

InClass Assignment - Elastic BeanStalk using Terraform (Due by: 11-10-2023)

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CLCM3504: Continuous Integration and Continuous Deployment for cloud Applications

Preparation:

I have got the aws credentials and do few required changes in the terraform code and give the terraform commands to initialize, Plan, apply and destroy.

Observation:

While doing the task I have forgot to change the VPC ID and its subnet id of my own aws management. So faced the issue regard the subnet not existing because of this I have changed and worked fine. Later came across another issue in auto-scaling setting so I have changed the name and value inside that.

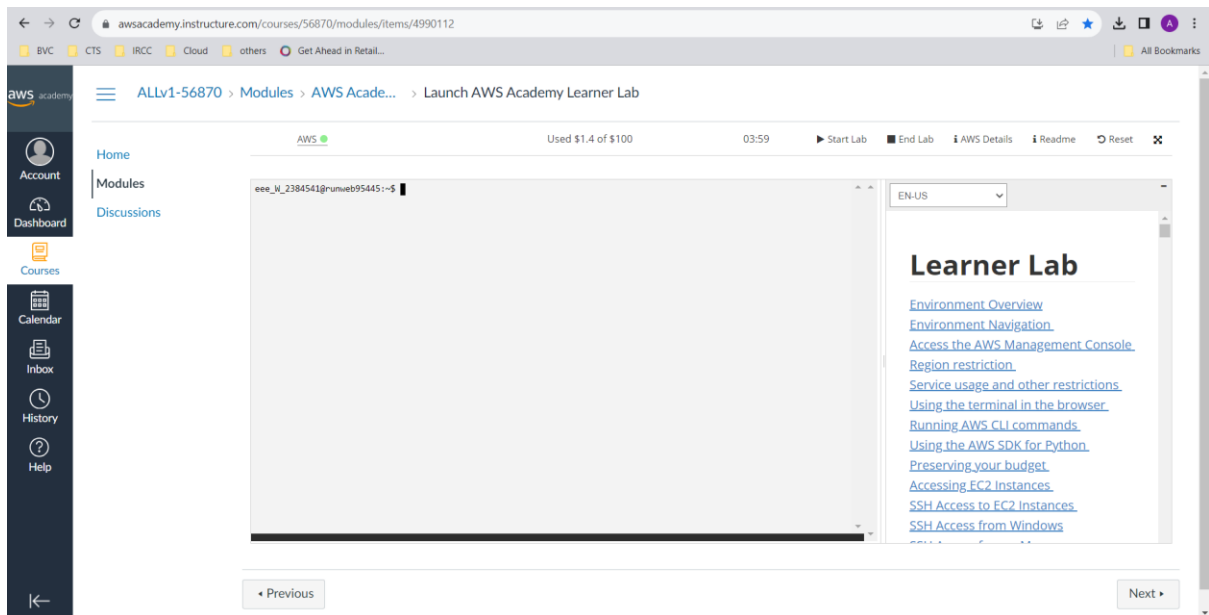
```
setting {  
    namespace = "aws:autoscaling:launchconfiguration"  
    name      = "IamInstanceProfile"  
    value     = "LabInstanceProfile"  
}
```

So these are the things I have learned , while configuring check the which environment we are running whether IAM or academy. And configure according to own AWS management console.

