Step 1: Write a Terraform Configuration File (vpc.tf)

Create a new Terraform configuration file **vpc.tf** and add the following content:

```
resource "aws_vpc" "my_vpc" {
  cidr_block = "10.0.0.0/16"  # Mandatory: Defines the IP range for the VPC
  tags = {
    Name = "my-vpc"
  }
}
```

Step 2: Generate and Save the Execution Plan

```
terraform plan -out=tfplan
```

- The -out=tfplan flag **saves the plan** in a binary file named tfplan.
- Terraform does **not** apply the changes yet, it only prepares them.

Expected output:

Plan: 1 to add, 0 to change, 0 to destroy.

Saved the plan to: tfplan

Step 3: Inspect the Saved Plan (Optional)

To check what Terraform is about to apply, run:

```
terraform show tfplan
```

This **displays the planned changes in a human-readable format**.

Step 5: Apply the Saved Plan

```
terraform apply tfplan
```

- This ensures **only the pre-approved plan is executed**.
- If you run terraform apply without specifying tfplan, Terraform will generate a new plan.

Expected output:

Apply complete! Resources: 1 added, 0 changed, 0 destroyed.

Step 6: Verify the VPC Creation

Run the following AWS CLI command to check if the VPC was created:

```
aws ec2 describe-vpcs --query "Vpcs[*].VpcId"
```