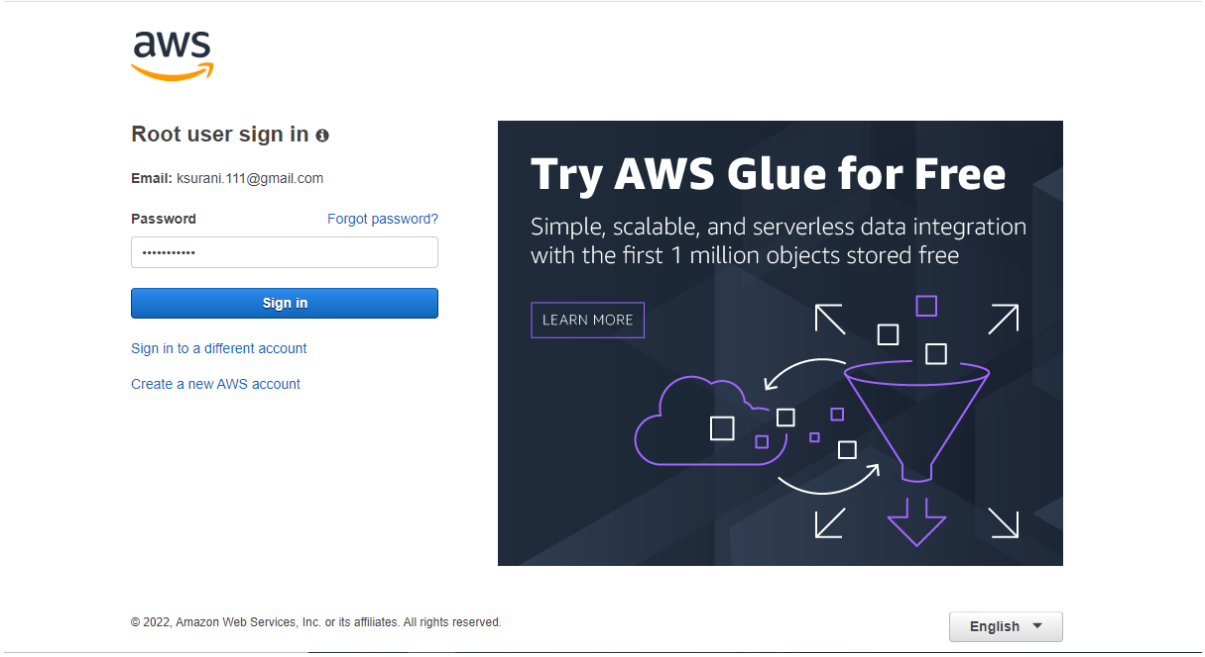
AWS Elastic Beanstalk

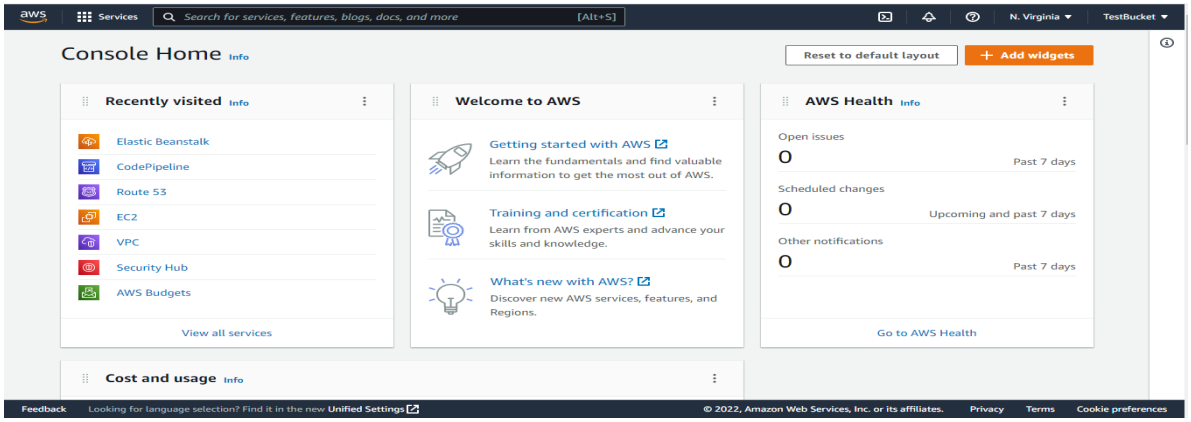
Environment Setup for Web Application

Login

Login to AWS console if you are root user else user can sign up with necessary information
https://aws.amazon.com/console/