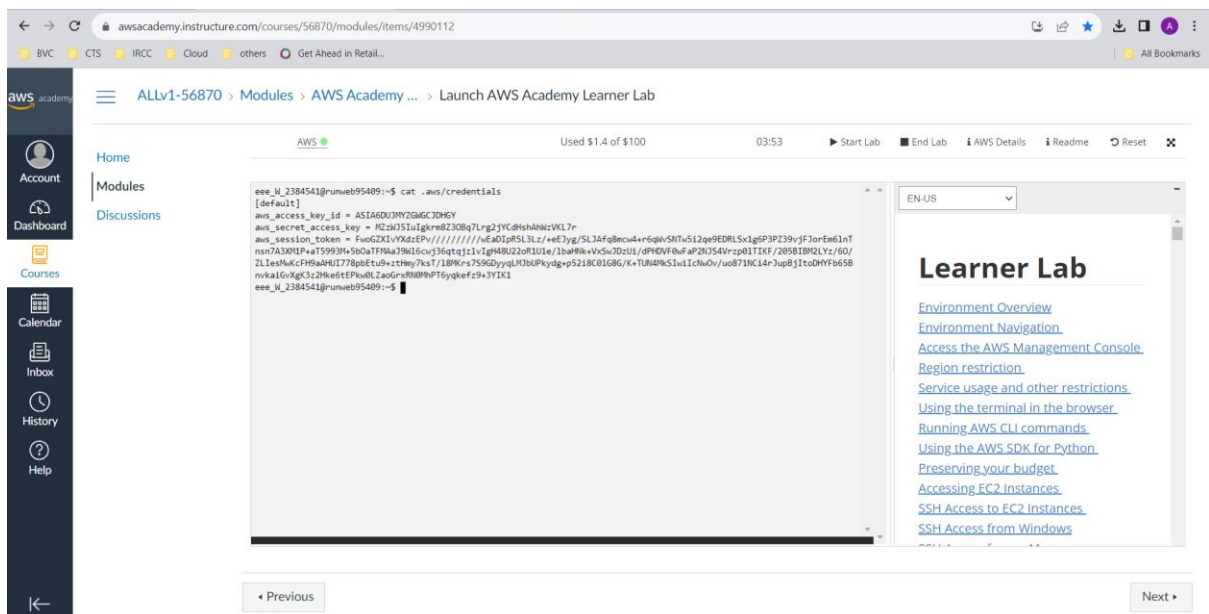
In my opinion, initially I felt terraform is difficult especially in the last class (terraform RDS). Now after completing this task I felt I have improved a bit after understood few basics.

Screenshots:

Open the learners lab and start the lab.



To get the access key id give the command as follows : “.aws/credentials”. Copy this and paste in the credential files in the users folder.



Now open the command prompt and give the command “ aws configure” and give the access key id and security key id which you got in the aws learners lab.

```
Command Prompt - terraform x + v
Microsoft Windows [Version 10.0.22621.2283]
(c) Microsoft Corporation. All rights reserved.

C:\Users\akila>aws configure
AWS Access Key ID [*****GUKN]: ASIA6DUJMYZGWGCJDHGY
AWS Secret Access Key [*****U70I]: MZzWJ5IuIgkrm8Z30Bq7Lrg2jYCdHshAhWzVKL7r
Default region name [None]:
Default output format [None]:

C:\Users\akila>cd C:\Users\akila\Desktop\BVC\terraform\ladEBS\Elastic BeanStalk Source Codes via Terraform

C:\Users\akila\Desktop\BVC\terraform\ladEBS\Elastic BeanStalk Source Codes via Terraform>terraform init

Initializing the backend...

Initializing provider plugins...
- Finding latest version of hashicorp/aws...
- Installing hashicorp/aws v5.20.1...
|
```

Now navigate the path to the folder directory where you have the terraform code. Also open the terraform code in visual studio code.

After that give the command “ terraform init” to initialize the terraform. Later give “terraform plan”

```
Command Prompt - terraform x + v
Default output format [None]:

C:\Users\akila>cd C:\Users\akila\Desktop\BVC\terraform\ladEBS\Elastic BeanStalk Source Codes via Terraform

C:\Users\akila\Desktop\BVC\terraform\ladEBS\Elastic BeanStalk Source Codes via Terraform>terraform init

Initializing the backend...

Initializing provider plugins...
- Finding latest version of hashicorp/aws...
- Installing hashicorp/aws v5.20.1...
- Installed hashicorp/aws v5.20.1 (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.

C:\Users\akila\Desktop\BVC\terraform\ladEBS\Elastic BeanStalk Source Codes via Terraform>terraform plan
```

