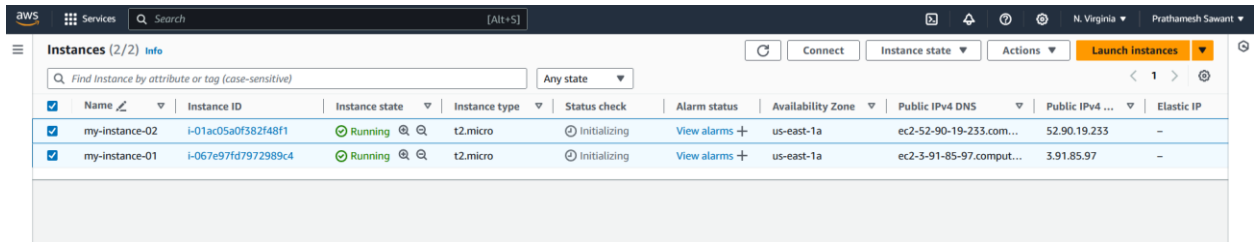


Create an Application Load Balancer using Console and CLI

1. Using Console

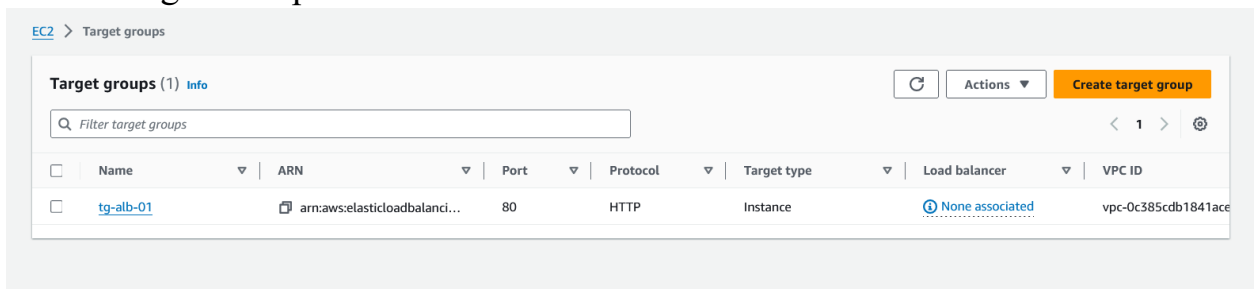
Launch 2 ec2 instances



The screenshot shows the AWS Management Console 'Instances' page. It displays two EC2 instances, 'my-instance-01' and 'my-instance-02', both in a 'Running' state. The table includes columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, Public IPv4 DNS, Public IPv4 address, and Elastic IP.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP
my-instance-02	i-01ac05a0f382f48f1	Running	t2.micro	Initializing	View alarms	us-east-1a	ec2-52-90-19-233.com...	52.90.19.233	-
my-instance-01	i-067e97fd7972989c4	Running	t2.micro	Initializing	View alarms	us-east-1a	ec2-3-91-85-97.comput...	3.91.85.97	-