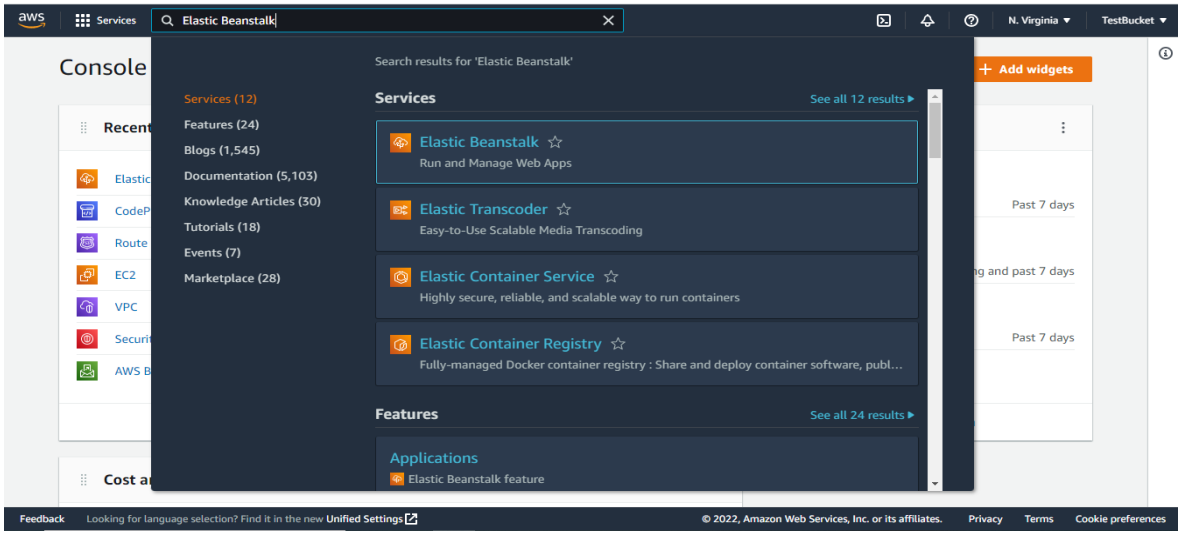


AWS Console Dashboard.



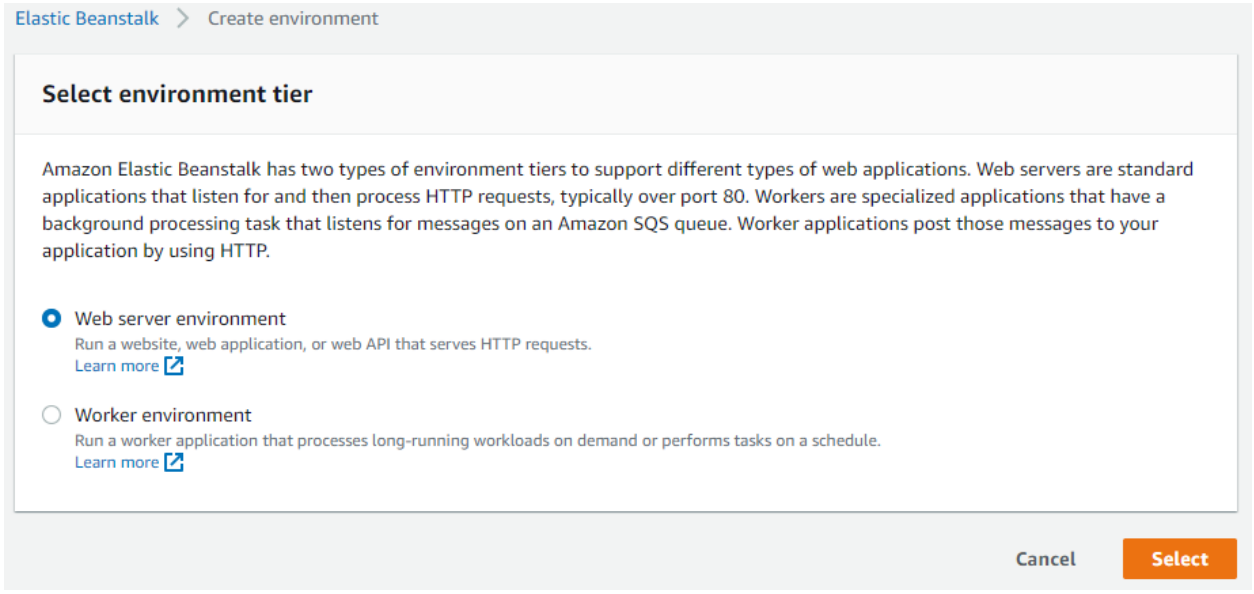
Elastic Beanstalk

Search "**Elastic beanstalk**" in the search box. And Navigate to the Elastic beanstalk module.



Click on "Create a new environment"

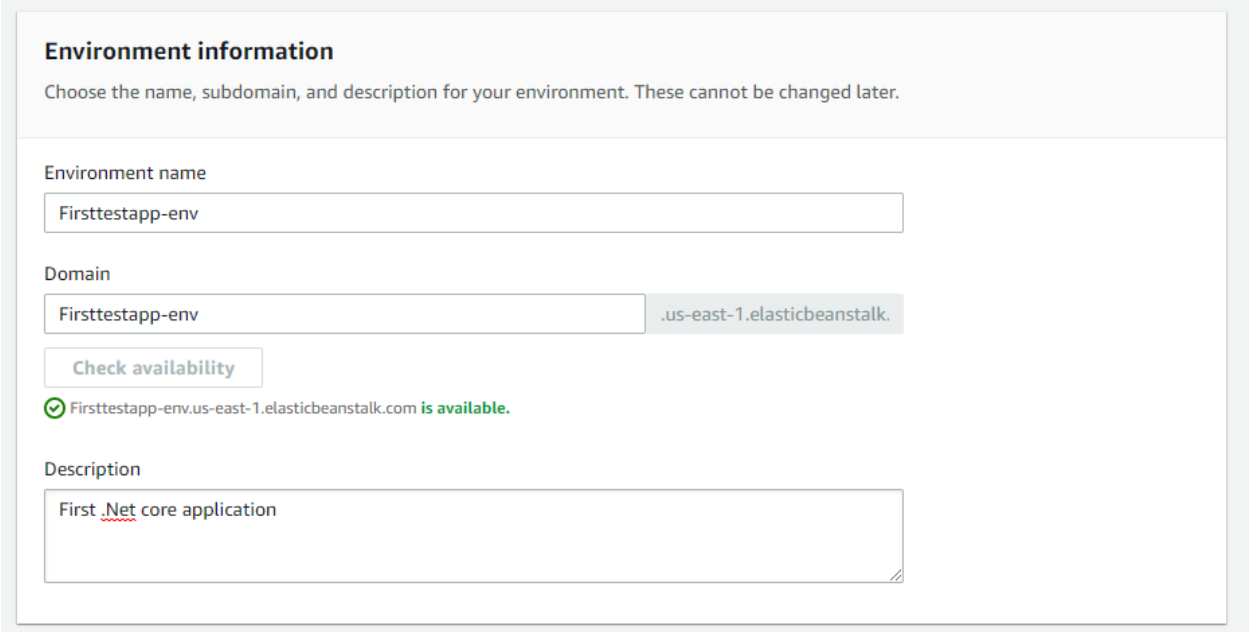
Select environment tier and it should be "**Web server environment**"