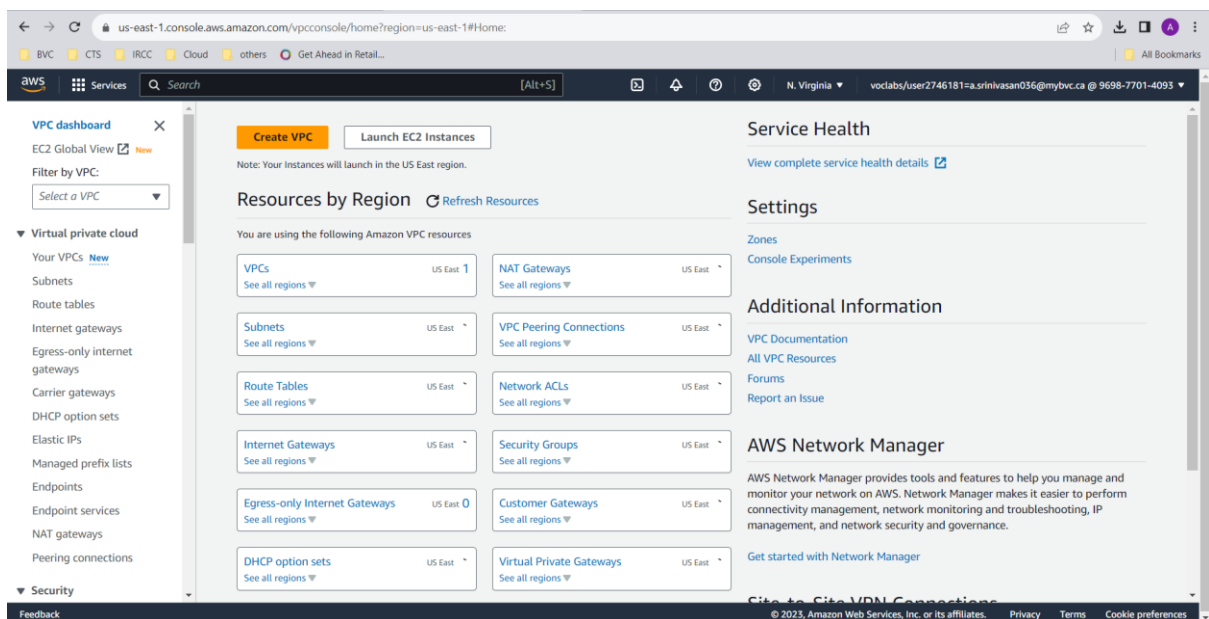
```
Command Prompt
}
+ setting {
+   name       = "MatcherHTTPCode"
+   namespace  = "aws:elasticbeanstalk:environment:process:default"
+   value      = "200"
+ }
+ setting {
+   name       = "MaxSize"
+   namespace  = "aws:autoscaling:asg"
+   value      = "2"
+ }
+ setting {
+   name       = "MinSize"
+   namespace  = "aws:autoscaling:asg"
+   value      = "1"
+ }
+ setting {
+   name       = "Subnets"
+   namespace  = "aws:ec2:vpc"
+   value      = "subnet-e91246a4,subnet-5736b008"
+ }
+ setting {
+   name       = "SystemType"
+   namespace  = "aws:elasticbeanstalk:healthreporting:system"
+   value      = "enhanced"
+ }
+ setting {
+   name       = "VPCId"
+   namespace  = "aws:ec2:vpc"
+   value      = "vpc-551dcc28"
+ }
}

Plan: 2 to add, 0 to change, 0 to destroy.

Note: You didn't use the -out option to save this plan, so Terraform can't guarantee to take exactly these actions if you run "terraform apply" now.

C:\Users\akila\Desktop\BVC\terraform\ladEBS\Elastic BeanStalk Source Codes via Terraform>
```

