ASSIGNMENT

OBJECTIVE :

Sending a HTTP request to web node should return response from 2 application servers in round robin mechanism using Cloud Formation (YAML).

METHODOLOGY :

Below mentioned steps were followed to achieve the end result:

- Using Cloud Formation Template launched 3 t2.micro EC2 instances.
- Also, a new inbound rule was added in the security group enabling port 80 and 22.
- Apache2 web server was installed in 2 EC2 instances and package was updated. In addition to this Index.html file was edited with description as “Hello, Welcome to Webpage1 “and “Hello, Welcome to Webpage2 “respectively in both the instances.
- Below commands were used to perform the above actions using user-data i.e bootstrap script-

  apt update -y
  apt install -y apache2
  cd /var/www/html
  rm index.html
  echo "Hello, Welcome to Webpage1" > index.html
- Nginx was installed in the third EC2 instance. Then configured it for load balancing between other 2 EC2 instances which was running apache2 web server. All we need to do is set up Nginx with instructions for which type of connections to listen to and where to forward the traffic.
- Login to Web server machine, edit the default file using the below command :
  sudo vi /etc/nginx/sites-available/default
- And paste the below code to configure Nginx as load balancer using private IPs of 2 application servers:

```
upstream www {
      server 172.31.7.122;
      server 172.31.12.128;
}
server {
      listen 80;
      server_name example.atlantic.net;
      location / {
        proxy_pass http://www;
      }
}
```

- Restart Nginx using the below command:
  sudo service nginx restart

ASSIGNMENT

DEPLOYMENT:

Above mentioned methodology is automated using Cloud Formation is used to author cloud formation template. Therefore, below instructions has to be followed to deploy the code:

- Go to AWS console and click on cloud formation (under management and governance) and create a cloud formation stack by uploading the template file by specifying the location of your template file, such as a path on your local computer.
- Provide a stack name and if the template contains parameters, you can specify values when you create the stack. In this case we need to provide key name and then click on ‘’Next” and then create stack.
- AWS Cloud Formation provisions and configures resources by making calls to the AWS services that are described in your template. After all the resources have been created, AWS Cloud Formation reports that your stack has been created.
- Login to web server wherein Nginx is already installed using Cloyud formation and paste the code mentioned under methodology in the above location and restart Nginx as instructed
- You can click on the Web server URL i.e. the public IP of web server wherein Nginx is installed and get responses from the two application servers in round robin mechanism.