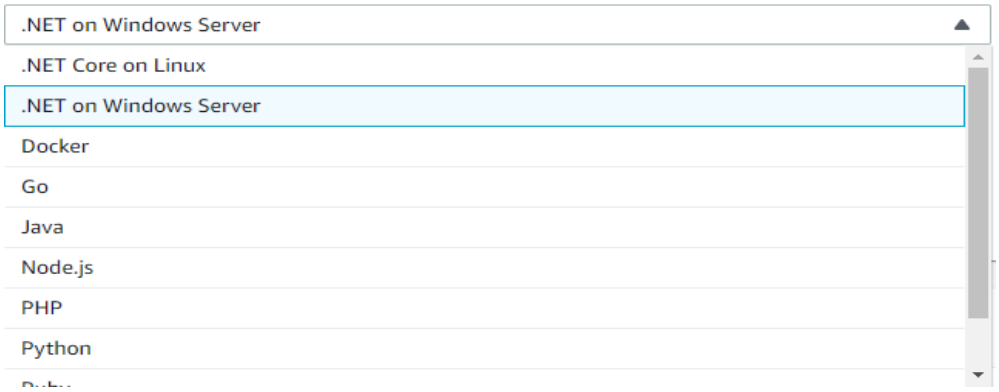
Give the web application name. Also you can define the Application tags with Key and Value; those are optional.

Environment name will be auto populated based on the given application name.

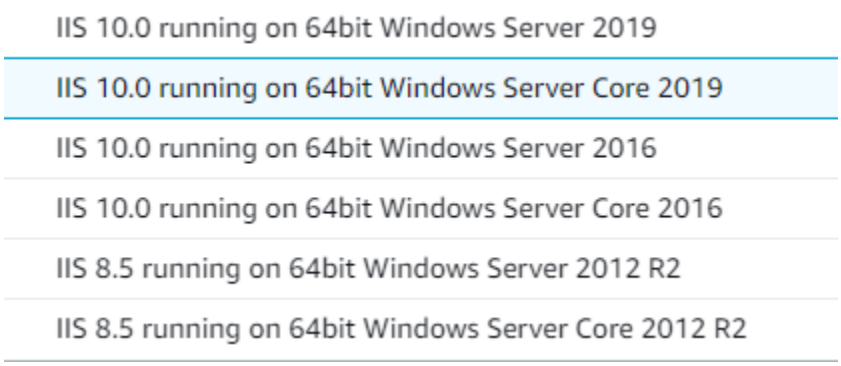
You can put/give the domain prefix name. Also, Give/put the description information for your reference purpose.



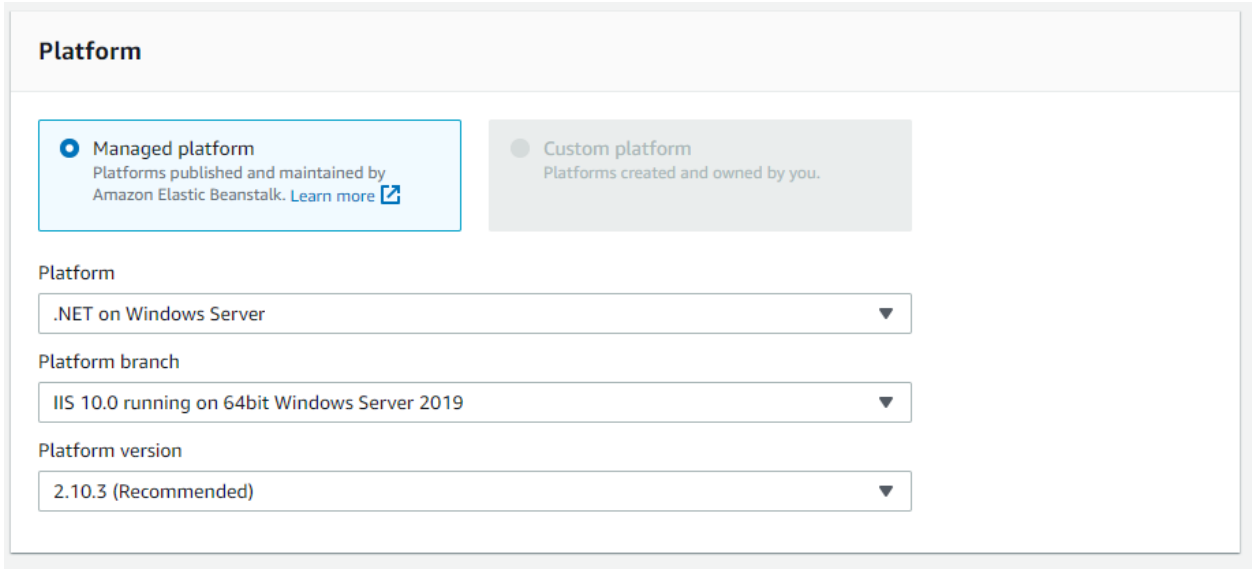
You opt in the platform information and platform versions.



