## ✅ Steps to Deploy ELB using Terraform

🚀 This project provisions an AWS Classic Load Balancer and spins up EC2 instances behind it. You can see traffic being distributed across the instances through ELB.

### 🔍 Step 0: Review the Project:

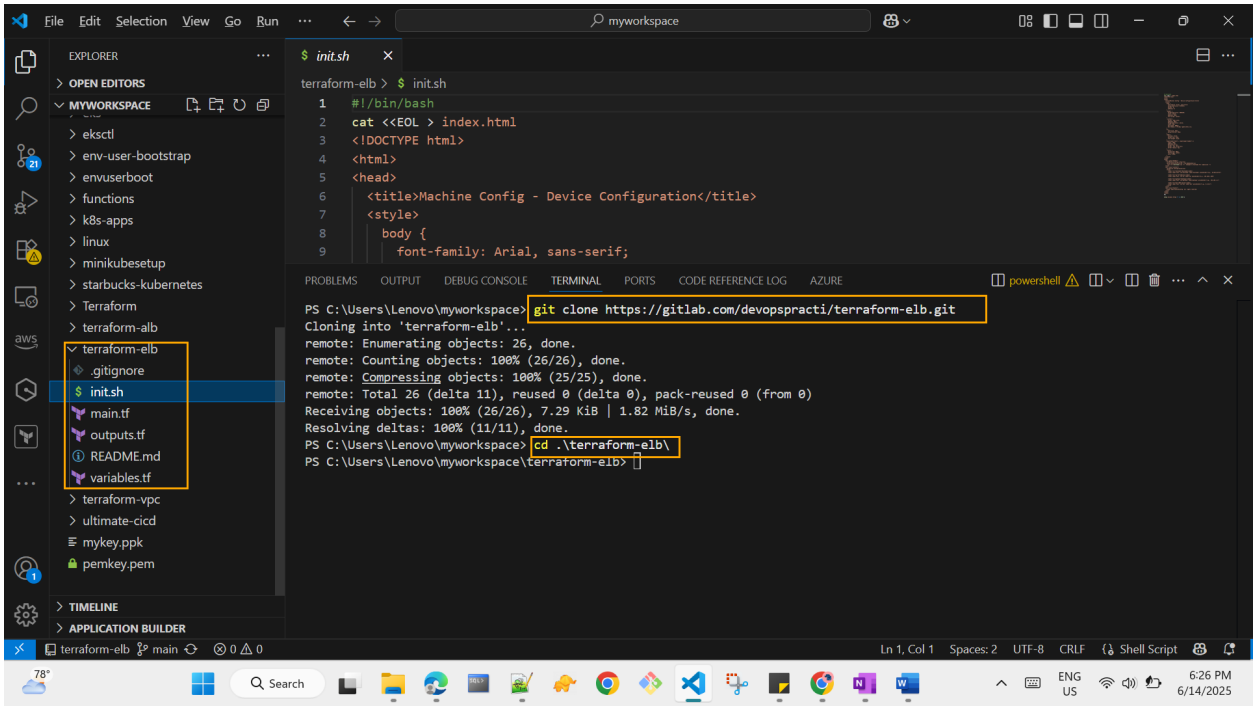
Go to: https://gitlab.com/shankar-k/terraform-elb

**Understand the structure:**

- **main.tf** provisions the ELB and EC2 instances
- **variables.tf** declares reusable inputs
- **outputs.tf** gives the ELB DNS for browser access

