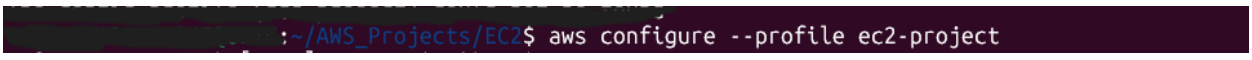
AWS EC2 Instance Launch Process

EC2 Policy Creation and Configuration

To begin the process, an ec2-policy.json file was created containing the necessary EC2 permissions. These permissions included actions such as RunInstances, CreateTags, and DescribeInstances among others, ensuring the appropriate level of access for managing EC2 resources.

Profile Configuration and Error Resolution

aws configure --profile ec2-project



IAM Policy Creation and Attachment

An IAM policy named EC2LaunchPolicy was created using the AWS CLI:

- aws iam create-policy --policy-name EC2LaunchPolicy --policy-document file://ec2-policy.json --profile admin

```
/AWS_Projects/EC2$ aws iam create-policy
    --policy-name EC2LaunchPolicy \
    --policy-document file://ec2-policy.json \
```

The policy was successfully created with the following details:

- PolicyName: EC2LaunchPolicy
- PolicyId: <policyID>
- Arn: arn:aws:iam::<AccountID>:policy/EC2LaunchPolicy

To attach the policy to the user, the account ID variable was set, and the policy was attached using:

- ACCOUNT_ID=$(aws sts get-caller-identity --profile admin --query Account --output text)
- aws iam attach-user-policy --user-name ec2-project-user --policy-arn arn:aws:iam::${ACCOUNT_ID}:policy/EC2LaunchPolicy --profile admin

```
AWS_Projects/EC2$ aws iam attach-user-policy
    --user-name ec2-project-user \
    --policy-arn arn:aws:iam::${ACCOUNT_ID}:policy/EC2LaunchPolicy
```

Key Pair Creation and Permissions

A key pair named http-ssh-key was created for secure SSH access to the EC2 instance:

```
/AWS_Projects/EC2$  aws ec2 create-key-pair \
    --key-name http-ssh-key \
    --query 'KeyMaterial' \
    --output text \
```

Permissions for the key file were set to ensure security:

- chmod 400 <PEMFILE>

Instance Launch and Verification

The EC2 instance was launched via the CLI, using http_web.py as user data. After launch, the status was checked and confirmed that instance was running, with the assigned IP 98.80.123.222.

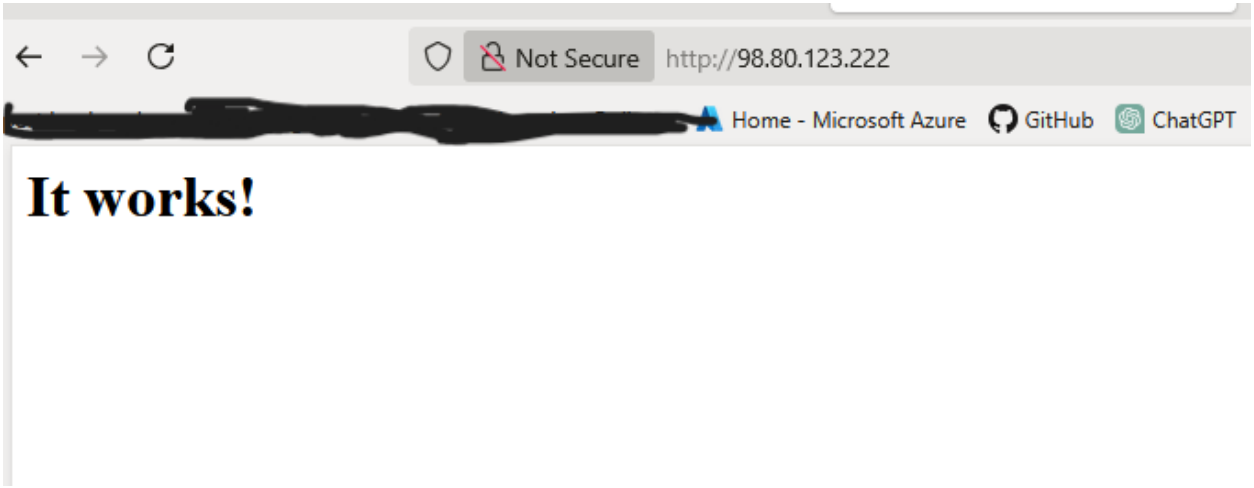
Testing Instance Accessibility

The running instance was verified by sending a curl request to http://98.80.123.222, which returned the following HTML response:

- It works!

```
/AWS_Projects/EC2$ curl http://98.80.123.222
<html><body><h1>It works!</h1></body></html>
```

This result was further confirmed by accessing http://98.80.123.222 via a web browser, where the page displayed the expected message "It works!".



SSH Connection to Instance

SSH access to the instance was established using the key pair:

- ssh -i <pemfile> ec2-user@98.80.123.222

```
:~/AWS_Projects/EC2$  ssh -i                .pem ec2-user@98.80.123.222
```

The connection was successful, and a warning indicated that the host was permanently added. Upon login, the Amazon Linux 2023 welcome screen appeared, with the shell prompt: [ec2-user@ip-172-31-31-77 ~]$.