**Prerequisites**

1. **Install Terraform**
   * Download and install Terraform from terraform.io.
   * Verify installation:

terraform version

1. **Install AWS CLI**
   * Download and install AWS CLI from [aws.amazon.com/cli](https://aws.amazon.com/cli/).
   * Verify installation:

aws --version

1. **Configure AWS Credentials**
   * Run:

aws configure

* + Enter:
    - AWS Access Key ID
    - AWS Secret Access Key
    - Default AWS Region (e.g., us-east-1)

1. **Zip the Lambda Code**
   * Create Python scripts (create\_vpc.py, get\_vpc.py, auth.py) and zip them:

zip create\_vpc.zip create\_vpc.py

zip get\_vpc.zip get\_vpc.py

zip auth.zip auth.py

**🚀 Steps to Deploy**

**1️⃣ Initialize Terraform**

Navigate to the directory where your Terraform files are located and run:

terraform init

This initializes Terraform and downloads necessary providers.

**2️⃣ Plan Deployment**

Run:

terraform plan

This shows what Terraform will create.

**3️⃣ Apply Changes**

To deploy your AWS infrastructure, run:

terraform apply

Type yes when prompted.

**4️⃣ Get API Gateway URL**

After successful deployment, get the API Gateway invoke URL:

terraform output api\_url

Use this URL to send requests.

**📌 Testing API**

1. **Create a VPC**

curl -X POST "https://your-api-url/prod/create-vpc" \

-H "Content-Type: application/json" \

-d '{"cidr\_block": "10.0.0.0/16", "subnet\_cidrs": ["10.0.1.0/24", "10.0.2.0/24"]}'

1. **Get VPC Details**

curl -X GET "https://your-api-url/prod/get-vpc/{vpc\_id}"

**🛑 Destroy Infrastructure**

To delete all resources:

terraform destroy

Type yes when prompted.