Write a CloudFormation template to create a simple web server setup with an ec2 instance and a security group allowing HTTP traffic. Deploy the stack

- Prplevamp20

Overview

This guide demonstrates creating a CloudFormation stack to deploy a web server using an EC2 instance. The setup includes:

1. An EC2 instance running a basic web server.
2. A security group allowing HTTP traffic on port 80.
3. Automatic deployment of a sample webpage to verify accessibility.

Prerequisites

· **AWS Account:** Ensure you have access to an AWS account.
· **Key Pair:** Create an EC2 Key Pair in the AWS Management Console for SSH access (if necessary).
· **Permissions:** You should have permissions to use CloudFormation, EC2, and Security Groups.
· **Basic Text Editor:** Use an editor like VS Code or Notepad to create the YAML file.
· **AWS CLI (Optional):** Can be used to upload and manage CloudFormation stacks.

CloudFormation Template (YAML)

```yaml
AWSTemplateFormatVersion: '2010-09-09'
Description: >
  CloudFormation template to create a simple web server setup
  with an EC2 instance and a security group allowing HTTP traffic.

Parameters:
  KeyName:
    Description: Name of an existing EC2 KeyPair to enable SSH access
    Type: String
    Default: default-keypair-name
    ConstraintDescription: Must be the name of an existing EC2 KeyPair.

Resources:
  WebServerInstance:
    Type: AWS::EC2::Instance
    Properties:
      InstanceType: t2.micro
      KeyName: !Ref KeyName
      ImageId: ami-0c02fb55956c7d316 # Amazon Linux 2 AMI (ensure this is valid in your region)
      SecurityGroupIds:
        - !Ref WebServerSecurityGroup
      UserData:
        Fn::Base64: |
          #!/bin/bash
          yum update -y
          yum install -y httpd
          systemctl start httpd
          systemctl enable httpd
          echo "<html><body><h1>Welcome to your CloudFormation Web Server!</h1></body></html>" >
/var/www/html/index.html
```

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```yaml
WebServerSecurityGroup:
  Type: AWS::EC2::SecurityGroup
  Properties:
    GroupDescription: Allow HTTP traffic
    SecurityGroupIngress:
      - IpProtocol: tcp
        FromPort: 80
        ToPort: 80
        CidrIp: 0.0.0.0/0

Outputs:
  WebsiteURL:
    Description: URL of the web server
    Value: !Sub "http://${WebServerInstance.PublicIp}"
```

Deployment Steps

1. Create YAML File:

- Save the above YAML code as web-server-template.yaml in your text editor.

2. Login to AWS Console:

- Navigate to the AWS Management Console.

3. Open CloudFormation:

- Go to the CloudFormation service and click on Create stack.
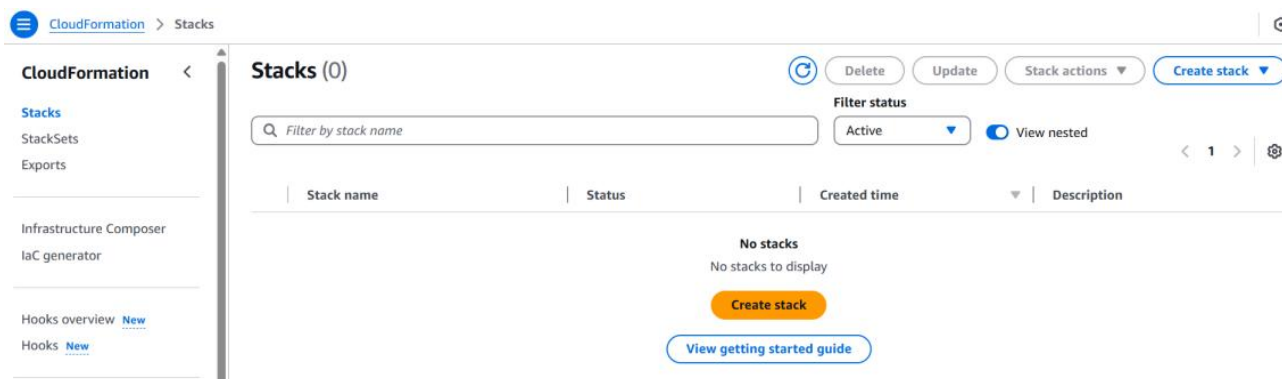
4. Upload the Template:

- Under Specify template, select Upload a template file, and upload the web-server-template.yaml.

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5. Provide Stack Details:

- Name the stack (e.g., SimpleWebServerStack).
- In the **Parameters** section, provide the name of your EC2 Key Pair for SSH access.

6. Configure Stack Options:

- Leave other options as default and proceed.

7. Submit the Stack:

- Click **Next** and then **Submit** to create the stack.
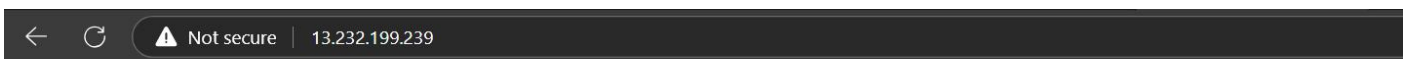
8. Monitor Deployment:

- Wait for the stack to reach the CREATE_COMPLETE status.

9. Access the EC2 Instance:

- Once the stack is complete, go to the **Outputs** tab of the stack.
- Copy the WebsiteURL value and paste it into your browser. You should see the web page served by the EC2 instance.

Verification

- Open the provided WebsiteURL in a browser.
- Ensure you see the message: Welcome to your CloudFormation Web Server!
- If you encounter issues, check the EC2 instance logs and the Security Group rules.