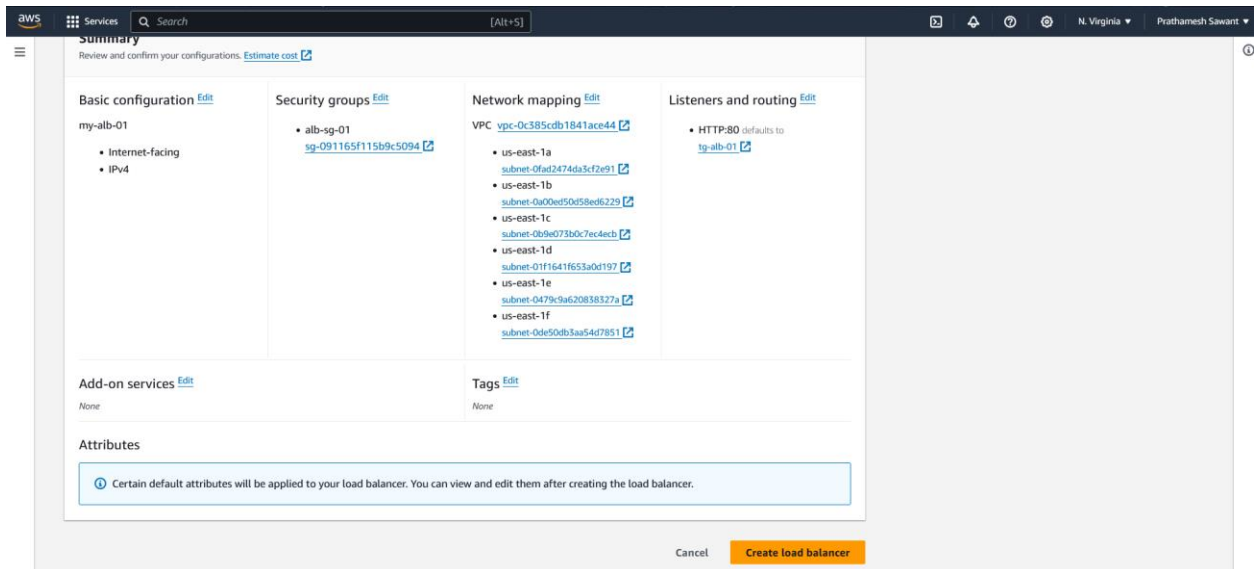
Create Target Groups



The screenshot shows the AWS Management Console 'Target groups' page. It displays one target group, 'tg-alb-01', which is associated with the load balancer 'None associated' and the VPC ID 'vpc-0c385cdb1841ace44'. The table includes columns for Name, ARN, Port, Protocol, Target type, Load balancer, and VPC ID.

Name	ARN	Port	Protocol	Target type	Load balancer	VPC ID
tg-alb-01	arn:aws:elasticloadbalanci...	80	HTTP	Instance	None associated	vpc-0c385cdb1841ace44

Create ALB



The screenshot shows the AWS Management Console 'Create Application Load Balancer' page. It displays the 'Summary' section with various configuration options. The 'Basic configuration' section shows 'my-alb-01' with 'Internet-facing' and 'IPv4' settings. The 'Security groups' section shows 'alb-sg-01' with ARN 'sg-091165f115b9c5094'. The 'Network mapping' section shows 'VPC vpc-0c385cdb1841ace44' with multiple subnets. The 'Listeners and routing' section shows 'HTTP-80' defaults to 'tg-alb-01'. The 'Add-on services' section shows 'None'. The 'Tags' section shows 'None'. The 'Attributes' section shows a message: 'Certain default attributes will be applied to your load balancer. You can view and edit them after creating the load balancer.' The 'Create load balancer' button is visible at the bottom right.

EC2 > Load balancers

Load balancers (1/1)

Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.

Filter load balancers

<input checked="" type="checkbox"/>	Name	DNS name	State	VPC ID	Availability Zones	Type	Date created
<input checked="" type="checkbox"/>	my-alb-01	my-alb-01-1425826983.u...	Active	vpc-0c385cdb1841ace44	6 Availability Zones	application	January 22, 2024, 16:34 (...)

Load balancer: my-alb-01

Details

Load balancer type Application	Status Active	VPC vpc-0c385cdb1841ace44	IP address type IPv4
Scheme Internet-facing	Hosted zone Z35SXDOTRQ7X7K	Availability Zones subnet-0479c9a620838327a us-east-1e (use1-az3) subnet-01f1641f653a0d197 us-east-1d (use1-az4) subnet-0fad2474da3cf2e91 us-east-1a (use1-az6) subnet-0de50db3aa54d7851 us-east-1f (use1-az5) subnet-0b9e073b0c7ec4ecb us-east-1c	Date created January 22, 2024, 16:34 (UTC+05:30)

Traffic Balancing



Hello World from ip-172-31-37-245.ec2.internal



Hello World from ip-172-31-41-119.ec2.internal

2. Using CLI Launch ALB

```
C:\Users\rohan>aws elbv2 create-load-balancer --name my-alb-02 --subnets subnet-0fad2474da3cf2e91 subnet-0a00ed50d58ed6229 subnet-0de50db3aa54d7851 --security-groups sg-091165f115b9c5094
{
  "LoadBalancers": [
    {
      "LoadBalancerArn": "arn:aws:elasticloadbalancing:us-east-1:139017485331:loadbalancer/app/my-alb-02/ce5d44ff2c29d1e0",
      "DNSName": "my-alb-02-488745832.us-east-1.elb.amazonaws.com",
      "CanonicalHostedZoneId": "Z35SXDOTRQ7X7K",
      "CreatedTime": "2024-01-22T11:24:15.970000+00:00",
      "LoadBalancerName": "my-alb-02",
      "Scheme": "internet-facing",
      "VpcId": "vpc-0c385cdb1841ace44",
      "State": {
        "Code": "provisioning"
      },
      "Type": "application",
      "AvailabilityZones": [
        {
          "ZoneName": "us-east-1b",
          "SubnetId": "subnet-0a00ed50d58ed6229",
          "LoadBalancerAddresses": []
        },
        {
          "ZoneName": "us-east-1f",
          "SubnetId": "subnet-0de50db3aa54d7851",
          "LoadBalancerAddresses": []
        },
        {
          "ZoneName": "us-east-1a",
          "SubnetId": "subnet-0fad2474da3cf2e91",
          "LoadBalancerAddresses": []
        }
      ],
      "SecurityGroups": [
        "sg-091165f115b9c5094"
      ],
      "IpAddressType": "ipv4"
    }
  ]
}
```