Before that change the code according to the requirements. Like change the VPC ID, Subnets id for your default VPC. And also instance profile in autoscaling settings as it varies for IAM and academy lab.



us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#VpcDetails:VpcId=vpc-050524e447eb30cd0

BVC CTS IRCC Cloud others Get Ahead in Retail...

aws Services Search [Alt+S]

N. Virginia voclabs/user2746181=a.srinivasan036@mybvc.ca @ 9698-7701-4093

VPC dashboard
EC2 Global View **New**
Filter by VPC:
Select a VPC

Virtual private cloud
Your VPCs **New**
Subnets
Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
Endpoints
Endpoint services
NAT gateways
Peering connections

Security

VPC > Your VPCs > vpc-050524e447eb30cd0

vpc-050524e447eb30cd0

Actions

Details Info

Copied

vpc-050524e447eb30cd0

Tenancy: Default

Default VPC: Yes

Network Address Usage metrics: Disabled

State: **Available**

DHCP option set: dopt-0679b9a4c2c68c681

IPv4 CIDR: 172.31.0.0/16

Route 53 Resolver DNS Firewall rule groups: **Failed to load rule groups**

DNS hostnames: Enabled

Main route table: rtb-0b74cfff432dfa507

IPv6 pool: -

Owner ID: 969877014093

DNS resolution: Enabled

Main network ACL: acl-03be3e2f771e9d187

IPv6 CIDR (Network border group): -

Resource map New CIDRs Flow logs Tags Integrations

Resource map Info

VPC **Show details**
Your AWS virtual network

Subnets (6)
Subnets within this VPC

Route tables (1)
Route network traffic to resources

Net
Conn

CloudShell Feedback

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us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#SubnetDetails:subnetId=subnet-0e229614da4d46e1b

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DHCP option sets
Elastic IPs
Managed prefix lists
Endpoints
Endpoint services
NAT gateways
Peering connections