Available platforms

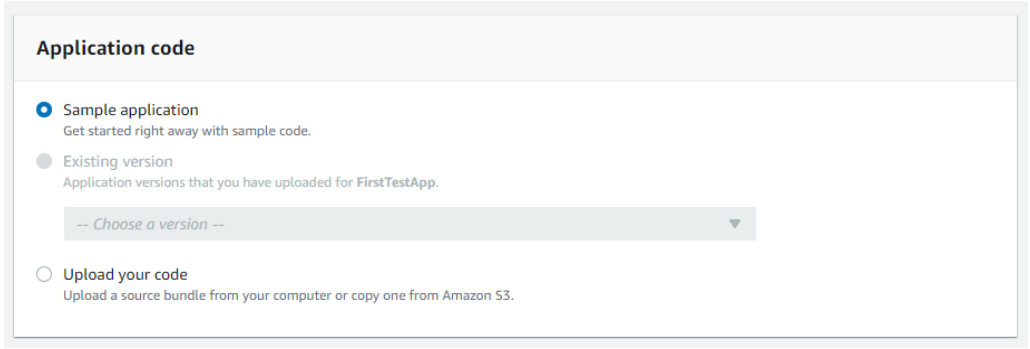


Users can choose as per the business need and move to next.

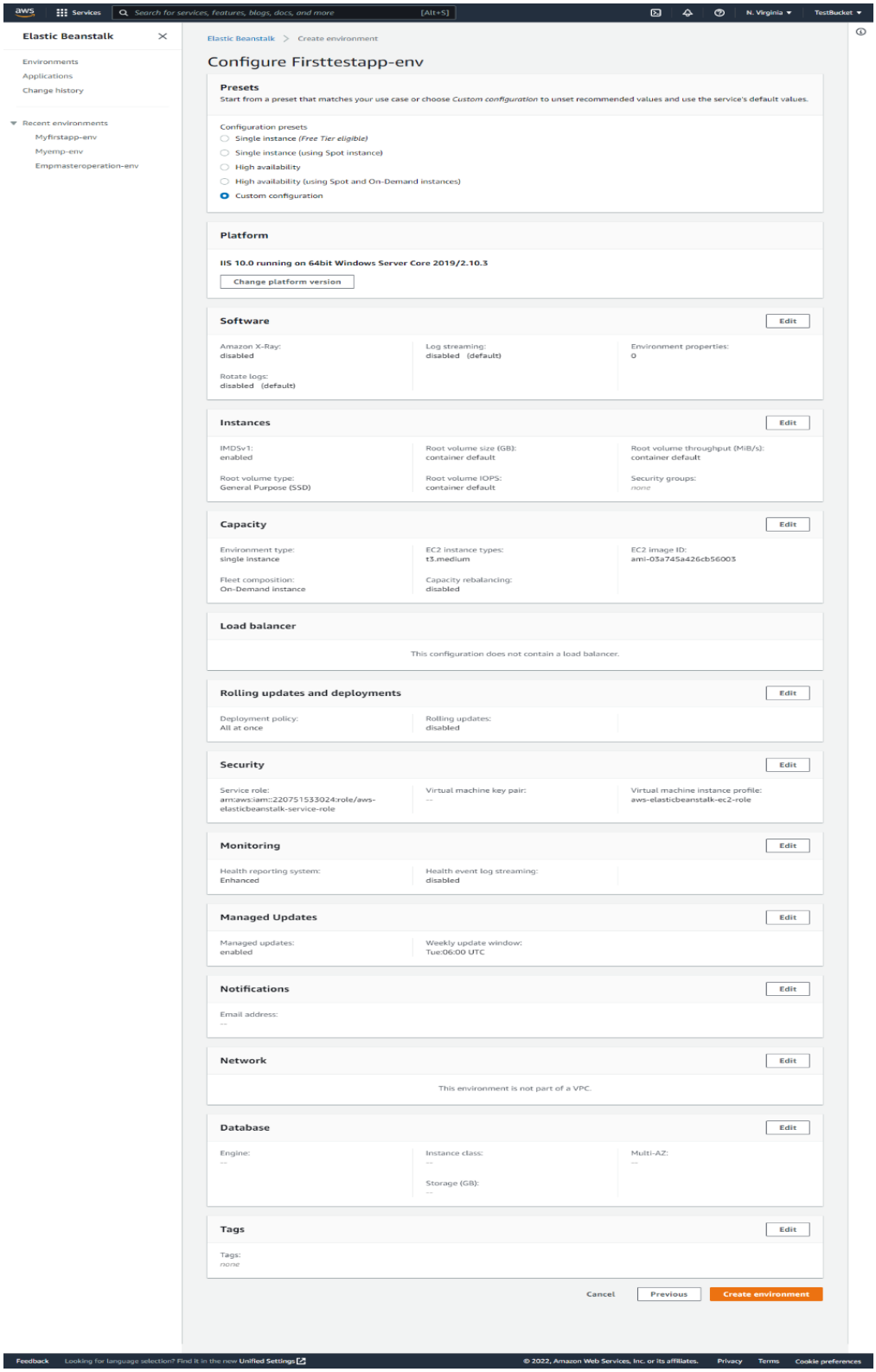


Users can have the option to choose the source code.

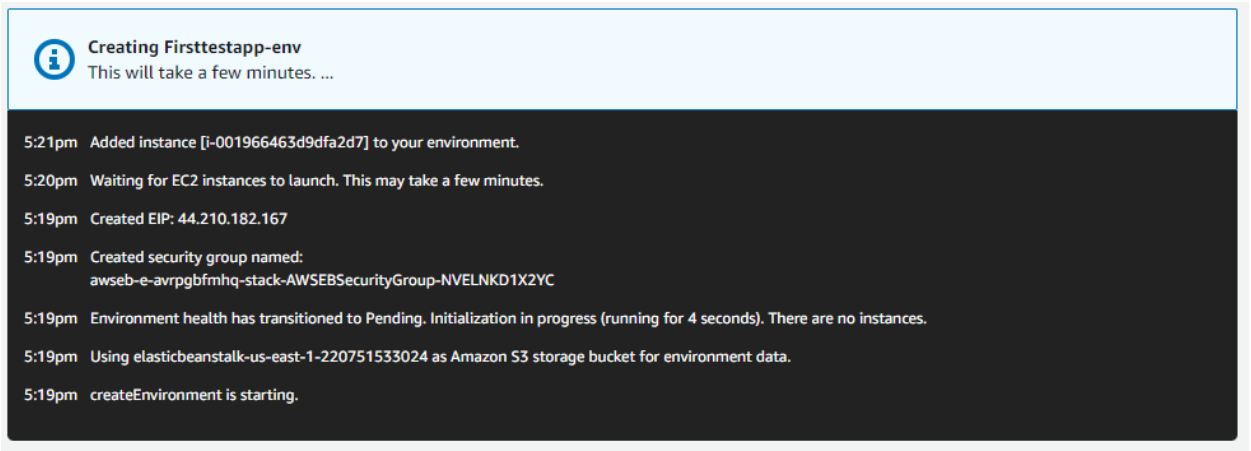
1. Sample application(default sample application from AWS)
2. Upload your code
    a. Users can upload the code from either s3 or from the local file system.



