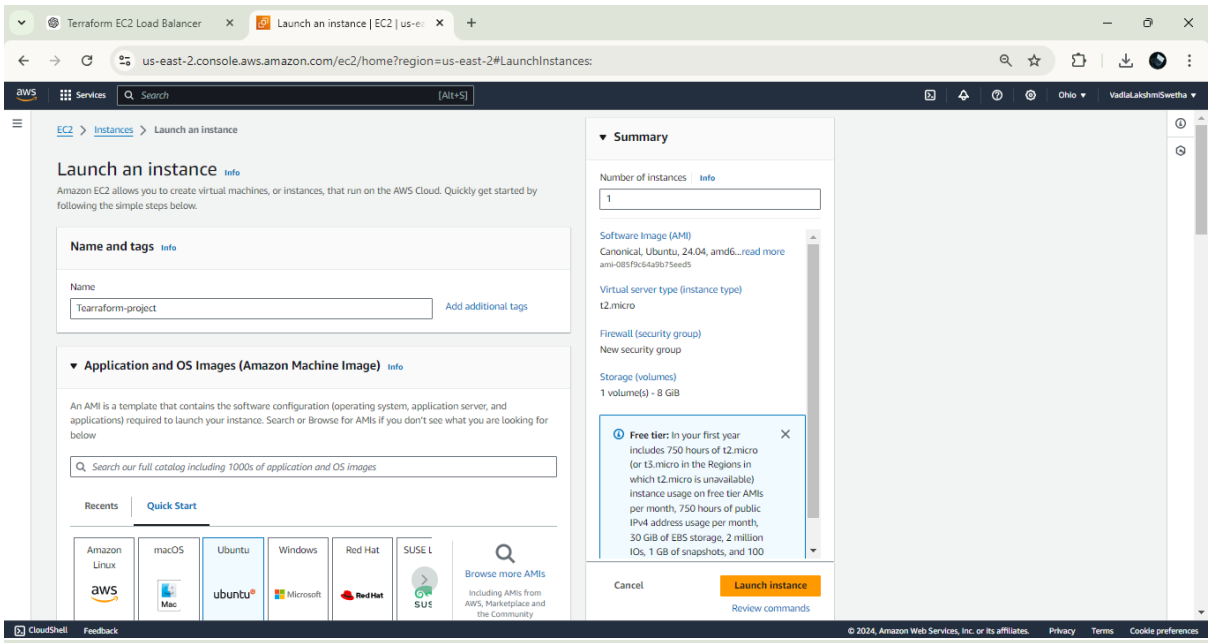
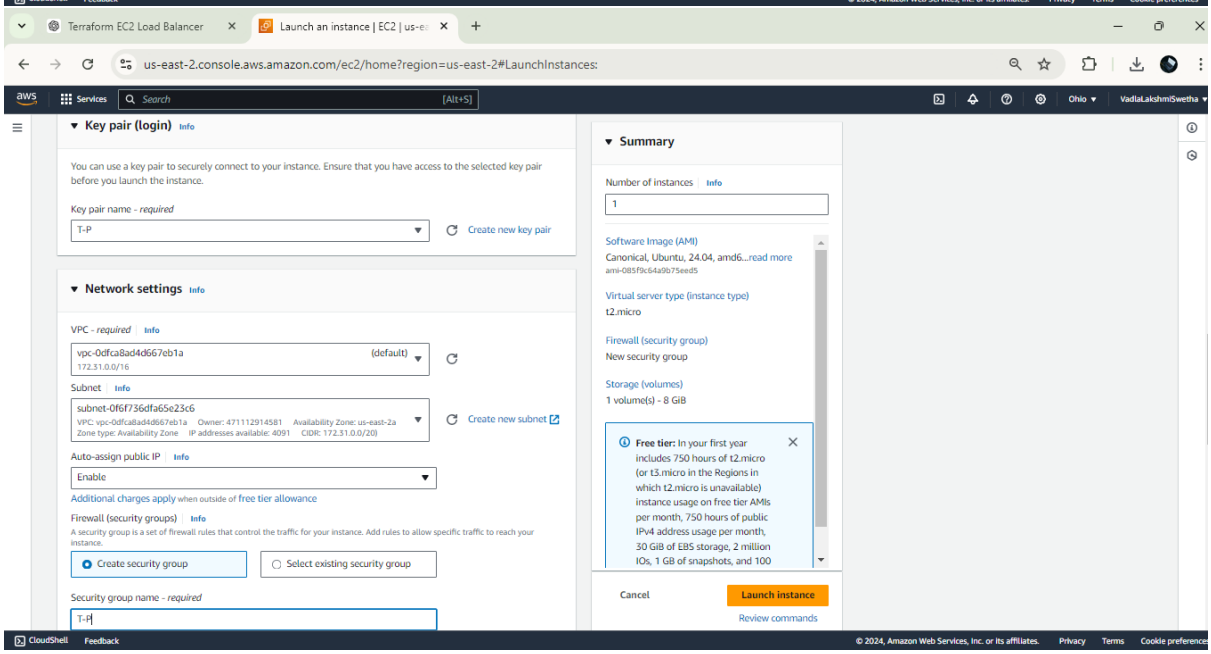
PROJECT-TERRAFORM