Security

VPC > Subnets > subnet-0e229614da4d46e1b

subnet-0e229614da4d46e1b

Actions

Details

Copied

subnet-0e229614da4d46e1b

Available IPv4 addresses: 4091

Network border group: us-east-1

Default subnet: Yes

Customer-owned IPv4 pool: -

IPv6-only: No

DNS64: Disabled

Subnet ARN: arn:aws:ec2:us-east-1:969877014093:subnet/subnet-0e229614da4d46e1b

IPv6 CIDR: -

VPC: vpc-050524e447eb30cd0

Auto-assign public IPv4 address: Yes

Outpost ID: -

Hostname type: IP name

Owner: 969877014093

State: **Available**

Availability Zone: us-east-1a

Route table: rtb-0b74cfff432dfa507

Auto-assign IPv6 address: No

IPv4 CIDR reservations: -

Resource name DNS A record: Disabled

IPv4 CIDR: 172.31.0.0/20

Availability Zone ID: use1-az1

Network ACL: acl-03be3e2f771e9d187

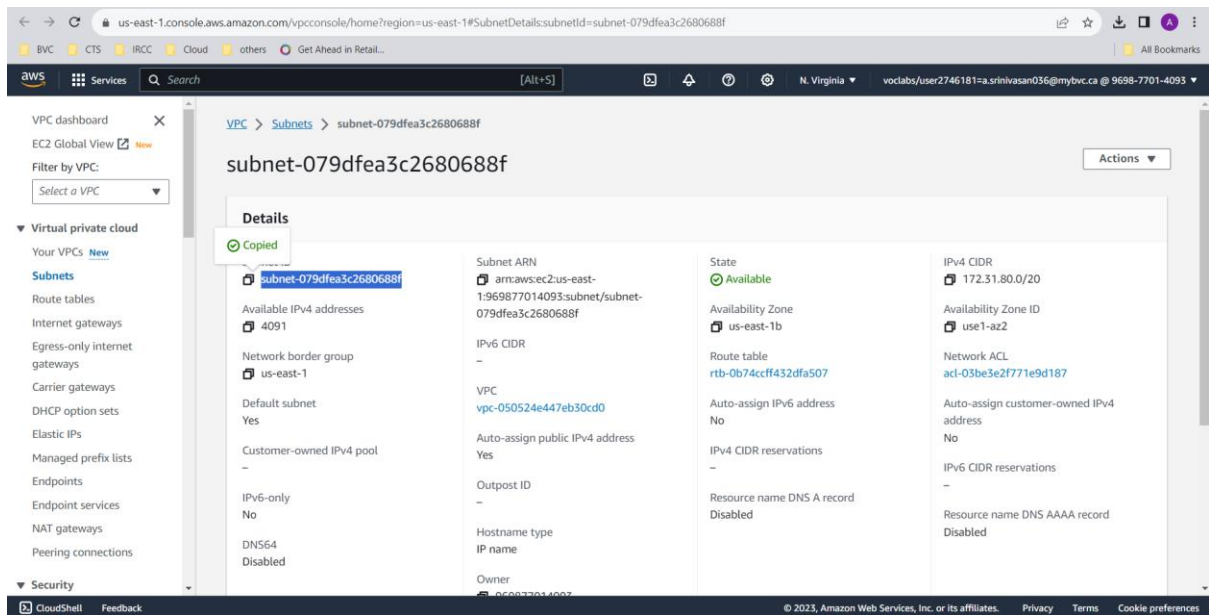
Auto-assign customer-owned IPv4 address: No