Create Target Groups

```
C:\Users\rohan>aws elbv2 create-target-group --name my-tg-02 --protocol HTTP --port 80 --vpc-id vpc-0c385cdb1841ace44
{
  "TargetGroups": [
    {
      "TargetGroupArn": "arn:aws:elasticloadbalancing:us-east-1:139017485331:targetgroup/my-tg-02/c36c54ec38550f36",
      "TargetGroupName": "my-tg-02",
      "Protocol": "HTTP",
      "Port": 80,
      "VpcId": "vpc-0c385cdb1841ace44",
      "HealthCheckProtocol": "HTTP",
      "HealthCheckPort": "traffic-port",
      "HealthCheckEnabled": true,
      "HealthCheckIntervalSeconds": 30,
      "HealthCheckTimeoutSeconds": 5,
      "HealthyThresholdCount": 5,
      "UnhealthyThresholdCount": 2,
      "HealthCheckPath": "/",
      "Matcher": {
        "HttpCode": "200"
      },
      "TargetType": "instance",
      "ProtocolVersion": "HTTP1"
    }
  ]
}
```

Attach Instance to Target Groups

```
C:\Users\rohan>aws elbv2 register-targets --target-group-arn arn:aws:elasticloadbalancing:us-east-1:139017485331:targetgroup/my-tg-02/c36c54ec38550f36 --targets Id=i-01ac05a0f382f48f1 Id=i-067e97fd7972989c4
```

```
C:\Users\rohan>aws elbv2 create-listener --load-balancer-arn arn:aws:elasticloadbalancing:us-east-1:139017485331:loadbalancer/app/my-alb-02/ce5d44ff2c29d1e0550f36 --protocol HTTP --port 80 --default-actions Type=forward,TargetGroupArn=arn:aws:elasticloadbalancing:us-east-1:139017485331:targetgroup/my-tg-02/c36c54ec38550f36
{
  "Listeners": [
    {
      "ListenerArn": "arn:aws:elasticloadbalancing:us-east-1:139017485331:listener/app/my-alb-02/ce5d44ff2c29d1e0/4e54ac930de431fe",
      "LoadBalancerArn": "arn:aws:elasticloadbalancing:us-east-1:139017485331:loadbalancer/app/my-alb-02/ce5d44ff2c29d1e0",
      "Port": 80,
      "Protocol": "HTTP",
      "DefaultActions": [
        {
          "Type": "forward",
          "TargetGroupArn": "arn:aws:elasticloadbalancing:us-east-1:139017485331:targetgroup/my-tg-02/c36c54ec38550f36",
          "ForwardConfig": {
            "TargetGroups": [
              {
                "TargetGroupArn": "arn:aws:elasticloadbalancing:us-east-1:139017485331:targetgroup/my-tg-02/c36c54ec38550f36",
                "Weight": 1
              }
            ],
            "TargetGroupStickinessConfig": {
              "Enabled": false
            }
          }
        }
      ]
    }
  ]
}
```

Health Check

```
C:\Users\rohan>aws elbv2 describe-target-health --target-group-arn arn:aws:elasticloadbalancing:us-east-1:139017485331:targetgroup/my-tg-02/c36c54ec38550f36
{
  "TargetHealthDescriptions": [
    {
      "Target": {
        "Id": "i-067e97fd7972989c4",
        "Port": 80
      },
      "HealthCheckPort": "80",
      "TargetHealth": {
        "State": "healthy"
      }
    },
    {
      "Target": {
        "Id": "i-01ac05a0f382f48f1",
        "Port": 80
      },
      "HealthCheckPort": "80",
      "TargetHealth": {
        "State": "healthy"
      }
    }
  ]
}
```