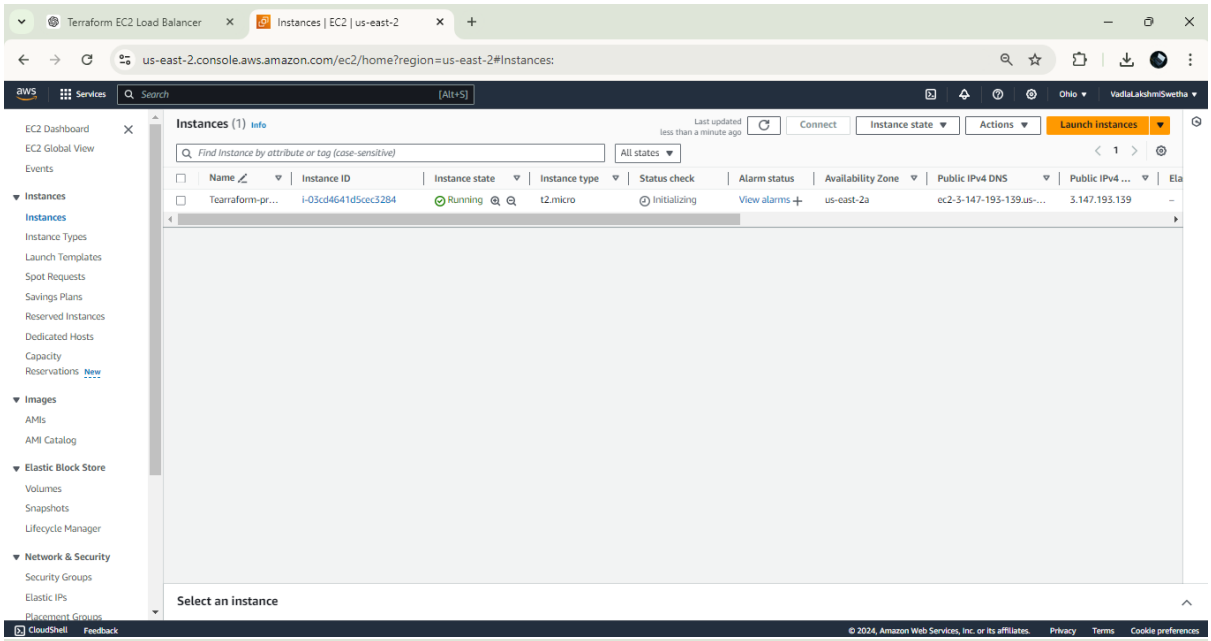
Create below infra using terraform

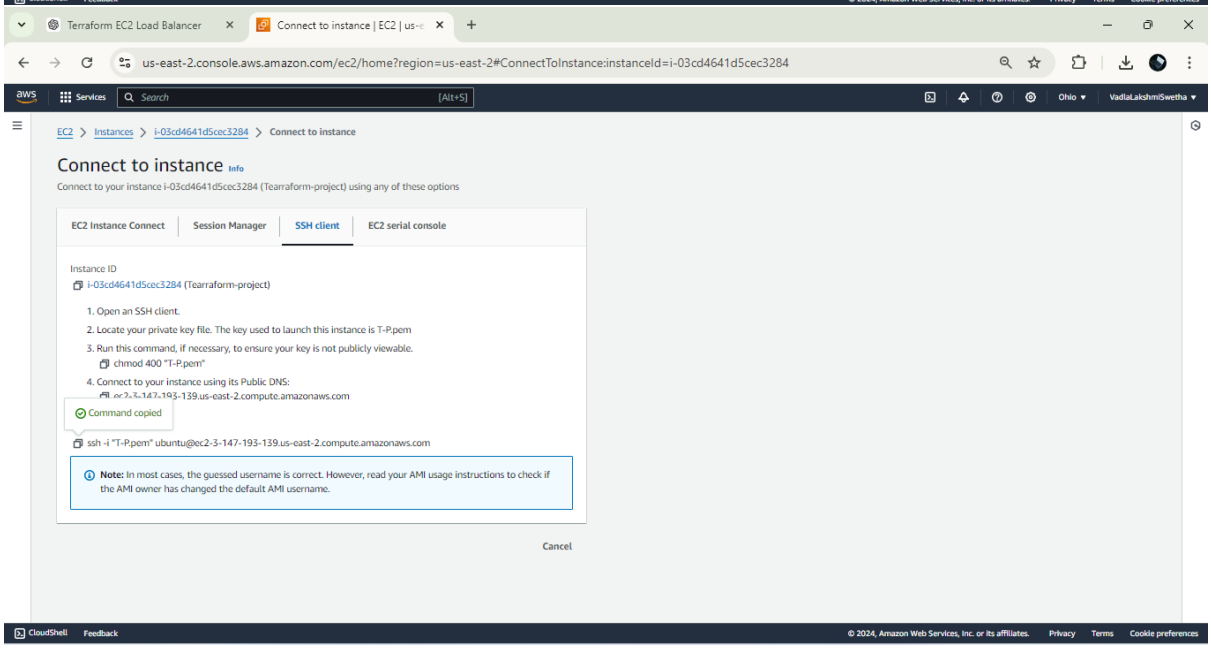
1. Create two virtual machines in east us (web servers).

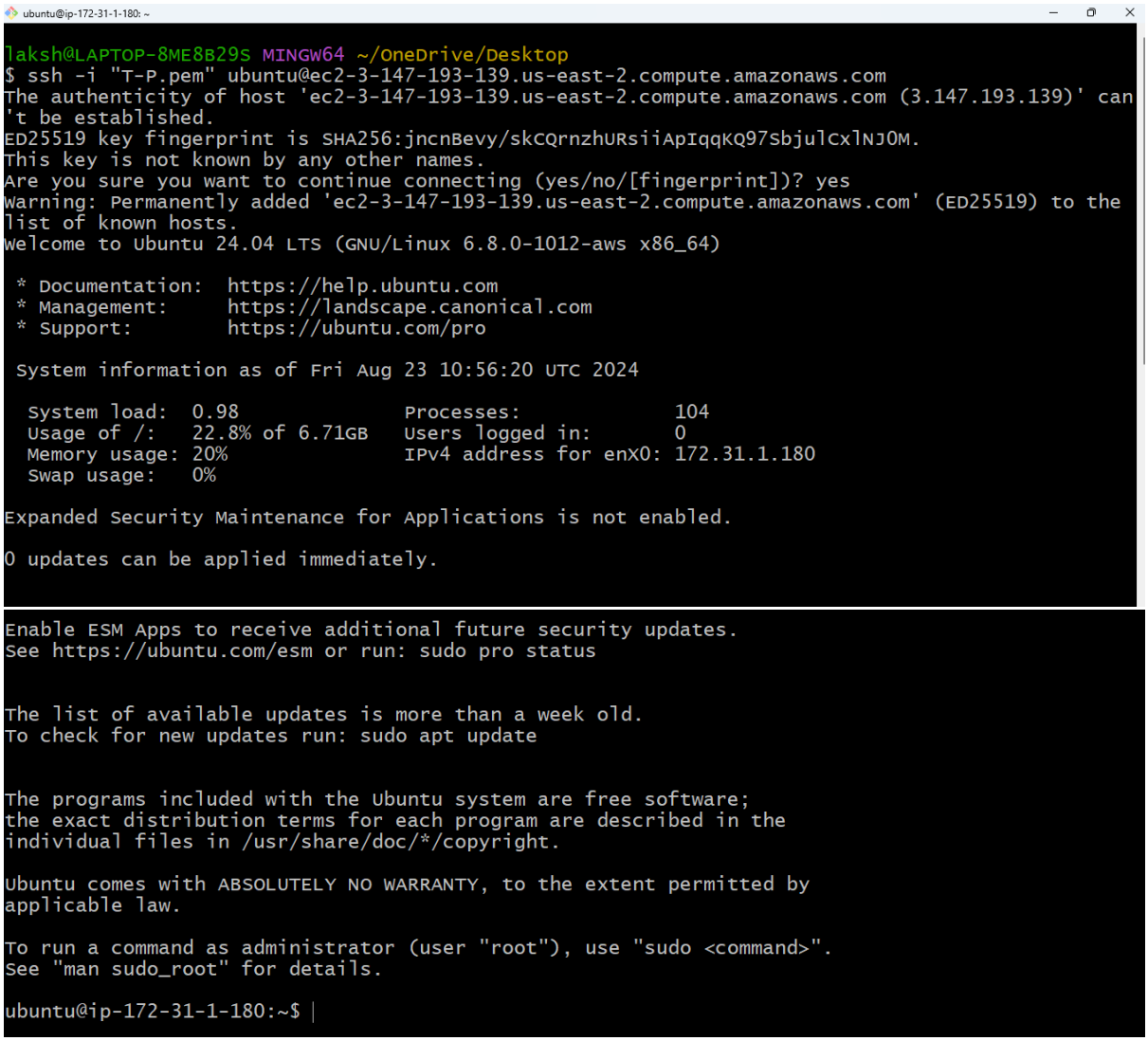
2. Configure load balancer for above servers.






Terraform EC2 Load Balancer
Instances | EC2 | us-east-2
us-east-2.console.aws.amazon.com/ec2/home?region=us-east-2#Instances:
Services
Search
[Alt+S]
Ohio
VadlaLakshmiSwetha
EC2 Dashboard
EC2 Global View
Events
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
New
Images
AMIs
AMI Catalog
Elastic Block Store
Volumes
Snapshots
Lifecycle Manager
Network & Security
Security Groups
Elastic IPs
Placement Groups
Instances (1) Info
Last updated less than a minute ago
Connect
Instance state
Actions
Launch instances
Find Instance by attribute or tag (case-sensitive)
All states
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Availability Zone
Public IPv4 DNS
Public IPv4 ...
Tearraform-pr...
i-03cd4641d5cec3284
Running
t2.micro
Initializing
View alarms
us-east-2a
ec2-3-147-193-139.us-...
3.147.193.139
Select an instance
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences


Terraform EC2 Load Balancer
Connect to instance | EC2 | us-e
us-east-2.console.aws.amazon.com/ec2/home?region=us-east-2#ConnectToInstance:instanceId=i-03cd4641d5cec3284
Services
Search
[Alt+S]
Ohio
VadlaLakshmiSwetha
EC2 > Instances > i-03cd4641d5cec3284 > Connect to instance
Connect to instance Info
Connect to your instance i-03cd4641d5cec3284 (Tearraform-project) using any of these options
EC2 Instance Connect
Session Manager
SSH client
EC2 serial console
Instance ID
i-03cd4641d5cec3284 (Tearraform-project)
1. Open an SSH client.
2. Locate your private key file. The key used to launch this instance is T-P.pem
3. Run this command, if necessary, to ensure your key is not publicly viewable.
chmod 400 "T-P.pem"
4. Connect to your instance using its Public DNS:
Command copied
ssh -i "T-P.pem" ubuntu@ec2-3-147-193-139.us-east-2.compute.amazonaws.com
Note: In most cases, the guessed username is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username.
Cancel
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

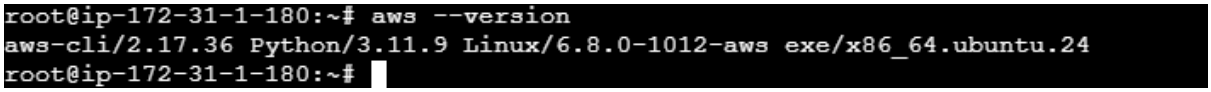


AWS CLI INSTALL:

curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2.zip"

unzip awscliv2.zip

sudo ./aws/install



TERRAFORM DOWNLOAD:-

sudo apt-get update

sudo apt-get install -y gnupg software-properties-common curl

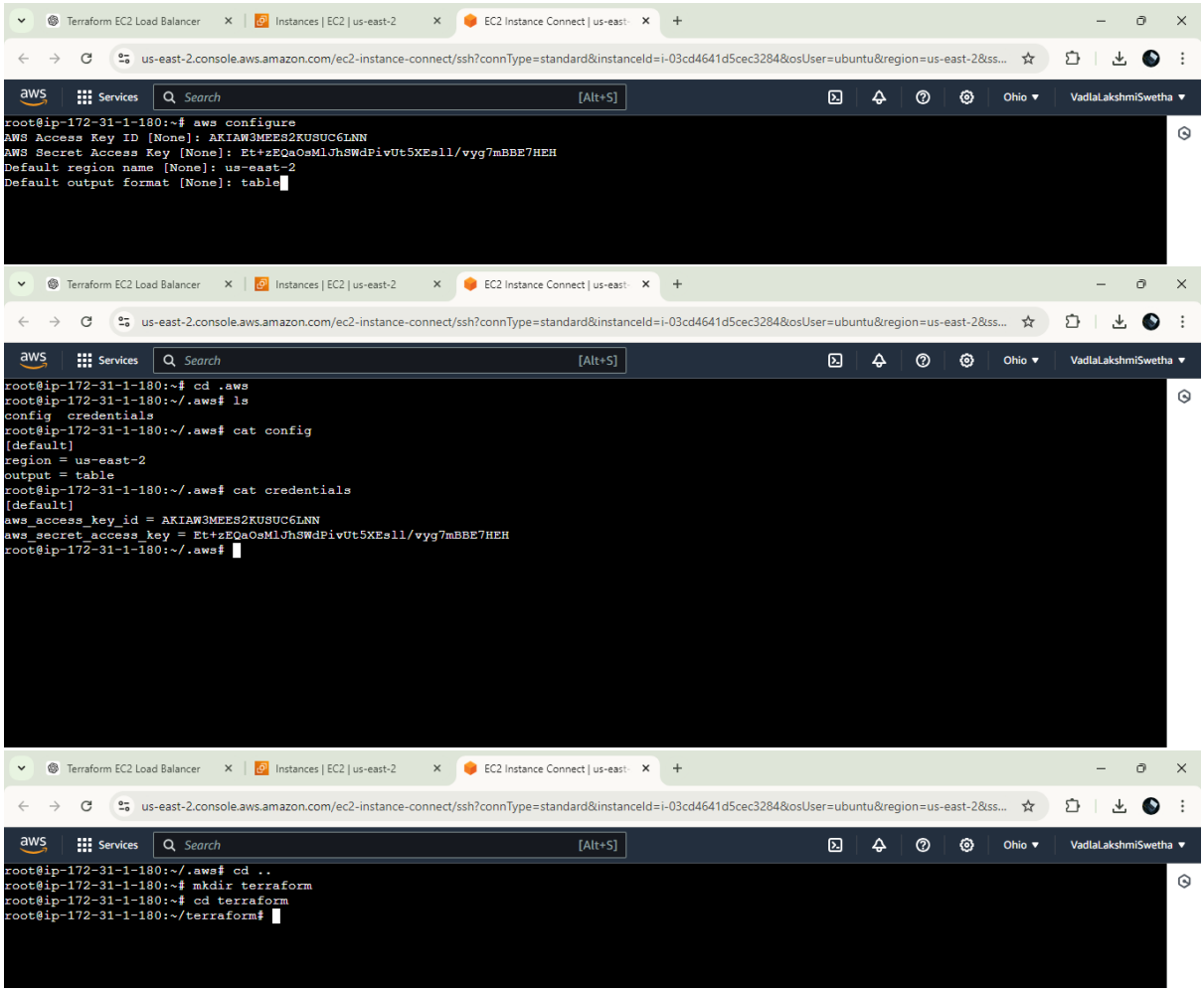
curl -fsSL https://apt.releases.hashicorp.com/gpg | sudo gpg --dearmor -o /usr/share/keyrings/hashicorp-archive-keyring.gpg

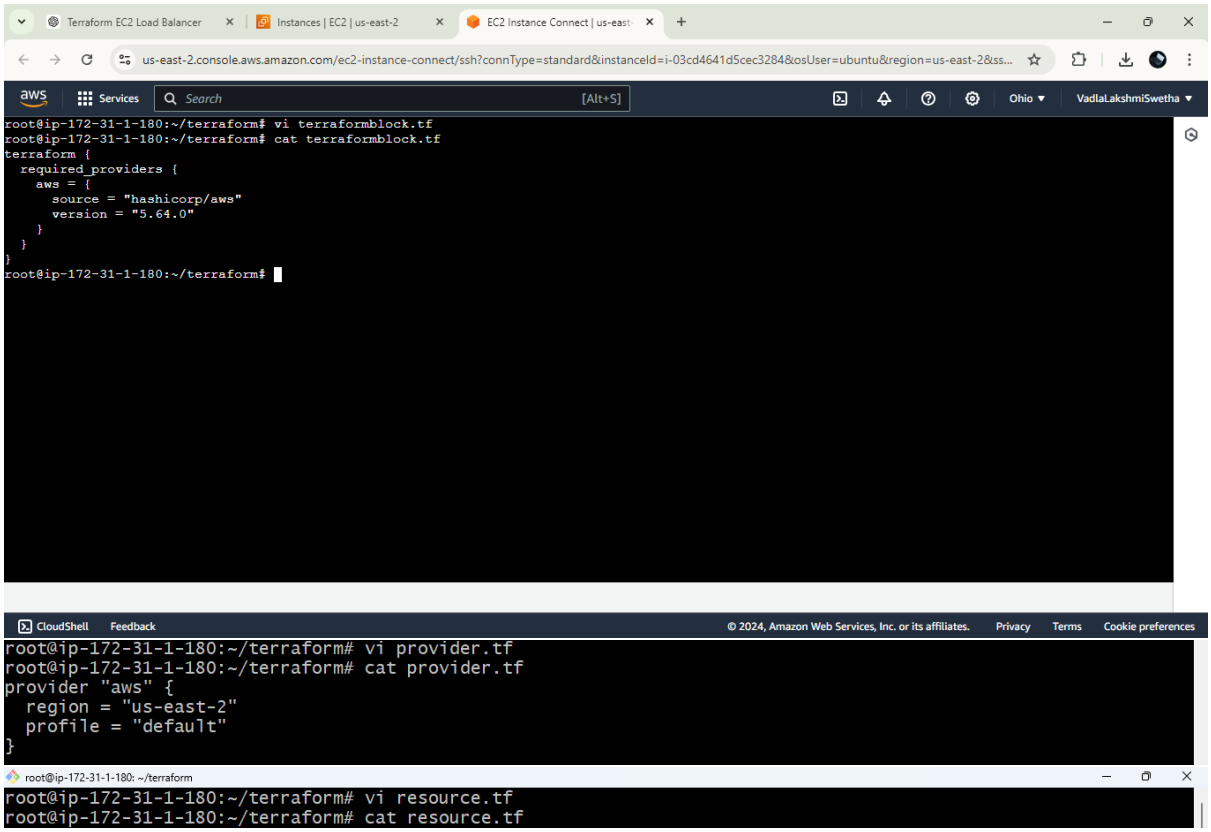
echo "deb [signed-by=/usr/share/keyrings/hashicorp-archive-keyring.gpg] https://apt.releases.hashicorp.com $(lsb_release -cs) main" | sudo tee /etc/apt/sources.list.d/hashicorp.list