IPv6 CIDR reservations: -

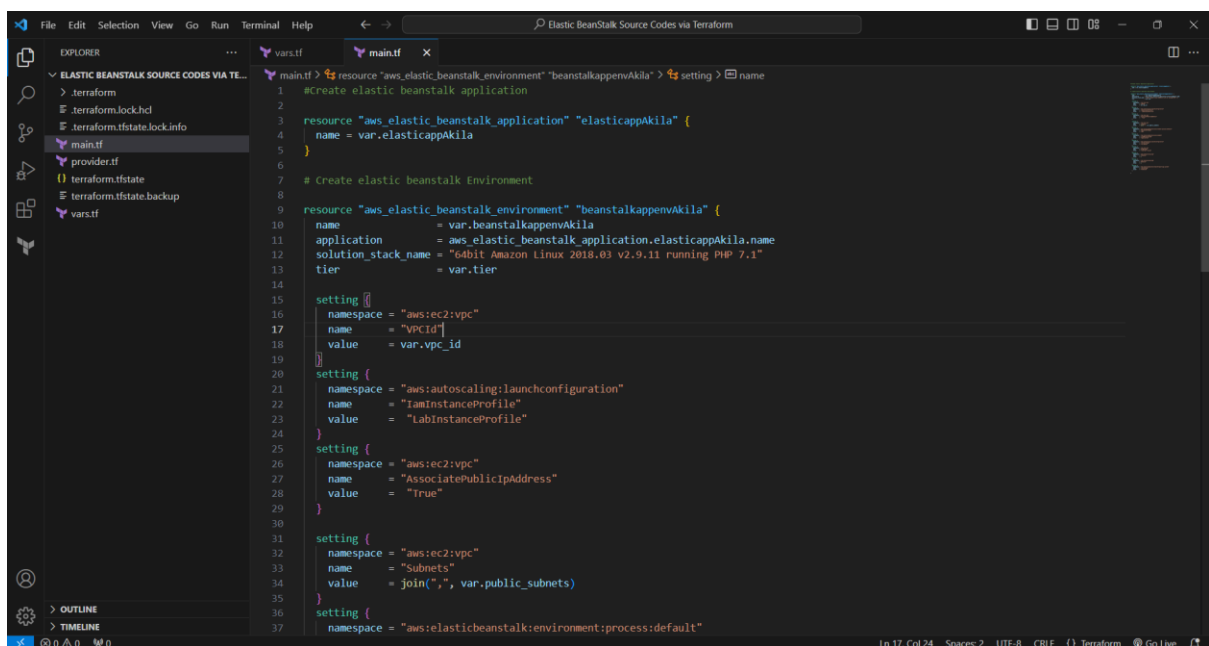
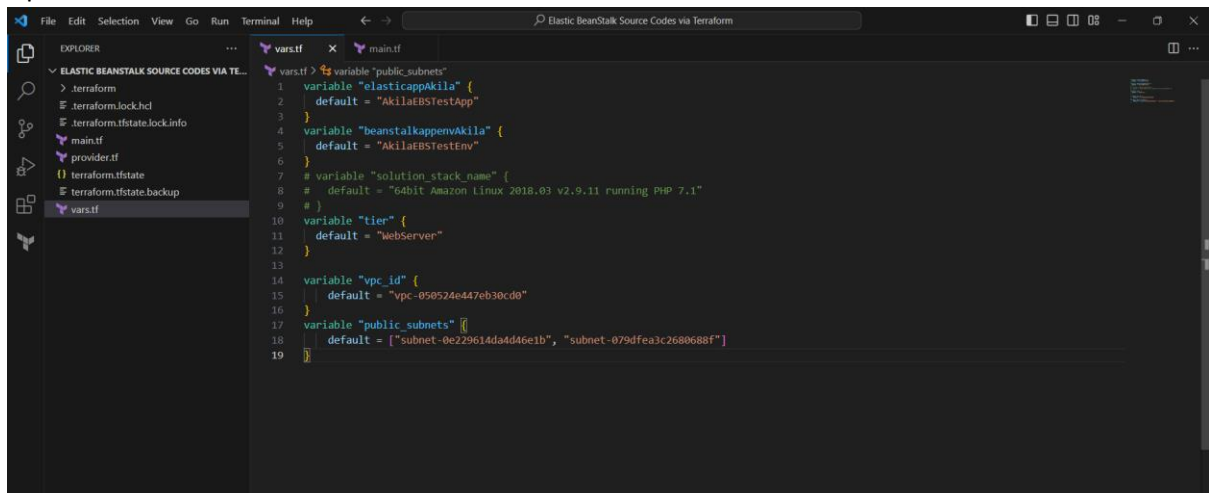
Resource name DNS AAAA record: Disabled

CloudShell Feedback

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Updated Code:



Then give “Terraform apply”

```
Command Prompt - terraform x + v
+ namespace = "aws:autoscaling:asg"
+ value     = "2"
}
+ setting {
+   name     = "MinSize"
+   namespace = "aws:autoscaling:asg"
+   value     = "1"
+ }
+ setting {
+   name     = "Subnets"
+   namespace = "aws:ec2:vpc"
+   value     = "subnet-0e229614da4d46e1b,subnet-079dfea3c2680688f"
+ }
+ setting {
+   name     = "SystemType"
+   namespace = "aws:elasticbeanstalk:healthreporting:system"
+   value     = "enhanced"
+ }
+ setting {
+   name     = "VPCId"
+   namespace = "aws:ec2:vpc"
+   value     = "vpc-050524e447eb30cd0"
+ }
}

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

Do you want to perform these actions?
  Terraform will perform the actions described above.
  Only 'yes' will be accepted to approve.

Enter a value: yes

aws_elastic_beanstalk_environment.beanstalkappenvAkila: Creating...
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [10s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [20s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [30s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [40s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [50s elapsed]
```

```
Command Prompt x + v
+ name     = "VPCId"
+ namespace = "aws:ec2:vpc"
+ value     = "vpc-050524e447eb30cd0"
}

Plan: 2 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
  Terraform will perform the actions described above.
  Only 'yes' will be accepted to approve.

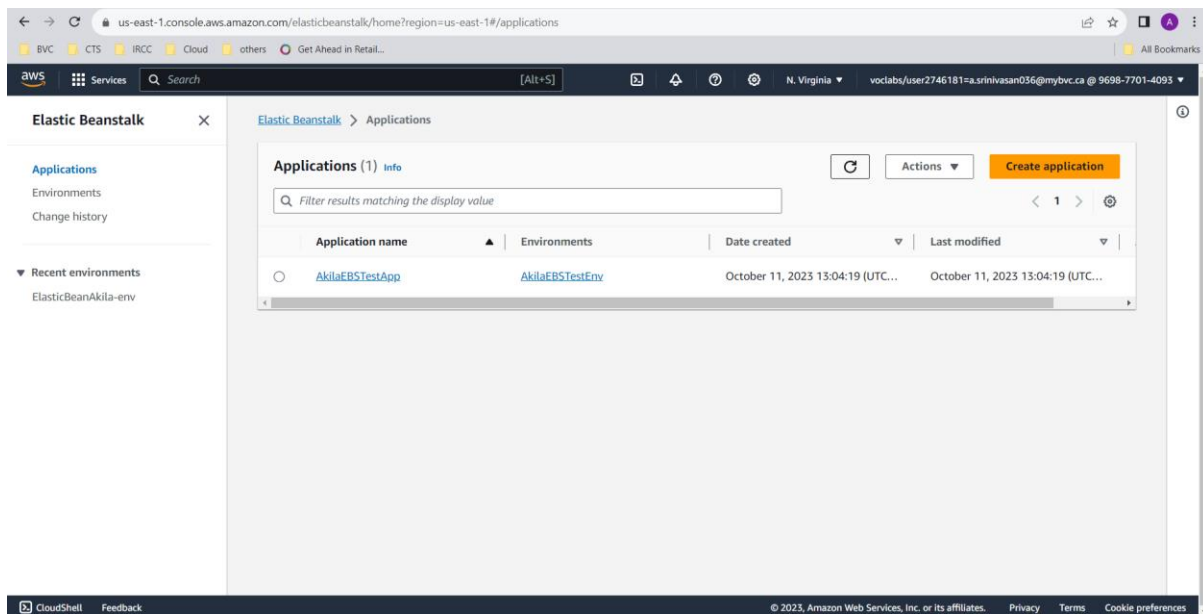
Enter a value: yes

aws_elastic_beanstalk_application.elasticappAkila: Creating...
aws_elastic_beanstalk_application.elasticappAkila: Creation complete after 2s [id=AkilaEBSTestApp]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Creating...
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [10s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [20s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [30s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [40s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [50s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [1m0s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [1m10s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [1m20s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [1m30s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [1m40s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [1m50s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [2m0s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [2m10s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [2m20s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [2m30s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [2m40s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [2m50s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Creation complete after 2m57s [id=e-yruqsupmrb]

Apply complete! Resources: 2 added, 0 changed, 0 destroyed.

C:\Users\akila\Desktop\BVC\terraform\ladEBS\Elastic BeanStalk Source Codes via Terraform>
```

After successfully applied. Check the Elastic BeanStalk in the management console.



```
Command Prompt
+ value = "enhanced"
}
+ setting {
+   name = "VPCId"
+   namespace = "aws:ec2:vpc"
+   value = "vpc-050524e447eb38cd0"
}
}

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

Do you want to perform these actions?
Terraform will perform the actions described above.
Only 'yes' will be accepted to approve.

Enter a value: yes

aws_elastic_beanstalk_environment.beanstalkappenvAkila: Creating...
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [10s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [20s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [30s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [40s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [50s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [1m0s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [1m10s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [1m20s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [1m30s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [1m40s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [1m50s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [2m0s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [2m10s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [2m20s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [2m30s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [2m40s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still creating... [2m50s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Creation complete after 2m58s [id=e-sp7s7uwvdr]

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

C:\Users\akila\Desktop\BVC\terraform\ladEBS\Elastic BeanStalk Source Codes via Terraform>
```