Also, User can select the configuration as per the business requirement.

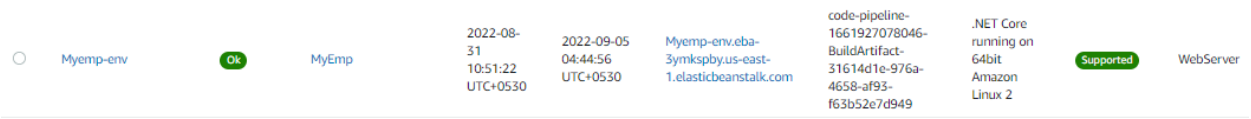


It will take some time to set up your application environment.



It will create the default security groups and other configuration.

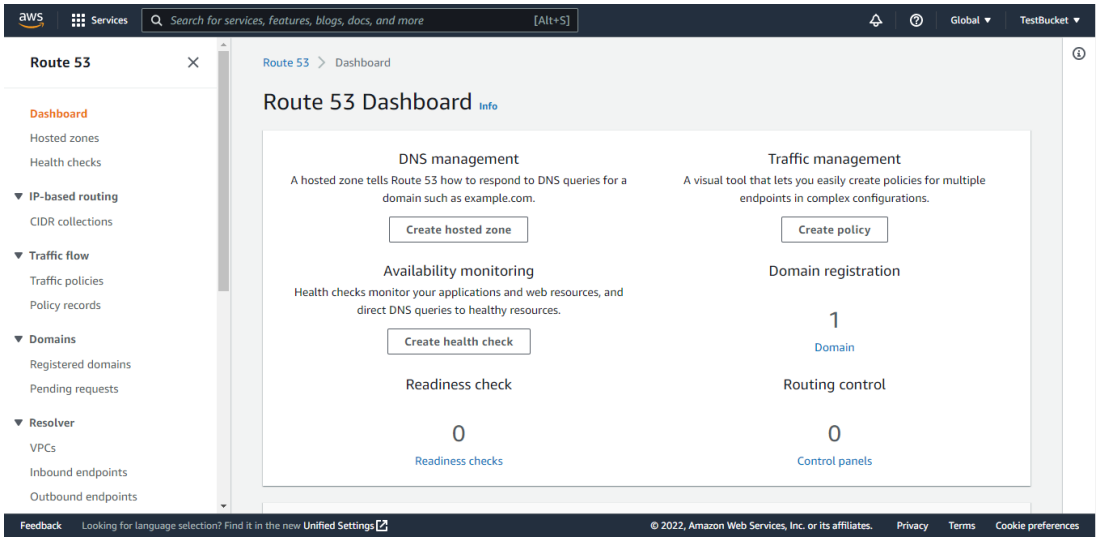
Once the environment is created , Your environment will be created and shown as below.



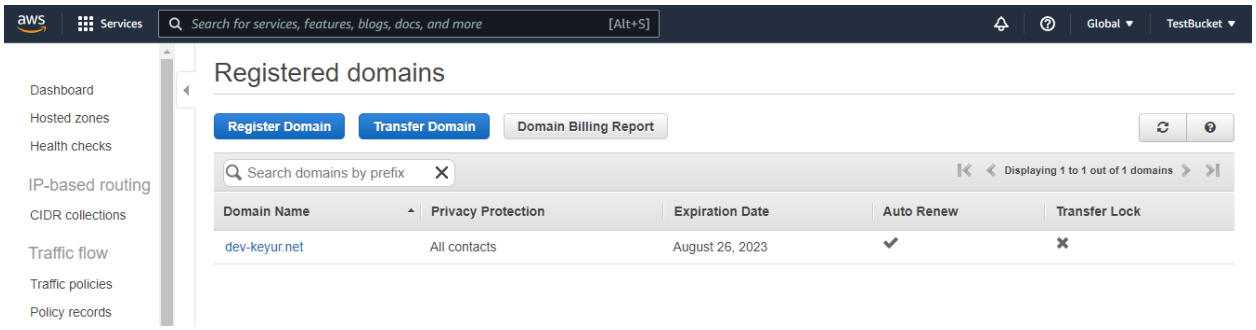
Users can browse the sample application from the application as well from the environment.