sudo apt-get update

sudo apt-get install terraform

```
root@ip-172-31-1-180:~# terraform --version
Terraform v1.9.5
on linux_amd64
root@ip-172-31-1-180:~#
```



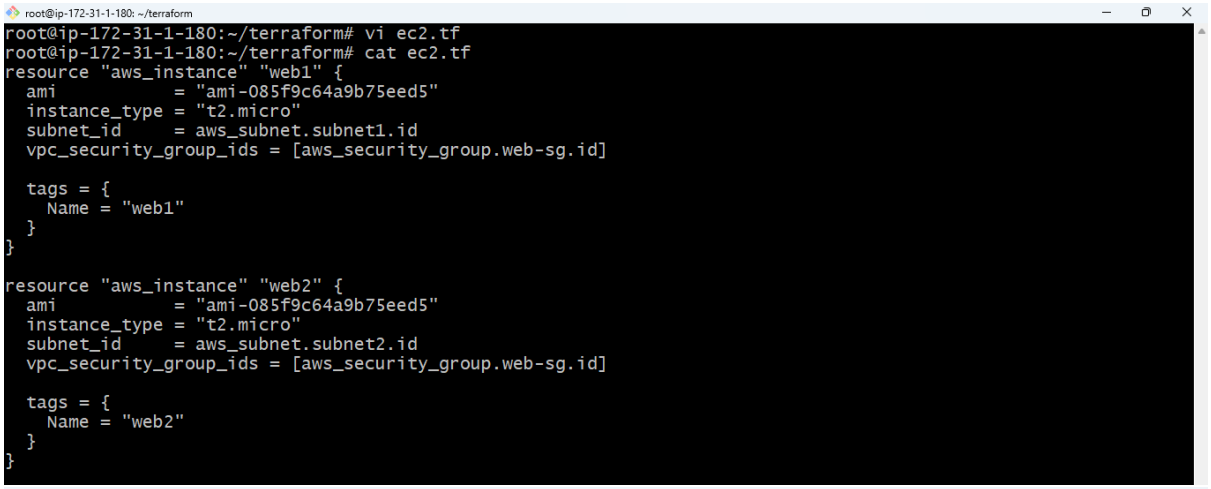


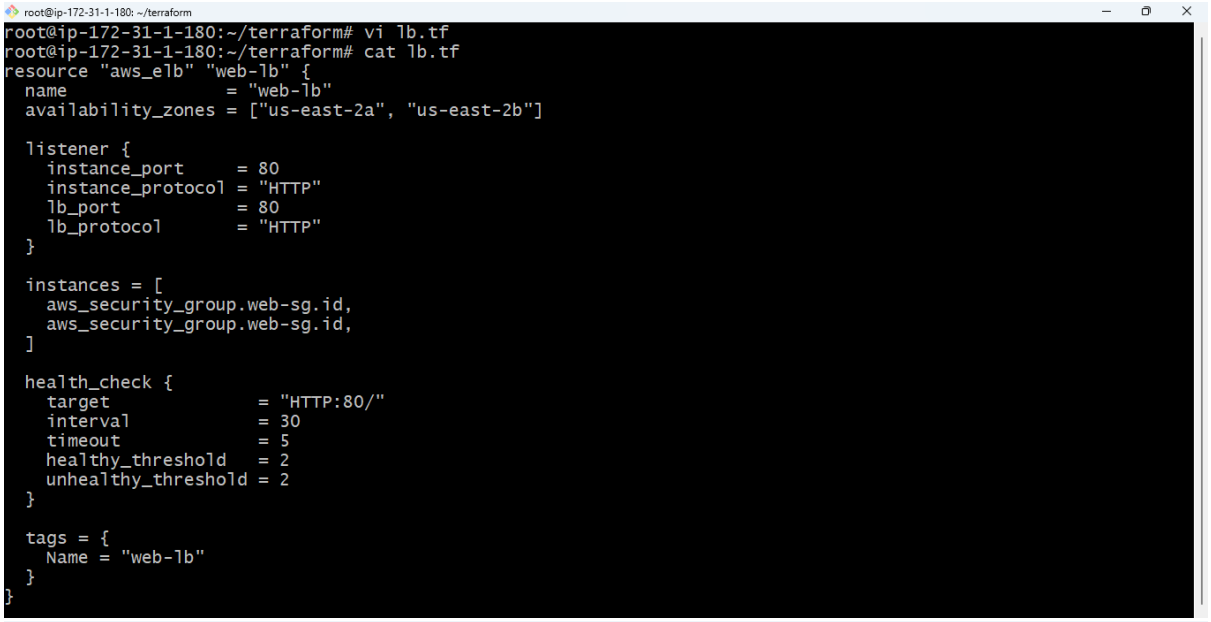

```
resource "aws_vpc" "main" {
  cidr_block = "10.0.0.0/16"

  tags = {
    Name = "main-vpc"
  }
}
resource "aws_subnet" "subnet1" {
  vpc_id            = aws_vpc.main.id
  cidr_block        = "10.0.1.0/24"
  availability_zone = "us-east-2a"

  tags = {
    Name = "subnet1"
  }
}
```

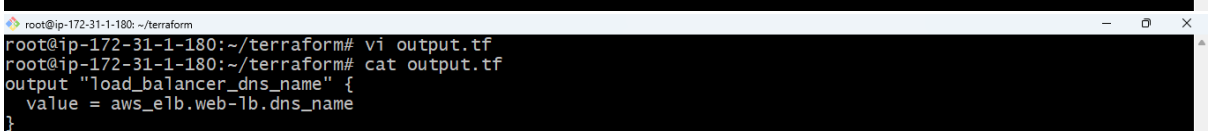
```
resource "aws_subnet" "subnet2" {
  vpc_id            = aws_vpc.main.id
  cidr_block        = "10.0.2.0/24"
  availability_zone = "us-east-2b"

  tags = {
    Name = "subnet2"
  }
}
resource "aws_internet_gateway" "igw" {
  vpc_id = aws_vpc.main.id

  tags = {
    Name = "main-igw"
  }
}
resource "aws_route_table" "rt" {
  vpc_id = aws_vpc.main.id

  route {
    cidr_block = "0.0.0.0/0"
    gateway_id = aws_internet_gateway.igw.id
  }

  tags = {
    Name = "main-route-table"
  }
}
```

