanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ ansible-playbook -i inventory_aws_ec2.yaml my-playbook.yaml --limit tag_Name_prod_ec2_instance_prod_0
TASK [download docker-compose plugin] *****
changed: [ec2-100-52-214-36.compute-1.amazonaws.com]

PLAY [Adding user to docker group] *****
TASK [Gathering Facts] *****
ok: [ec2-100-52-214-36.compute-1.amazonaws.com]

TASK [add user to docker group] *****
changed: [ec2-100-52-214-36.compute-1.amazonaws.com]

TASK [reconnect to apply group changes] *****
PLAY [Deploy Docker Containers] *****
TASK [Gathering Facts] *****
ok: [ec2-100-52-214-36.compute-1.amazonaws.com]

TASK [copy docker-compose file] *****
changed: [ec2-100-52-214-36.compute-1.amazonaws.com]

TASK [deploy containers using docker-compose] *****
changed: [ec2-100-52-214-36.compute-1.amazonaws.com]

PLAY RECAP *****
ec2-100-52-214-36.compute-1.amazonaws.com : ok=27    changed=17   unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```

TASK 13:

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS bash - terraform_machine + | x
@SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ terraform apply -auto-approve
module.myapp-webserver[0].aws_instance.myapp-server: Creating...
module.myapp-webserver.aws_instance.myapp-server: Still destroying... [id=i-02410dcaddd1f096, 00m10s elapsed]
module.myapp-webserver-prod.aws_instance.myapp-server: Still destroying... [id=i-0f19e6337bd1dbfb9, 00m10s elapsed]
sed]
module.myapp-webserver[0].aws_instance.myapp-server: Still creating... [00m10s elapsed]
module.myapp-webserver[0].aws_instance.myapp-server: Creation complete after 15s [id=i-0fb60903cc8156ed8]
module.myapp-webserver-prod.aws_instance.myapp-server: Still destroying... [id=i-0f19e6337bd1dbfb9, 00m20s elapsed]
sed]
module.myapp-webserver.aws_instance.myapp-server: Still destroying... [id=i-02410dcaddd1f096, 00m20s elapsed]
module.myapp-webserver-prod.aws_instance.myapp-server: Still destroying... [id=i-0f19e6337bd1dbfb9, 00m30s elapsed]
module.myapp-webserver-prod.aws_instance.myapp-server: Still destroying... [id=i-0f19e6337bd1dbfb9, 00m30s elapsed]
module.myapp-webserver-prod.aws_instance.myapp-server: Destruction complete after 32s
module.myapp-webserver-prod.aws_key_pair.ssh-key: Destroying... [id=prod-server-key-prod-0]
module.myapp-webserver-prod.aws_security_group.web_sg: Destroying... [id=sg-0880be7b16dc34ea23]
module.myapp-webserver-prod.aws_key_pair.ssh-key: Destruction complete after 0s
module.myapp-webserver-prod.aws_security_group.web_sg: Destruction complete after 1s
module.myapp-webserver.aws_instance.myapp-server: Still destroying... [id=i-02410dcaddd1f096, 00m40s elapsed]
module.myapp-webserver.aws_instance.myapp-server: Destruction complete after 42s
module.myapp-webserver.aws_key_pair.ssh-key: Destroying... [id=dev-server-key-dev-0]
module.myapp-webserver.aws_security_group.web_sg: Destroying... [id=sg-0253864bcd5abee77]
module.myapp-webserver.aws_key_pair.ssh-key: Destruction complete after 1s
module.myapp-webserver.aws_security_group.web_sg: Destruction complete after 1s

Apply complete! Resources: 3 added, 0 changed, 6 destroyed.

Outputs:

webservice_public_ip = "44.200.198.68"
@SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ █

@SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine (main) $ mkdir -p ansible/inventory ansible/roles/
s
cd ansible
@SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine/ansible (main) $ ansible-galaxy role init roles/
nginx
ansible_galaxy role init roles/ssl
ansible_galaxy role init roles/webapp
- Role roles/nginx was created successfully
- Role roles/ssl was created successfully
- Role roles/webapp was created successfully
@SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine/ansible (main) $ cat <<EOF > ansible.cfg
[defaults]
host_key_checking=False
interpreter_python = /usr/bin/python3
EOF
@SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine/ansible (main) $ cat <<EOF > inventory/hosts
[nginx]
\$!(terraform -chdir=. output -json webserver_public_ip | jq -r '[.][]')
EOF
@SanaTariq205 → /workspaces/cc_sanatariq_058/terraform_machine/ansible (main) $ █
```

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS ⌂ bash - ansible + □ 🗑 ... | ⌂

- name: Create SSL directory
  file: ...

● @SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine/ansible (main) $ ANSIBLE_ROLES_PATH=../roles ANSIBLE_INVENTORY_ENABLED=ini ansible-playbook -i inventory/hosts my-playbook.yaml

PLAY [Deploy NGINX Web Stack with SSL and PHP] *****

TASK [Gathering Facts] *****
ok: [44.200.198.68]

TASK [ssl : Create SSL directory] *****
changed: [44.200.198.68]

TASK [ssl : Generate self-signed SSL certificate] *****
changed: [44.200.198.68]

TASK [webapp : Install PHP and Nginx] *****
changed: [44.200.198.68]

TASK [webapp : Deploy custom index.php] *****
changed: [44.200.198.68]

TASK [webapp : Start services] *****
changed: [44.200.198.68] => (item=nginx)
changed: [44.200.198.68] => (item=php-fpm)

PLAY RECAP *****
44.200.198.68 : ok=6    changed=5    unreachable=0    failed=0    skipped=0    rescued=0    ignore=0

● @SanaTariq205 →/workspaces/cc_sanatariq_058/terraform_machine/ansible (main) $
```

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
@SanaTariq205 → /workspaces/cc_sanatariq_055/terraform_machine/ansible (main) $ ANSIBLE_ROLES_PATH=.,roles ANSIBLE_INVENTORY_ENABLED=ini ansible-playbook -i inventory/hosts my-playbook.yaml

TASK [ssl : Create SSL directory] ****
ok: [44.200.198.68]

TASK [ssl : Generate self-signed SSL certificate] ****
ok: [44.200.198.68]

TASK [webapp : Install Nginx and PHP] ****
ok: [44.200.198.68]

TASK [webapp : Create Nginx SSL Configuration] ****
changed: [44.200.198.68]

TASK [webapp : Restart Nginx and PHP-FPM] ****
changed: [44.200.198.68] => (item=nginx)
changed: [44.200.198.68] => (item=php-fpm)

PLAY RECAP ****
44.200.198.68 : ok=6    changed=2    unreachable=0    failed=0    skipped=0    rescued=0    ignore=0

● @SanaTariq205 → /workspaces/cc_sanatariq_055/terraform_machine/ansible (main) $ curl -kI https://44.200.198.68
HTTP/1.1 200 OK
Server: nginx/1.28.0
Date: Sun, 11 Jan 2026 16:50:09 GMT
Content-Type: text/html; charset=UTF-8
Connection: keep-alive
```