Route 53(Domain binding/pointing)

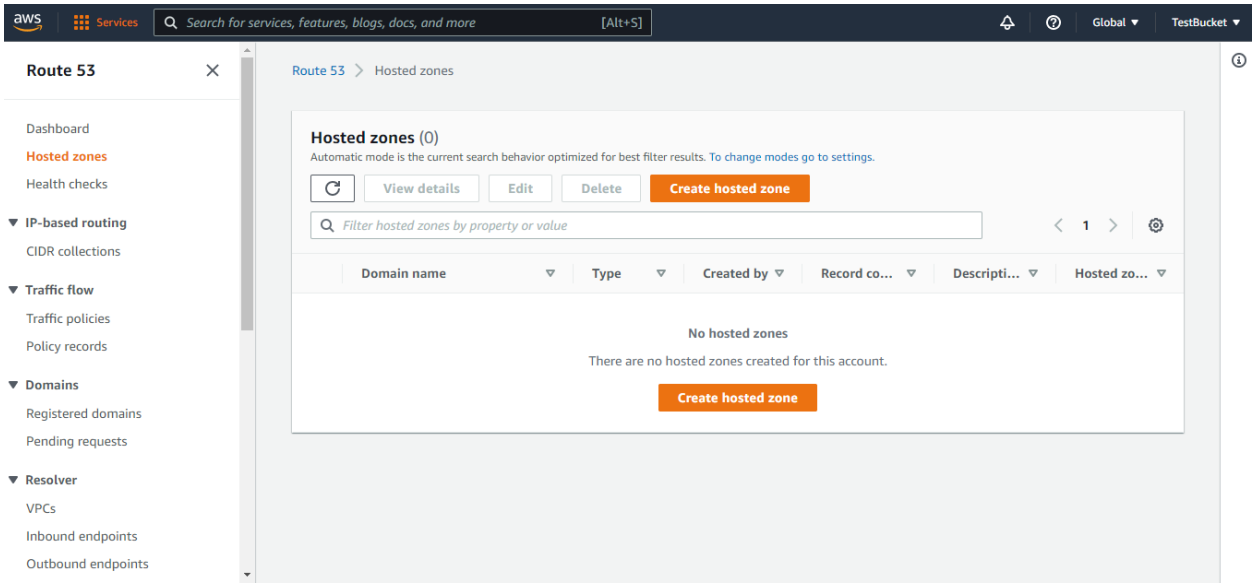
Search Route 53 in the AWS console and navigate to it.



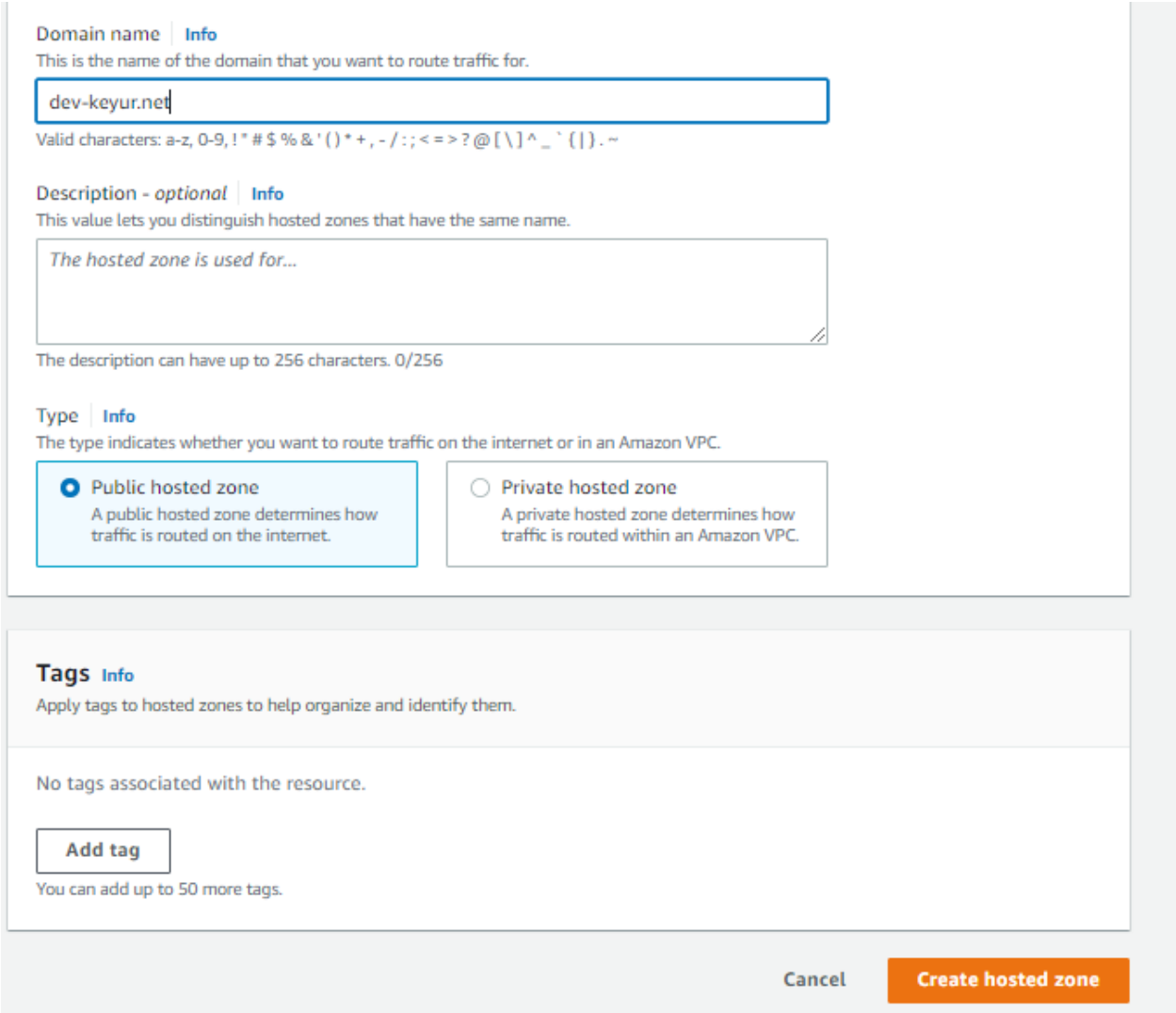
Users can click on Registered domains(under Domain tab left menu)