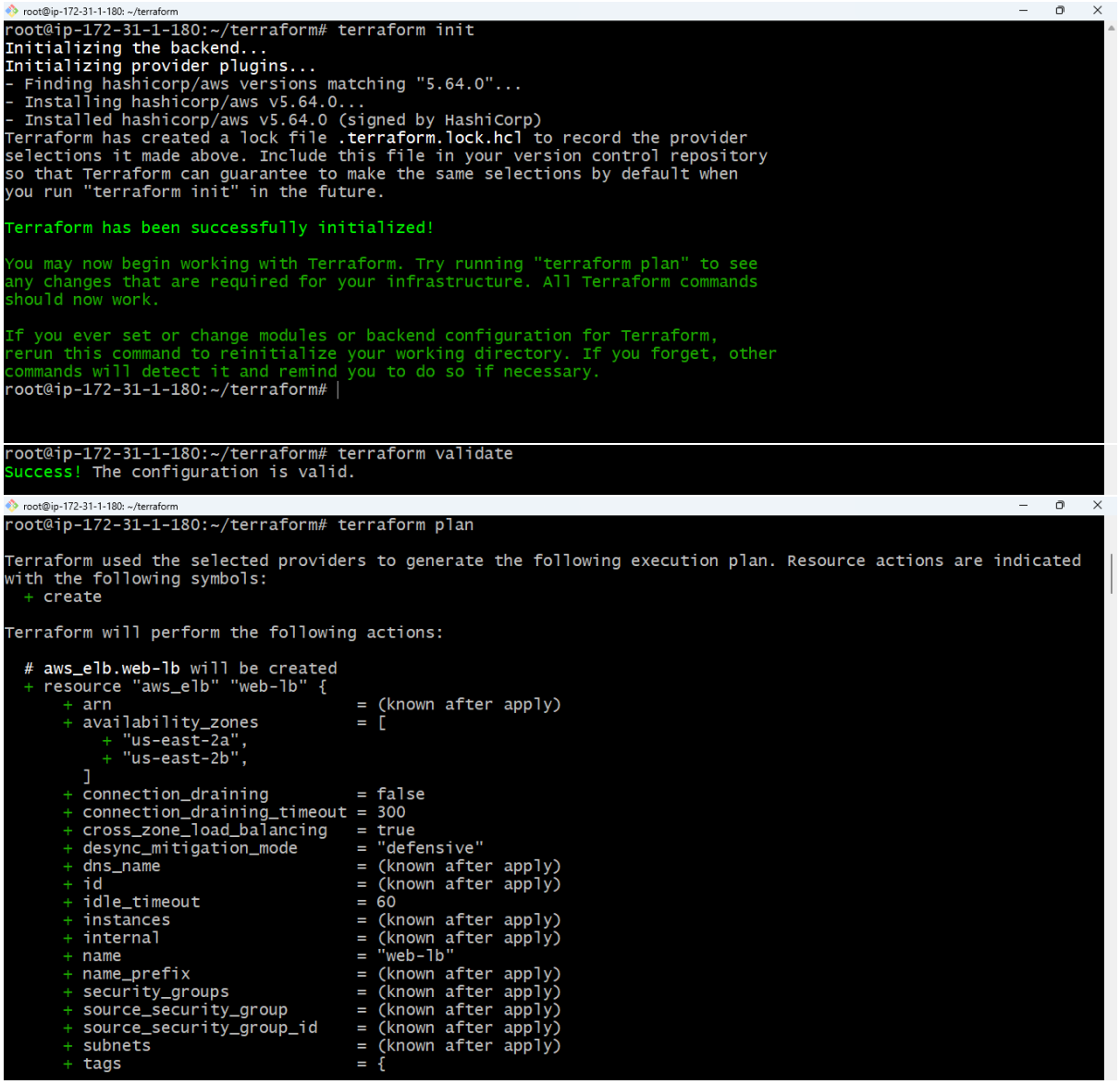
```
resource "aws_route_table_association" "subnet1-association" {
  subnet_id      = aws_subnet.subnet1.id
  route_table_id = aws_route_table.rt.id
}

resource "aws_route_table_association" "subnet2-association" {
  subnet_id      = aws_subnet.subnet2.id
  route_table_id = aws_route_table.rt.id
}
resource "aws_security_group" "web-sg" {
  vpc_id = aws_vpc.main.id

  ingress {
    from_port   = 80
    to_port     = 80
    protocol    = "tcp"
    cidr_blocks = ["0.0.0.0/0"]
  }

  ingress {
    from_port   = 22
    to_port     = 22
    protocol    = "tcp"
    cidr_blocks = ["0.0.0.0/0"]
  }

  egress {
    from_port   = 0
```

```
  to_port     = 0
  protocol    = "-1"
  cidr_blocks = ["0.0.0.0/0"]
 }


 tags = {
  Name = "web-sg"
 }
}
```

