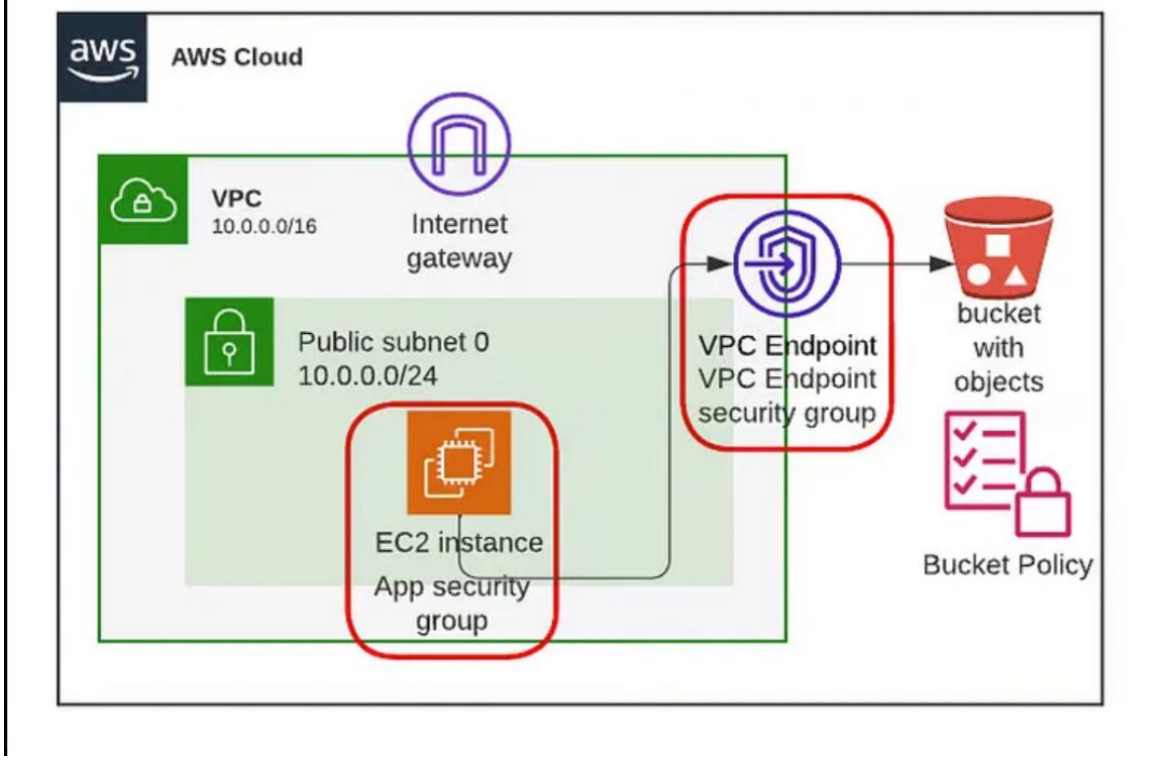
Load Balanced Web Server Deployment using AWS CloudFormation

Project Overview

Objective:
Design and deploy the given cloud infrastructure using AWS CloudFormation Template (CFT). Your goal is to:
- Create the VPC infrastructure shown in the diagram (with subnets, internet gateway, route tables, and an Application Load Balancer).
- Launch EC2 instances in the public subnets of two availability zones.
- Install Apache Web Server on both instances using UserData.
- Deploy a simple HTML page:
  - On Instance 1 (Public Subnet 1), display: "You are connected to Server 1".
  - On Instance 2 (Public Subnet 2), display: "You are connected to Server 2".
- Configure the ALB to route traffic to both instances. When a user accesses the ALB's DNS, they should see the HTML page served from one of the instances, identifying which server they are connected to.



Deliverables

- CloudFormation YAML or JSON template.
- Screenshot of the working ALB endpoint showing responses from both servers (load balanced).

