

AWS CloudFormation Task Documentation

This document provides a comprehensive walkthrough for the task of creating a public VPC, Subnet, EC2 instance, Elastic IP, Internet Gateway, and Security Group using AWS CloudFormation. The outputs and configurations are documented below as per the provided requirements.

```
$ aws cloudformation create-stack \
  --stack-name MyCloudFormationStack \
  --template-body file://cloudformation-template.yaml \
  --region us-east-2
{
  "StackId": "arn:aws:cloudformation:us-east-2:908027419603:stack/MyCloudFormationStack/d3171b50-abb2-11ef-969f-02250bef4841"
}
```

VPC Creation

The VPC was created with the following details:

```
$ aws ec2 describe-vpcs --region us-east-2 --query "Vpcs[*].{VPCId:VpcId,CidrBlock:CidrBlock,IsDefault:IsDefault}" --output table
DescribeVpcs
+-----+-----+-----+
| CidrBlock | IsDefault | VPCId |
+-----+-----+-----+
| 10.0.0.0/16 | False | vpc-0287ad2c549dc6947 |
+-----+-----+-----+
```

Subnet details

The Subnet created under the VPC has the following details:

```
$ aws ec2 describe-subnets --region us-east-2 --query "Subnets[*].{SubnetId:SubnetId,VpcId:VpcId,CidrBlock:CidrBlock,MapPublicIpOnLaunch:MapPublicIpOnLaunch}" --output table
DescribeSubnets
+-----+-----+-----+
| CidrBlock | MapPublicIpOnLaunch | SubnetId | VpcId |
+-----+-----+-----+
| 10.0.1.0/24 | True | subnet-03e46ce9420b1944c | vpc-0287ad2c549dc6947 |
+-----+-----+-----+
```

Internet gateway details

The Internet Gateway was attached to the VPC with the following details:

```
$ aws ec2 describe-internet-gateways --region us-east-2 --query "InternetGateways[*].{InternetGatewayId:InternetGatewayId,Attachments:Attachments}" --output table
DescribeInternetGateways
+-----+-----+
| InternetGatewayId |
+-----+-----+
| igw-016697cdf897a6949 |
+-----+-----+
Attachments
+-----+-----+
| State | VpcId |
+-----+-----+
| available | vpc-0287ad2c549dc6947 |
+-----+-----+
```

Security groups details

A security group was created to allow SSH access with the following details:

Inbound Rule: TCP 22 from 0.0.0.0/0

```
$ aws ec2 describe-security-groups --region us-east-2 --query "SecurityGroups[*].{GroupName:GroupName,GroupId:GroupId,Description:Description,VpcId:VpcId}" --output table
```

DescribeSecurityGroups			
Description	GroupId	GroupName	VpcId
default VPC security group	sg-037b3b31c3ac5aff8	default	vpc-0287ad2c549dc6947
Allow SSH access	sg-007947a9114c0a711	MyCloudFormationStack-MySecurityGroup-gwh2hSI7uspq	vpc-0287ad2c549dc6947

Route table details

The Route tables was successfully attached with the following details

```
$ aws ec2 describe-route-tables --region us-east-2 --query "RouteTables[*].{VpcId:VpcId, Routes:Routes}" --output table
```

DescribeRouteTables			
VpcId	Routes		
DestinationCidrBlock	GatewayId	Origin	State
10.0.0.0/16	local	CreateRouteTable	active
0.0.0.0/0	igw-016697cdf897a6949	CreateRoute	active

DescribeRouteTables			
VpcId	Routes		
DestinationCidrBlock	GatewayId	Origin	State
10.0.0.0/16	local	CreateRouteTable	active

Ec2 instance details

The EC2 instance was successfully launched with the following details:

```
$ aws ec2 describe-instances --region us-east-2 --query 'Reservations[*].Instances[*].{InstanceId:InstanceId,State:State.Name,PublicIpAddress:PublicIpAddress,SubnetId:SubnetId,SecurityGroups:SecurityGroups[0].GroupName}' --output table
```

DescribeInstances	
InstanceId	i-0469ff1e1cd670ef6
PublicIpAddress	3.16.48.236
SecurityGroups	MyCloudFormationStack-MySecurityGroup-gwh2hSI7uspq
State	running
SubnetId	subnet-03e46ce9420b1944c