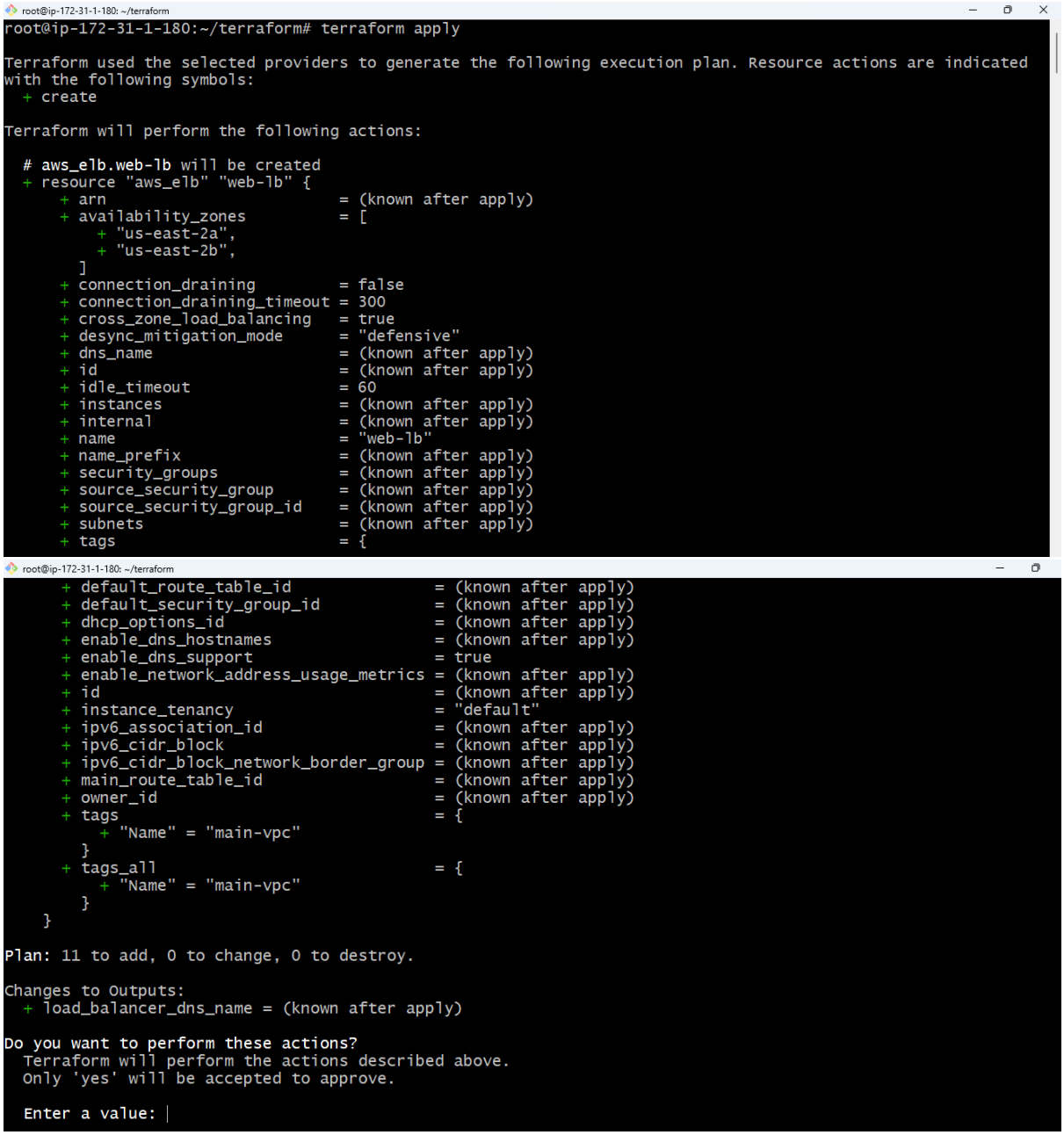




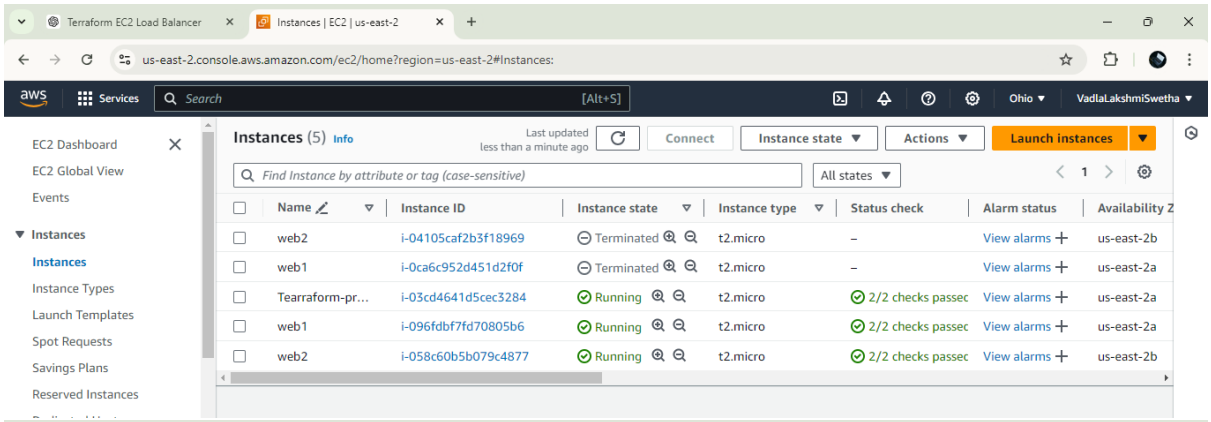


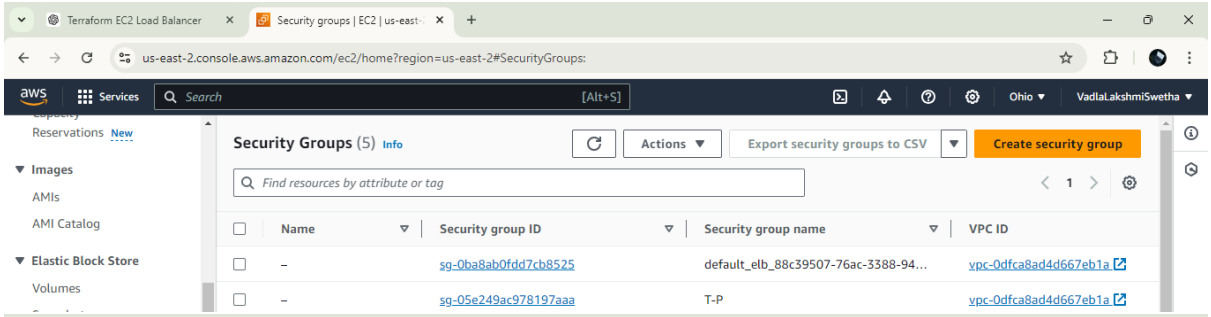

root@ip-172-31-1-180: ~/terraform
root@ip-172-31-1-180:~/terraform# terraform init
Initializing the backend...
Initializing provider plugins...
- Finding hashicorp/aws versions matching "5.64.0"...
- Installing hashicorp/aws v5.64.0...
- Installed hashicorp/aws v5.64.0 (signed by HashiCorp)
Terraform has created a lock file .terraform.lock.hcl to record the provider
selections it made above. Include this file in your version control repository
so that Terraform can guarantee to make the same selections by default when
you run "terraform init" in the future.
Terraform has been successfully initialized!
You may now begin working with Terraform. Try running "terraform plan" to see
any changes that are required for your infrastructure. All Terraform commands
should now work.
If you ever set or change modules or backend configuration for Terraform,
rerun this command to reinitialize your working directory. If you forget, other
commands will detect it and remind you to do so if necessary.
root@ip-172-31-1-180:~/terraform#
root@ip-172-31-1-180:~/terraform# terraform validate
Success! The configuration is valid.

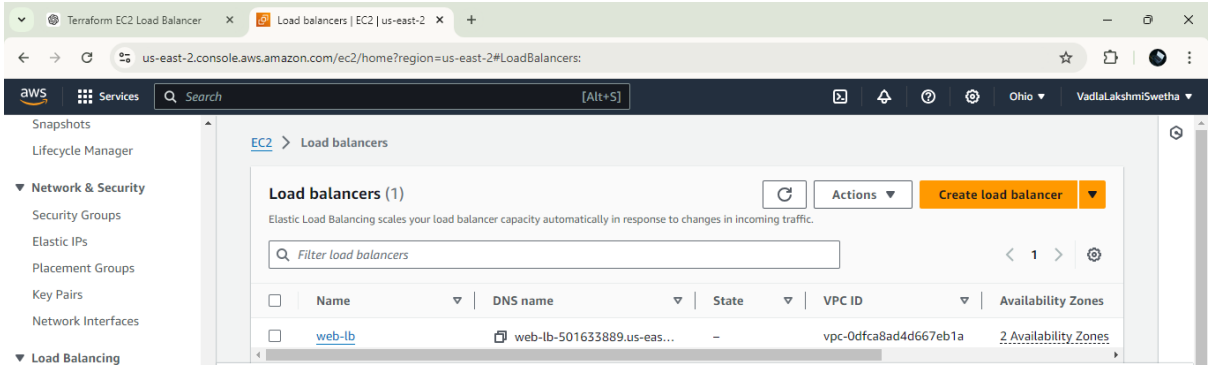
root@ip-172-31-1-180: ~/terraform
root@ip-172-31-1-180:~/terraform# terraform plan
Terraform used the selected providers to generate the following execution plan. Resource actions are indicated
with the following symbols:
+ create
Terraform will perform the following actions:
# aws_elb.web-lb will be created
+ resource "aws_elb" "web-lb" {
+ arn = (known after apply)
+ availability_zones = [
+ "us-east-2a",
+ "us-east-2b",
]
+ connection_draining = false
+ connection_draining_timeout = 300
+ cross_zone_load_balancing = true
+ desync_mitigation_mode = "defensive"
+ dns_name = (known after apply)
+ id = (known after apply)
+ idle_timeout = 60
+ instances = (known after apply)
+ internal = (known after apply)
+ name = "web-lb"
+ name_prefix = (known after apply)
+ security_groups = (known after apply)
+ source_security_group = (known after apply)
+ source_security_group_id = (known after apply)
+ subnets = (known after apply)
+ tags = {