### 📥 Step 1: Clone the Repository:

**git https://gitlab.com/shankar-k/terraform-elb**
**cd terraform-elb**




### ⚙️ Step 2: Initialize Terraform:

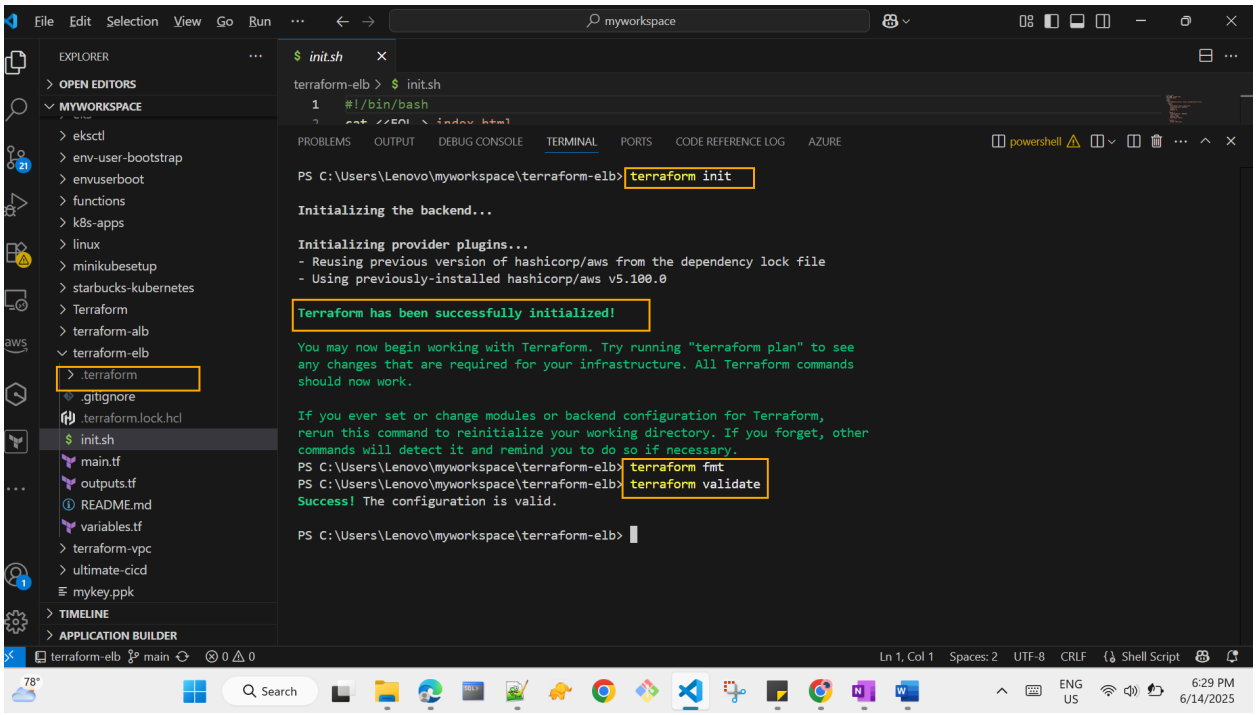
**terraform init**

This will initialize the backend and download required providers.

### 🧹 Step 3: Format and Validate:

**terraform fmt**
**terraform validate**

fmt ensures your code is properly formatted.
validate checks for configuration errors.




## 🚀 Step 4: Apply Terraform:

**terraform apply -auto-approve**

This command will:

- Create EC2 instances
- Launch a Classic Load Balancer (ELB)
- Attach the instances to the ELB

```
PS C:\Users\Lenovo\myworkspace\terraform-elb> terraform apply -auto-approve
data.aws_availability_zones.all: Reading...
data.aws_availability_zones.all: Read complete after 0s [id=ap-south-1]

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following
symbols:
  + create

Terraform will perform the following actions:

  # aws_autoscaling_group.example will be created
  + resource "aws_autoscaling_group" "example" {
      + arn                                    = (known after apply)
      + availability_zones                     = [
          + "ap-south-1a",
          + "ap-south-1b",
        ]
      + default_cooldown                       = (known after apply)
      + desired_capacity                       = (known after apply)
      + force_delete                           = false
      + force_delete_warm_pool                 = false
      + health_check_grace_period              = 300
      + health_check_type                      = "ELB"
      + id                                     = (known after apply)
      + ignore_failed_scaling_activities       = false
      + load_balancers                         = [
          + "itg-elb-example",
        ]
```

```
      + owner_id               = (known after apply)
      + revoke_rules_on_delete = false
      + tags_all               = (known after apply)
      + vpc_id                 = (known after apply)
    }

Plan: 5 to add, 0 to change, 0 to destroy.

Changes to Outputs:
  + clb_dns_name = (known after apply)
aws_security_group.instance: Creating...
aws_security_group.elb: Creating...
aws_security_group.instance: Creation complete after 2s [id=sg-042d9218cecce3c9c]
aws_launch_template.example: Creating...
aws_security_group.elb: Creation complete after 2s [id=sg-05e0cb3f1d4992fd5]
aws_elb.example: Creating...
aws_elb.example: Creation complete after 3s [id=itg-elb-example]
aws_launch_template.example: Creation complete after 6s [id=lt-007419762f1a96da2]
aws_autoscaling_group.example: Creating...
aws_autoscaling_group.example: Still creating... [10s elapsed]
aws_autoscaling_group.example: Creation complete after 16s [id=itg-example-asg]

Apply complete! Resources: 5 added, 0 changed, 0 destroyed.

Outputs:

clb_dns_name = "itg-elb-example-681254676.ap-south-1.elb.amazonaws.com"
PS C:\Users\Lenovo\myworkspace\terraform-elb>
```