Then delete the Elastic BeanStalk which you have created by giving “terraform destroy” in cmd

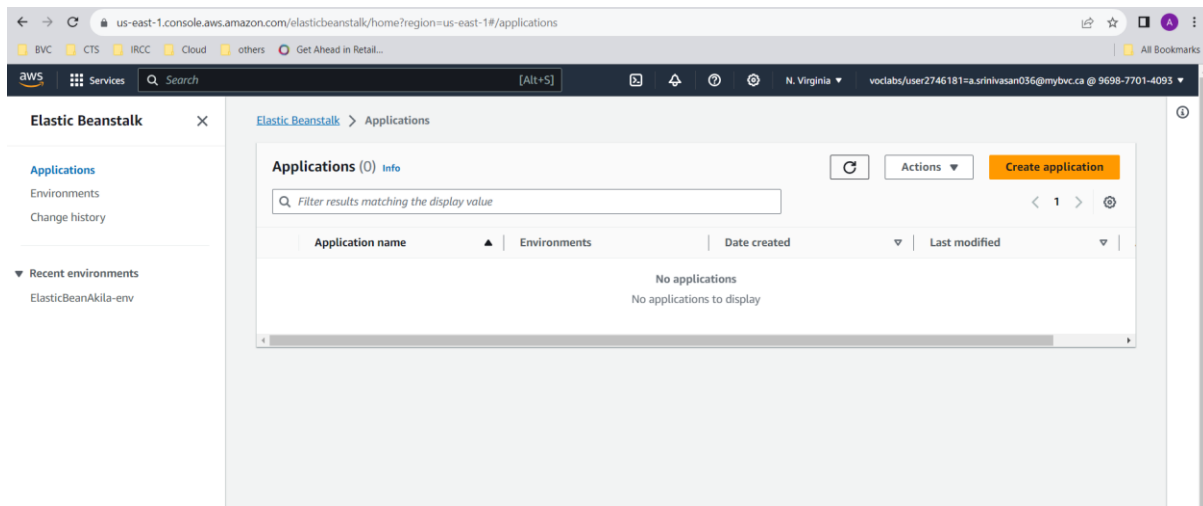

```
Command Prompt - terraform x + v
- name      = "MaxSize" -> null
- namespace = "aws:autoscaling:asg" -> null
- value     = "2" -> null
}
- setting {
- name      = "MinSize" -> null
- namespace = "aws:autoscaling:asg" -> null
- value     = "1" -> null
}
- setting {
- name      = "Subnets" -> null
- namespace = "aws:ec2:vpc" -> null
- value     = "subnet-079dfea3c2680688f,subnet-0e229614da4d46e1b" -> null
}
- setting {
- name      = "SystemType" -> null
- namespace = "aws:elasticbeanstalk:healthreporting:system" -> null
- value     = "enhanced" -> null
}
- setting {
- name      = "VPCId" -> null
- namespace = "aws:ec2:vpc" -> null
- value     = "vpc-050524e447eb30cd0" -> null
}
}

Plan: 0 to add, 0 to change, 2 to destroy.

Do you really want to destroy all resources?
Terraform will destroy all your managed infrastructure, as shown above.
There is no undo. Only 'yes' will be accepted to confirm.

Enter a value: yes

aws_elastic_beanstalk_environment.beanstalkappenvAkila: Destroying... [id=e-sp7s7uwvdr]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still destroying... [id=e-sp7s7uwvdr, 10s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still destroying... [id=e-sp7s7uwvdr, 20s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still destroying... [id=e-sp7s7uwvdr, 30s elapsed]
aws_elastic_beanstalk_environment.beanstalkappenvAkila: Still destroying... [id=e-sp7s7uwvdr, 40s elapsed]
```



Reference :

www.google.com ,

https://registry.terraform.io/providers/hashicorp/aws/latest/docs/resources/elastic_beanstalk_environment