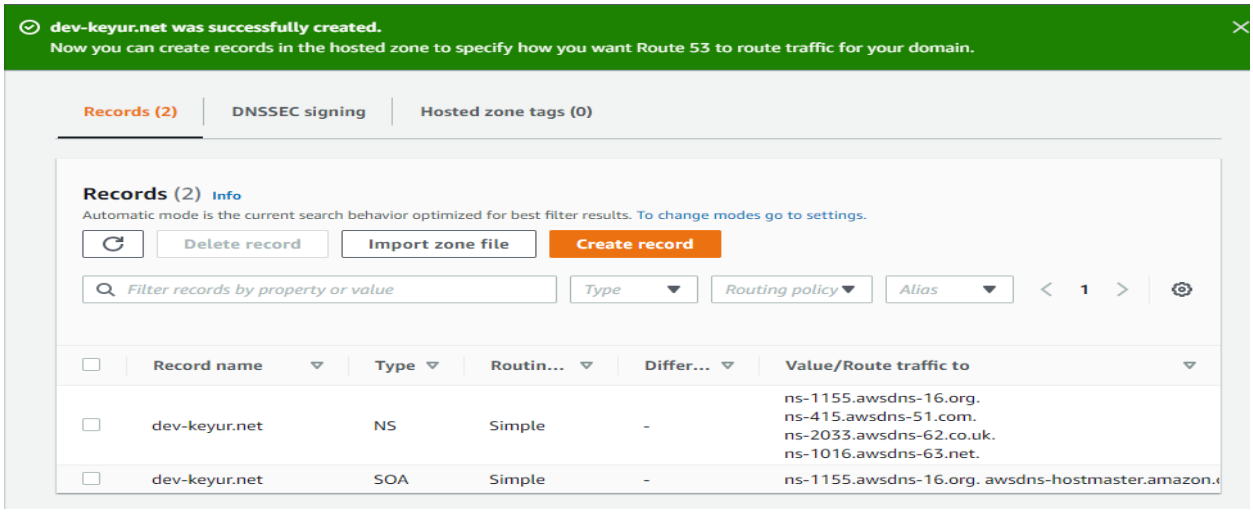
Navigate to the “Hosted Zones” and create the hosted zone.

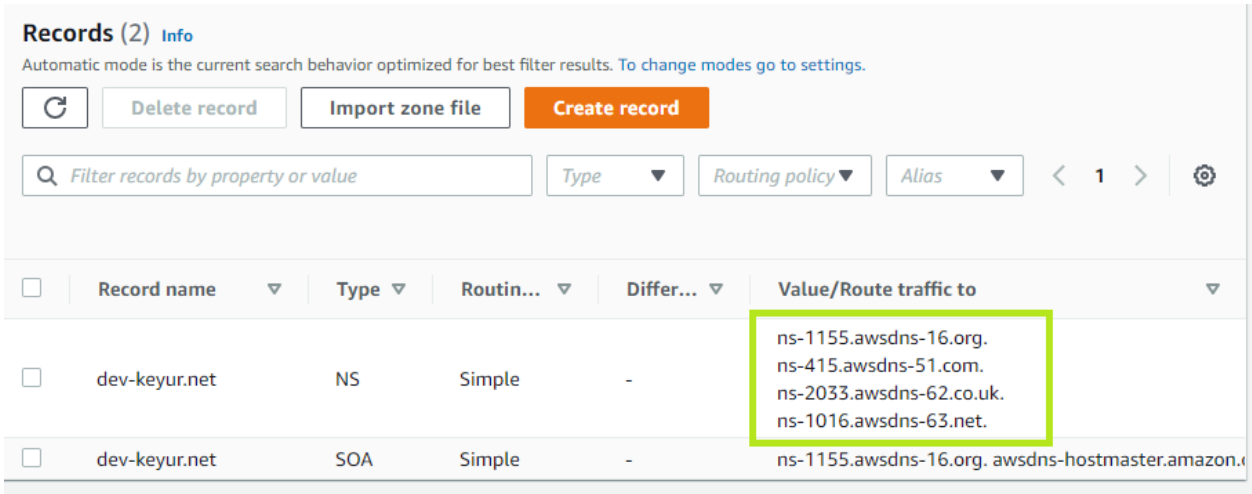


Give your domain name and select the “public hosted zone” click on “create hosted zone”