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#Instances:instanceState=running

EC2 > Instances

**Instances (2)** Info

Last updated less than a minute ago | Connect | Instance state | Actions | Launch instances

Find Instance by attribute or tag (case-sensitive) | All states

Instance state = running | Clear filters

| Name | Instance ID | Instance state | Instance type | Status check | Alarm status | Availability Zone | Public I |
|---|---|---|---|---|---|---|---|
| itg-asg-project | i-0caec9f8ee6d4e808 | Running | t2.medium | 2/2 checks passed | View alarms + | ap-south-1b | ec2-13- |
| itg-asg-project | i-0cd93ca6860178c35 | Running | t2.medium | 2/2 checks passed | View alarms + | ap-south-1a | ec2-13- |

**Select an instance**

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#AutoScalingGroups:

EC2 > Auto Scaling groups

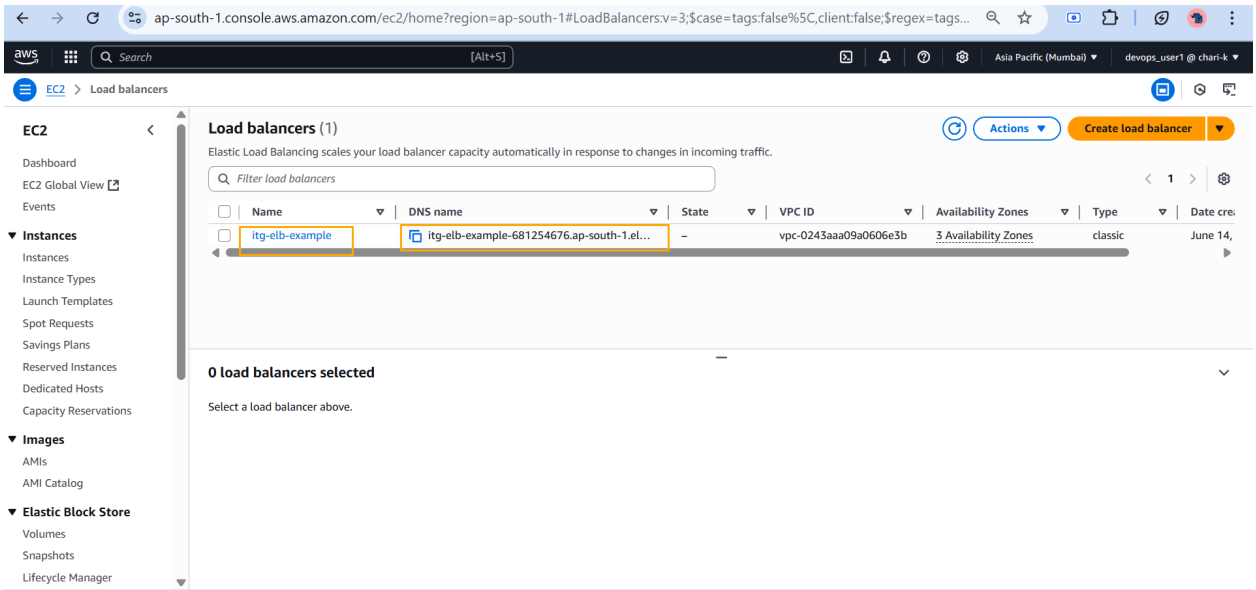
**Auto Scaling groups (1)** Info

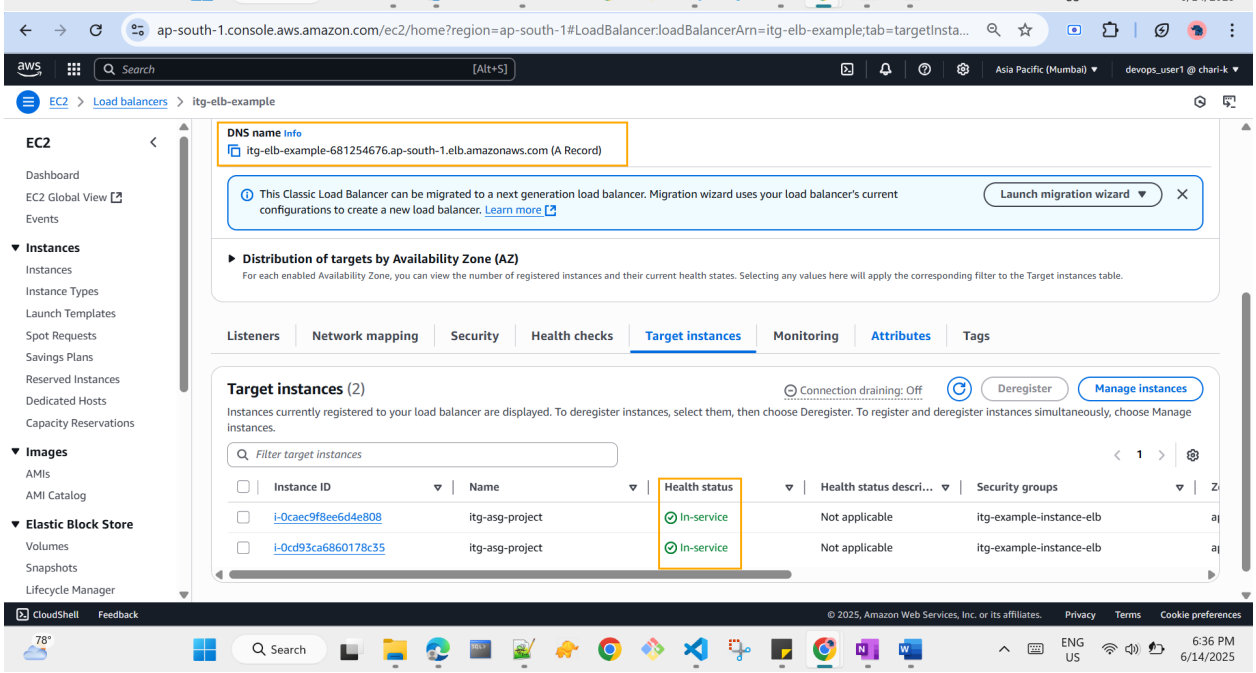
Last updated less than a minute ago | Launch configurations | Launch templates | Actions | Create Auto Scaling group

Search your Auto Scaling groups

| Name | Launch template/configuration | Instances | Status | Desired capacity | Min | Max | |
|---|---|---|---|---|---|---|---|
| itg-example-asg | itg-example-launchtemplate \| Version Lat | 2 | - | 2 | 2 | 10 | ap |