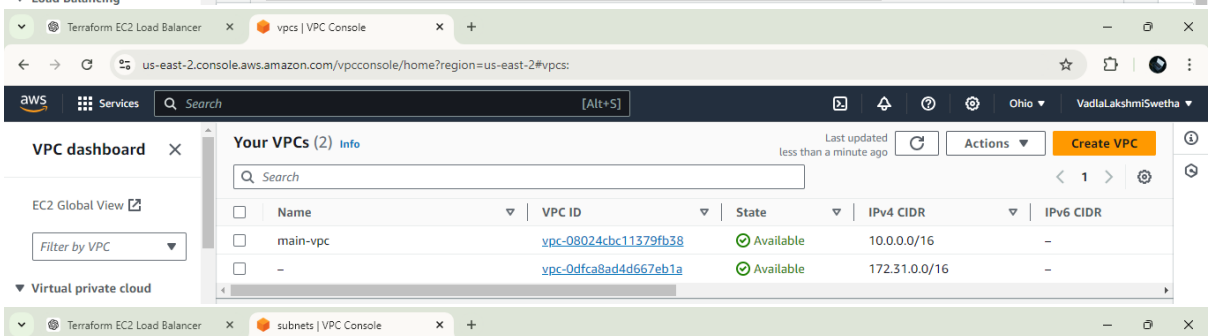

root@ip-172-31-1-180: ~/terraform
root@ip-172-31-1-180:~/terraform# terraform apply
Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
+ create
Terraform will perform the following actions:
# aws_elb.web-lb will be created
+ resource "aws_elb" "web-lb" {
+ arn = (known after apply)
+ availability_zones = [
+ "us-east-2a",
+ "us-east-2b",
]
+ connection_draining = false
+ connection_draining_timeout = 300
+ cross_zone_load_balancing = true
+ desync_mitigation_mode = "defensive"
+ dns_name = (known after apply)
+ id = (known after apply)
+ idle_timeout = 60
+ instances = (known after apply)
+ internal = (known after apply)
+ name = "web-lb"
+ name_prefix = (known after apply)
+ security_groups = (known after apply)
+ source_security_group = (known after apply)
+ source_security_group_id = (known after apply)
+ subnets = (known after apply)
+ tags = {

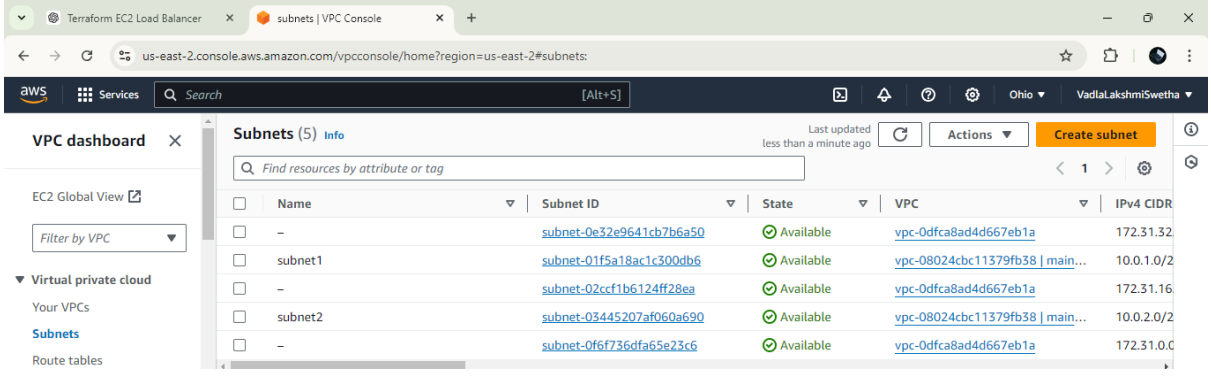
root@ip-172-31-1-180: ~/terraform
+ default_route_table_id = (known after apply)
+ default_security_group_id = (known after apply)
+ dhcp_options_id = (known after apply)
+ enable_dns_hostnames = (known after apply)
+ enable_dns_support = true
+ enable_network_address_usage_metrics = (known after apply)
+ id = (known after apply)
+ instance_tenancy = "default"
+ ipv6_association_id = (known after apply)
+ ipv6_cidr_block = (known after apply)
+ ipv6_cidr_block_network_border_group = (known after apply)
+ main_route_table_id = (known after apply)
+ owner_id = (known after apply)
+ tags = {
+ "Name" = "main-vpc"
}
+ tags_all = {
+ "Name" = "main-vpc"
}
}
Plan: 11 to add, 0 to change, 0 to destroy.
Changes to Outputs:
+ load_balancer_dns_name = (known after apply)
Do you want to perform these actions?
Terraform will perform the actions described above.
Only 'yes' will be accepted to approve.
Enter a value:

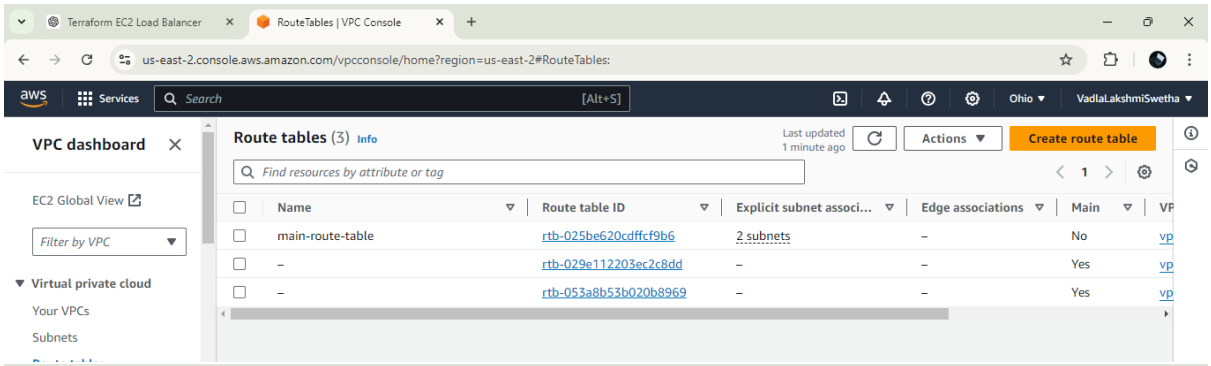

Terraform EC2 Load Balancer
Instances | EC2 | us-east-2
us-east-2.console.aws.amazon.com/ec2/home?region=us-east-2#Instances:
Services
Search
[Alt+S]
Ohio
VadlaLakshmiSwetha
EC2 Dashboard
EC2 Global View
Events
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Instances (5) Info
Last updated less than a minute ago
Connect
Instance state
Actions
Launch instances
Find Instance by attribute or tag (case-sensitive)
All states
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Availability Z
web2 i-04105caf2b3f18969 Terminated t2.micro – View alarms us-east-2b
web1 i-0ca6c952d451d2f0f Terminated t2.micro – View alarms us-east-2a
Tearaform-pr... i-03cd4641d5cec3284 Running t2.micro 2/2 checks passec View alarms us-east-2a
web1 i-096fdbf7fd70805b6 Running t2.micro 2/2 checks passec View alarms us-east-2a
web2 i-058c60b5b079c4877 Running t2.micro 2/2 checks passec View alarms us-east-2b