Architecture Components

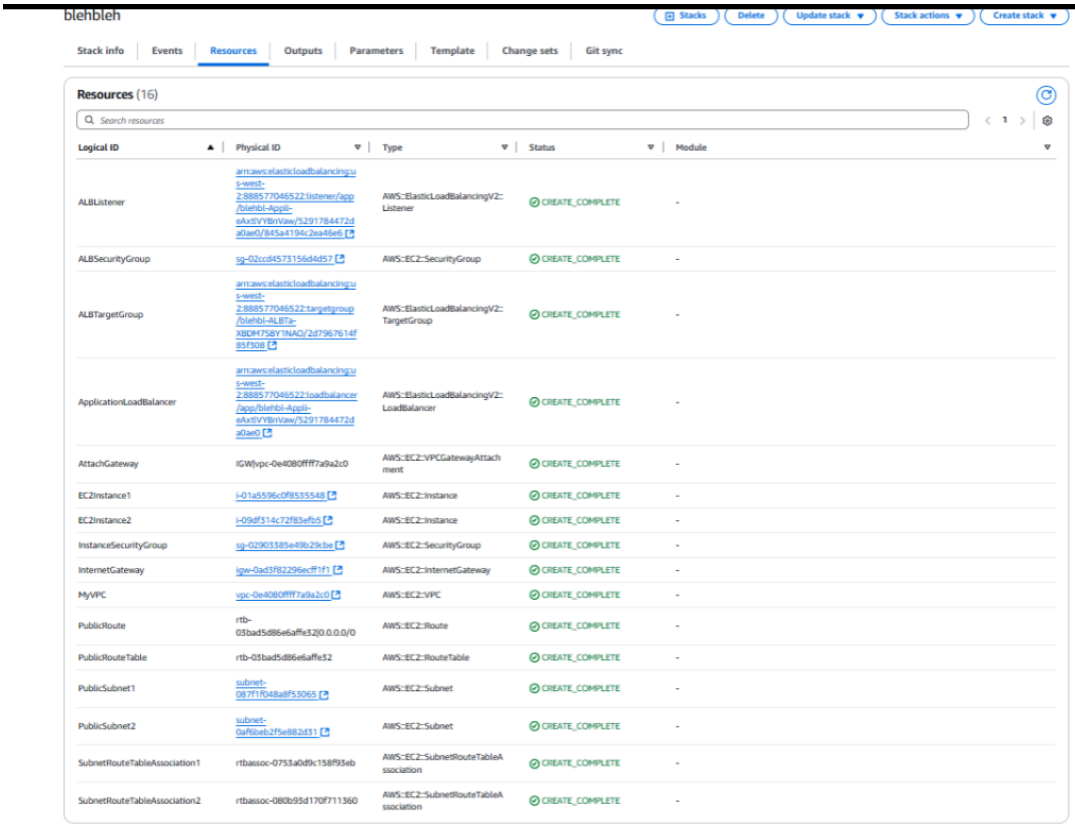
- VPC with CIDR block 10.0.0.0/16
- Subnets:
  - 10.0.1.0/24 (Public Subnet 1)
  - 10.0.3.0/24 (Public Subnet 2)
- Internet Gateway and Public Route Table
- Security Groups allowing HTTP (port 80)
- EC2 Instances in each public subnet with Apache installed via UserData
- Application Load Balancer (ALB) for routing
- Target Group & Listener attached to ALB

Instructions

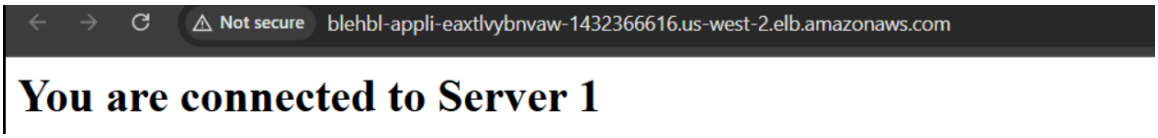
1. Upload the CloudFormation template to the AWS Console.
2. Provide a valid EC2 key pair when launching the stack.
3. Wait for the stack to complete and navigate to the ALB DNS in the output.
4. Refresh the ALB DNS in a browser to see alternating responses from both instances.

Screenshots

- Screenshot of CloudFormation stack resources



- Server 1 HTML response



- Server 2 HTML response