**0 Auto Scaling groups selected**

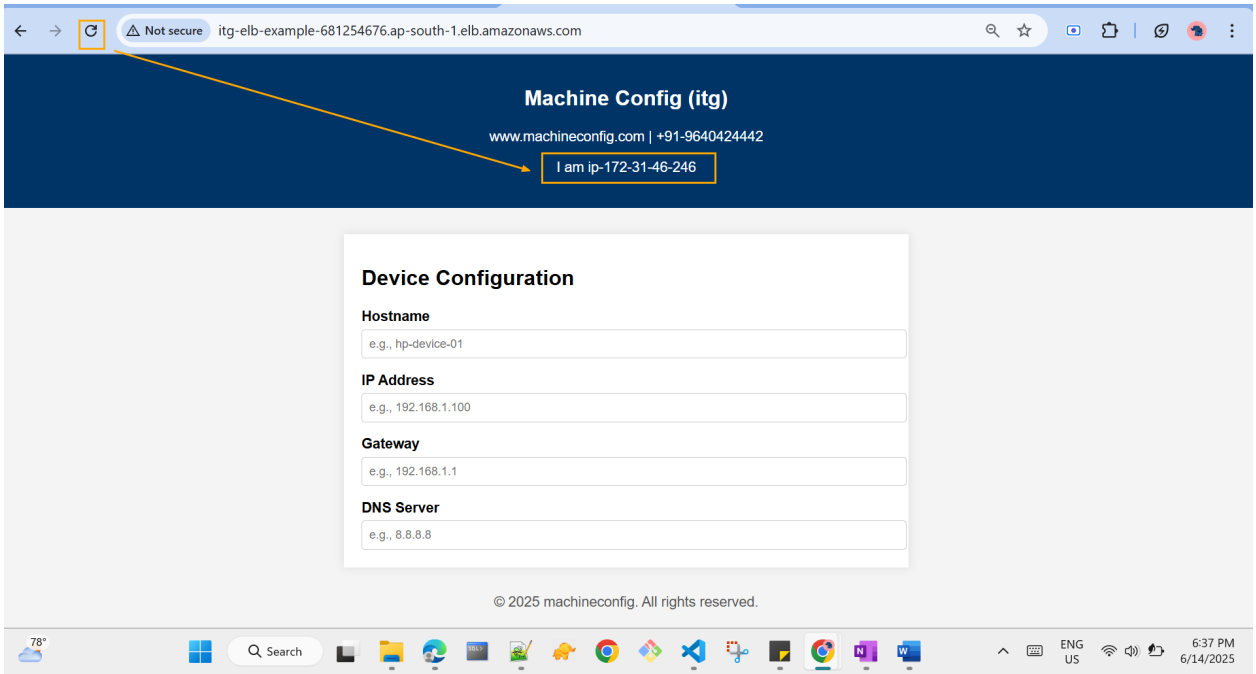


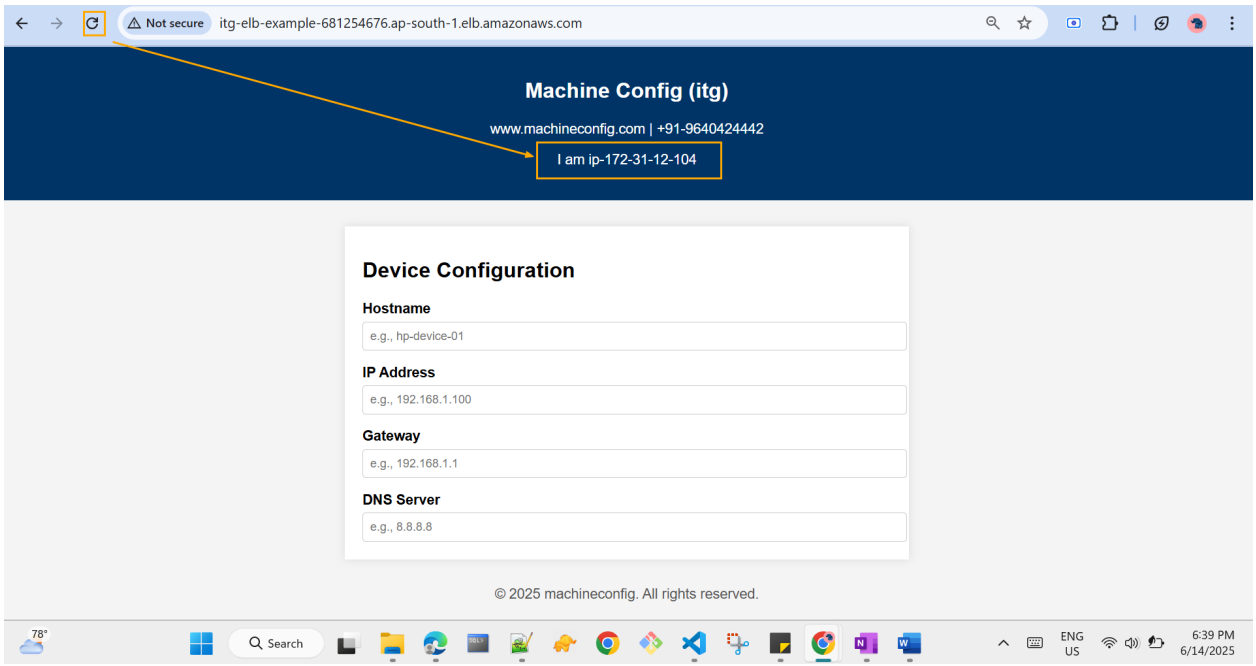




## 🌐 Step 5: Access the Application via ELB:

1. After apply completes, note the ELB DNS from the output:
   **Outputs:**
   **elb_dns = "oneconfig-elb-example-90386787.ap-south-1.elb.amazonaws.com"**
2. Open the DNS in your browser:
   http://itg-elb-example-681254676.ap-south-1.elb.amazonaws.com
3. Refresh the page multiple times to see the IP address change in the

browser. This shows the ELB load balancing traffic across multiple EC2 instances.




## 🎯 Final Outcome

You've now:

- Deployed an ELB and EC2s using Terraform
- Verified load balancing in action
- Followed IaC best practices with validation and formatting