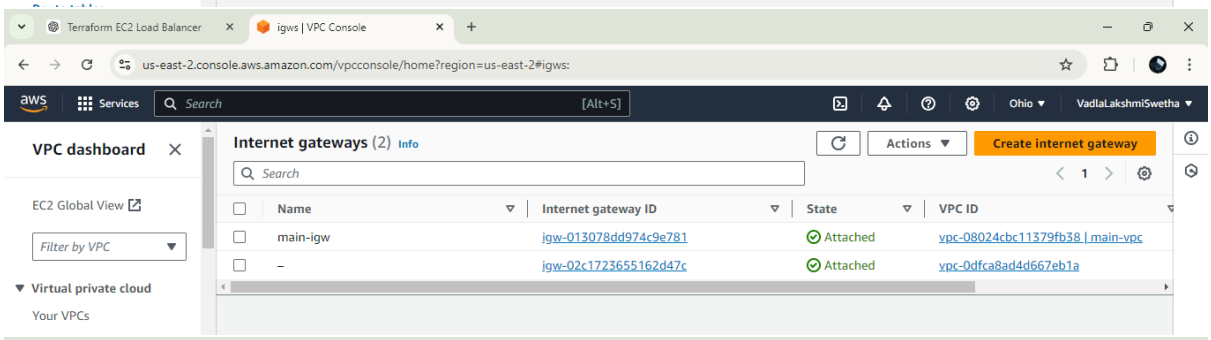

Terraform EC2 Load Balancer
Security groups | EC2 | us-east-
us-east-2.console.aws.amazon.com/ec2/home?region=us-east-2#SecurityGroups:
Services
Search
[Alt+S]
Ohio
VadlaLakshmiSwetha
Reservations New
Images
AMIs
AMI Catalog
Elastic Block Store
Volumes
Security Groups (5) Info
Actions
Export security groups to CSV
Create security group
Find resources by attribute or tag
Name
Security group ID
Security group name
VPC ID
– sg-0ba8ab0fdd7cb8525 default_elb_88c39507-76ac-3388-94... vpc-0dfca8ad4d667eb1a
– sg-05e249ac978197aaa T-P vpc-0dfca8ad4d667eb1a

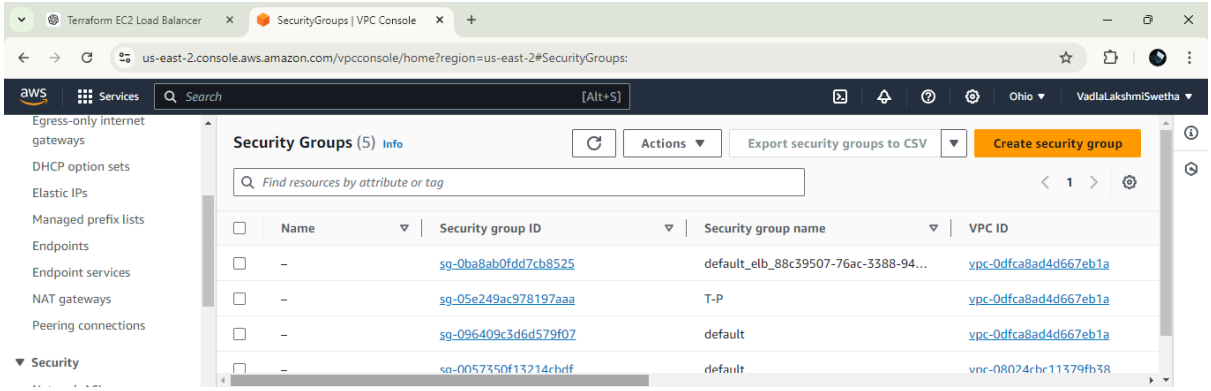

Terraform EC2 Load Balancer
Load balancers | EC2 | us-east-2
us-east-2.console.aws.amazon.com/ec2/home?region=us-east-2#LoadBalancers:
Services
Search
[Alt+S]
Ohio
VadlaLakshmiSwetha
Snapshots
Lifecycle Manager
Network & Security
Security Groups
Elastic IPs
Placement Groups
Key Pairs
Network Interfaces
Load Balancing
EC2 > Load balancers
Load balancers (1)
Actions
Create load balancer
Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.
Filter load balancers
Name
DNS name
State
VPC ID
Availability Zones
web-lb web-lb-501633889.us-eas... – vpc-0dfca8ad4d667eb1a 2 Availability Zones


Terraform EC2 Load Balancer
vpcs | VPC Console
us-east-2.console.aws.amazon.com/vpcconsole/home?region=us-east-2#vpcs:
Services
Search
[Alt+S]
Ohio
VadlaLakshmiSwetha
VPC dashboard
EC2 Global View
Filter by VPC
Virtual private cloud
Your VPCs (2) Info
Last updated less than a minute ago
Actions
Create VPC
Search
Name
VPC ID
State
IPv4 CIDR
IPv6 CIDR
main-vpc vpc-08024cbc11379fb38 Available 10.0.0.0/16 –
– vpc-0dfca8ad4d667eb1a Available 172.31.0.0/16 –


Terraform EC2 Load Balancer
subnets | VPC Console
us-east-2.console.aws.amazon.com/vpcconsole/home?region=us-east-2#subnets:
Services
Search
[Alt+S]
Ohio
VadlaLakshmiSwetha
VPC dashboard
EC2 Global View
Filter by VPC
Virtual private cloud
Your VPCs
Subnets
Route tables
Subnets (5) Info
Last updated less than a minute ago
Actions
Create subnet
Find resources by attribute or tag
Name
Subnet ID
State
VPC
IPv4 CIDR
– subnet-0e32e9641cb7b6a50 Available vpc-0dfca8ad4d667eb1a 172.31.32
subnet1 subnet-01f5a18ac1c300db6 Available vpc-08024cbc11379fb38 | main... 10.0.1.0/2
– subnet-02ccf1b6124ff28ea Available vpc-0dfca8ad4d667eb1a 172.31.16.
subnet2 subnet-03445207af060a690 Available vpc-08024cbc11379fb38 | main... 10.0.2.0/2
– subnet-0f6f736dfa65e23c6 Available vpc-0dfca8ad4d667eb1a 172.31.0.








```
root@ip-172-31-1-180:~/terraform# terraform destroy
```

```
root@ip-172-31-1-180: ~/terraform

aws_elb.web-lb: Destroying... [id=web-lb]
aws_instance.web1: Destroying... [id=i-096fdbf7fd70805b6]
aws_route_table_association.subnet2-association: Destroying... [id=rtbassoc-0e1324751935d6b67]
aws_instance.web2: Destroying... [id=i-058c60b5b079c4877]
aws_route_table_association.subnet1-association: Destroying... [id=rtbassoc-0d06c1cc54c5a1924]
aws_route_table_association.subnet2-association: Destruction complete after 0s
aws_route_table_association.subnet1-association: Destruction complete after 0s
aws_route_table.rt: Destroying... [id=rtb-025be620cdffcf9b6]
aws_elb.web-lb: Destruction complete after 0s
aws_route_table.rt: Destruction complete after 0s
aws_internet_gateway.igw: Destroying... [id=igw-013078dd974c9e781]
aws_internet_gateway.igw: Destruction complete after 1s
aws_instance.web1: Still destroying... [id=i-096fdbf7fd70805b6, 10s elapsed]
aws_instance.web2: Still destroying... [id=i-058c60b5b079c4877, 10s elapsed]
aws_instance.web1: Still destroying... [id=i-096fdbf7fd70805b6, 20s elapsed]
aws_instance.web2: Still destroying... [id=i-058c60b5b079c4877, 20s elapsed]
aws_instance.web1: Still destroying... [id=i-096fdbf7fd70805b6, 30s elapsed]
aws_instance.web2: Still destroying... [id=i-058c60b5b079c4877, 30s elapsed]
aws_instance.web1: Still destroying... [id=i-096fdbf7fd70805b6, 40s elapsed]
aws_instance.web2: Still destroying... [id=i-058c60b5b079c4877, 40s elapsed]
aws_instance.web2: Destruction complete after 40s
aws_subnet.subnet2: Destroying... [id=subnet-03445207af060a690]
aws_instance.web1: Destruction complete after 40s
aws_subnet.subnet1: Destroying... [id=subnet-01f5a18ac1c300db6]
aws_security_group.web-sg: Destroying... [id=sg-0e6e5325997979de6]
aws_subnet.subnet2: Destruction complete after 0s
aws_subnet.subnet1: Destruction complete after 0s
aws_security_group.web-sg: Destruction complete after 0s
aws_vpc.main: Destroying... [id=vpc-08024cbc11379fb38]
aws_vpc.main: Destruction complete after 1s

Destroy complete! Resources: 11 destroyed.
root@ip-172-31-1-180:~/terraform#
```