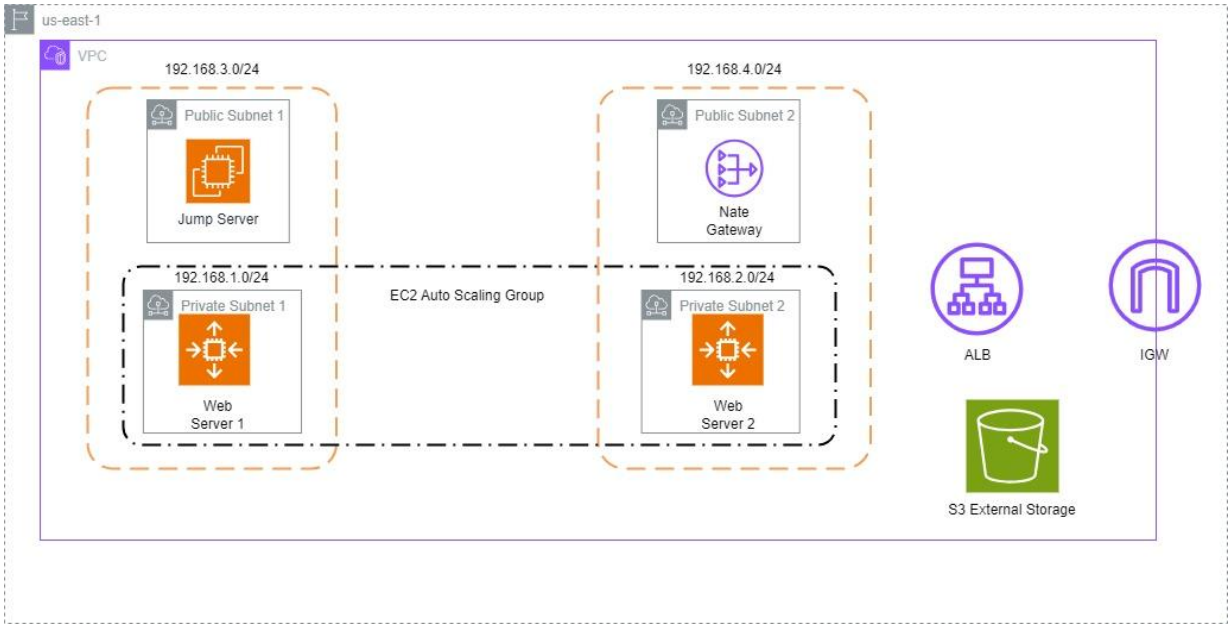
VPC Network Architecture

This network architecture represents a VPC setup in AWS, which includes public and private subnets, EC2 instances, a jump server, NAT gateway, and other components. Below is a detailed breakdown of the components:

1. VPC (192.168.0.0/16): The overall architecture resides within this VPC block.
2. Public Subnet 1 (192.168.3.0/24): Contains the Jump Server for remote administration.
3. Public Subnet 2 (192.168.4.0/24): Contains the NAT Gateway for outbound internet traffic from private subnets.
4. Private Subnet 1(192.168.1.0/24): Hosts Web Server 1 in the Auto Scaling Group.
5. Private Subnet 2 (192.168.2.0/24): Hosts Web Server 2, also in the Auto Scaling Group.
6. EC2 Auto Scaling Group: Automatically scales web servers based on load.
7. ALB (Application Load Balancer): Distributes traffic across Web Servers 1 and 2.
8. IGW (Internet Gateway): Enables public internet access to the VPC.
9. S3 External Storage: Stores static content outside the web servers.

Network Diagram

Below is the visual representation of the VPC setup:



Deployment Steps

Follow these steps to deploy and configure the infrastructure after uploading the Terraform files to AWS Cloud 9:

Step 1: Copy the .tf files to the AWS Cloud 9.

Step 2: Download Terraform using the following commands:

sudo yum install -y yum-utils shadow-utils

sudo yum-config-manager --add-repo
https://rpm.releases.hashicorp.com/AmazonLinux/hashicorp.repo

sudo yum -y install terraform

Step 3: Initialize Terraform in a specific directory:

terraform init

Step 4: Check the Terraform deployment plan:

terraform plan

Step 5: Deploy the Terraform configuration:

terraform apply

Step 6: Create an S3 bucket and upload the index.html file to it.

Step 7: Create an Auto Scaling Group, Launch Template, attach it to the existing Load Balancer, and create an SNS Topic.

User Data:

```
#!/bin/bash
yum update -y
yum install -y python3
cd /home/ec2-user
aws s3 cp s3://depifinalprojectbuvly6606/index.html .
python3 -m http.server 80 &
```

Step 8:

terraform destroy