6. **Create a CloudFormation template that launches an EC2 instance and attaches a security group to it.**

Step 1: Create the CloudFormation Template

```
AWSTemplateFormatVersion: '2010-09-09'

Resources:
  MySecurityGroup:
    Type: 'AWS::EC2::SecurityGroup'
    Properties:
      GroupDescription: 'Allow SSH access'
      SecurityGroupIngress:
        - IpProtocol: 'tcp'
          FromPort: '22'
          ToPort: '22'
          CidrIp: '0.0.0.0/0'  # Allow SSH access from anywhere (you can restrict this to your IP range for security)

  MyEC2Instance:
    Type: 'AWS::EC2::Instance'
    Properties:
      InstanceType: 't3.micro'  # EC2 instance type
      ImageId: 'ami-0c1ac8a41498c1a9c'  # Amazon Linux 2 AMI (update this with the correct AMI ID for your region)
      KeyName: 'linux'  # Replace with your EC2 key pair name
      SecurityGroups:
        - !Ref MySecurityGroup
```

Step 2: Deploy the Template Using the AWS Management Console

1. Sign In to AWS Management Console

- Open the AWS Management Console and sign in with your credentials.

2. Navigate to CloudFormation

- In the AWS Services search bar, type CloudFormation and select it.

3. Create a New Stack

- Click on Create stack and then select With new resources (standard).

4. Choose Template Source

- Choose Upload a template file and click Choose file to upload the CloudFormation template (ec2-with-sg-template.yaml) that you have created.

5.Provide Stack Name:

- Enter a stack name (e.g., MyEC2Stack) and click Next.

6. Configure Stack Options:

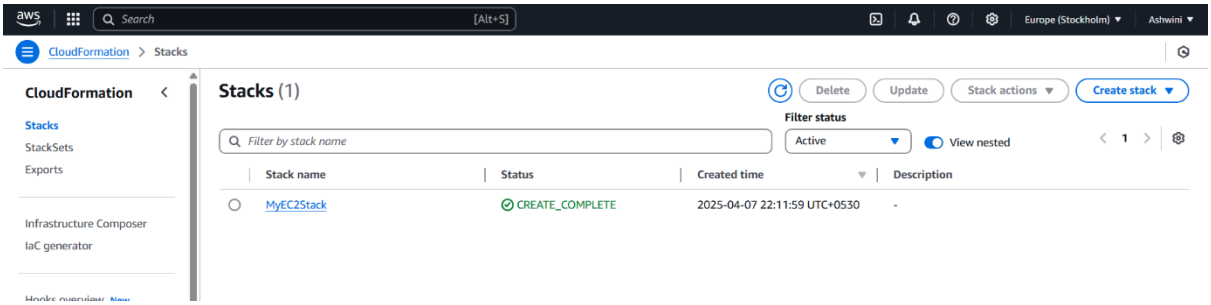
- You can leave the options as default or configure them as needed. Click Next.

7.Review and Create:

- Review the configuration and click Create stack.

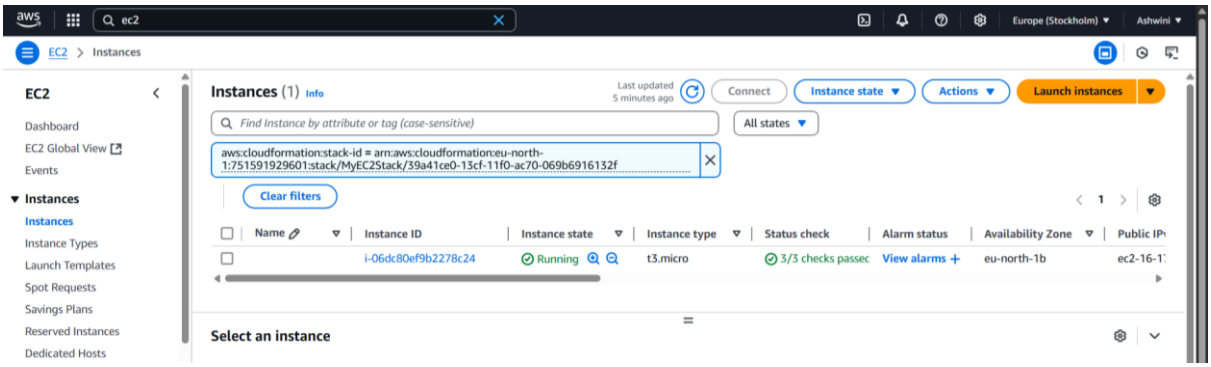
Step 3: Monitor Stack Creation:

- CloudFormation will start provisioning the resources. The process may take a few minutes.
- You can monitor the status in the CloudFormation Console. When the stack creation is complete, the EC2 instance and security group will be available.



Step 4: Verify Resources:

1. Verify EC2 Instance: Go to the EC2 Console and verify that the EC2 instance is running.



2. Verify Security Group: Go to Security Groups in the EC2 Console and verify that the security group MySecurityGroup has been created.