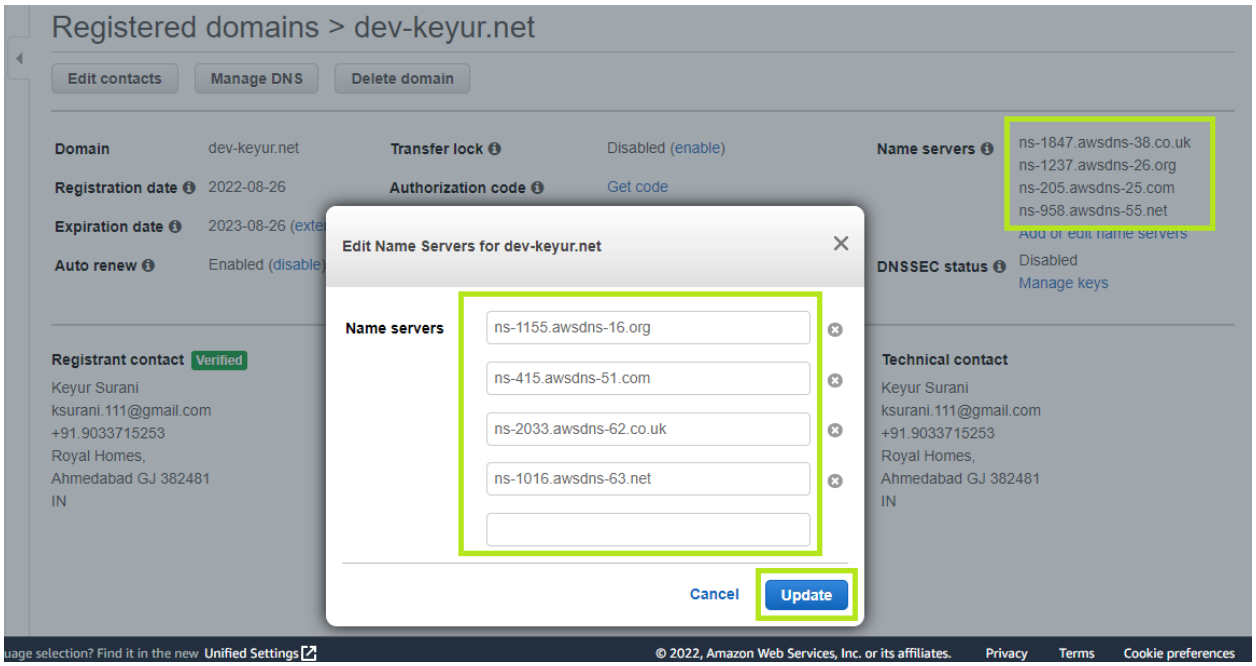


Created hosted zone will be listed as below. Keep a note of Value/Route traffic.

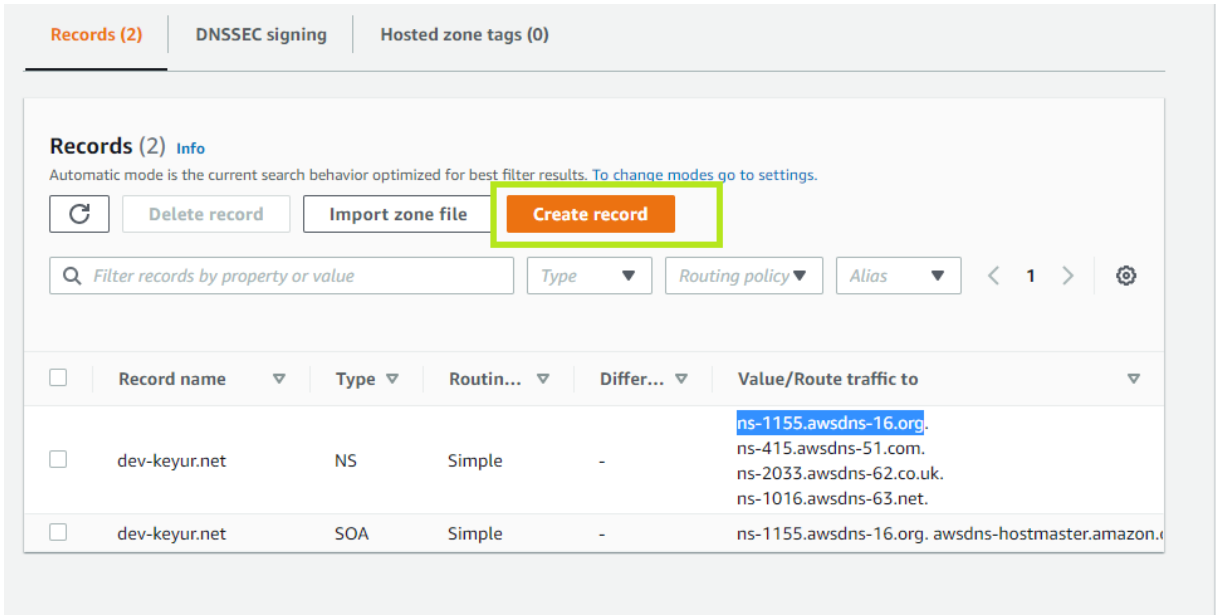




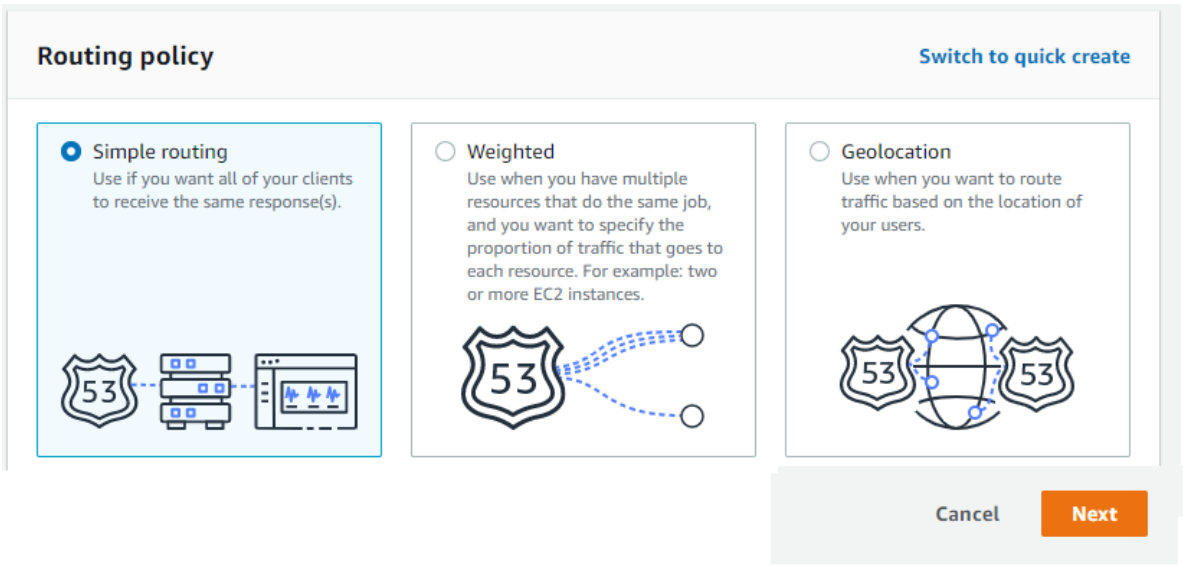
Copy the Highlighted “value/Route traffic to” and navigate to your registered domain. Update the server name values from “Records” Record and name server should match(if not then update those from Records)



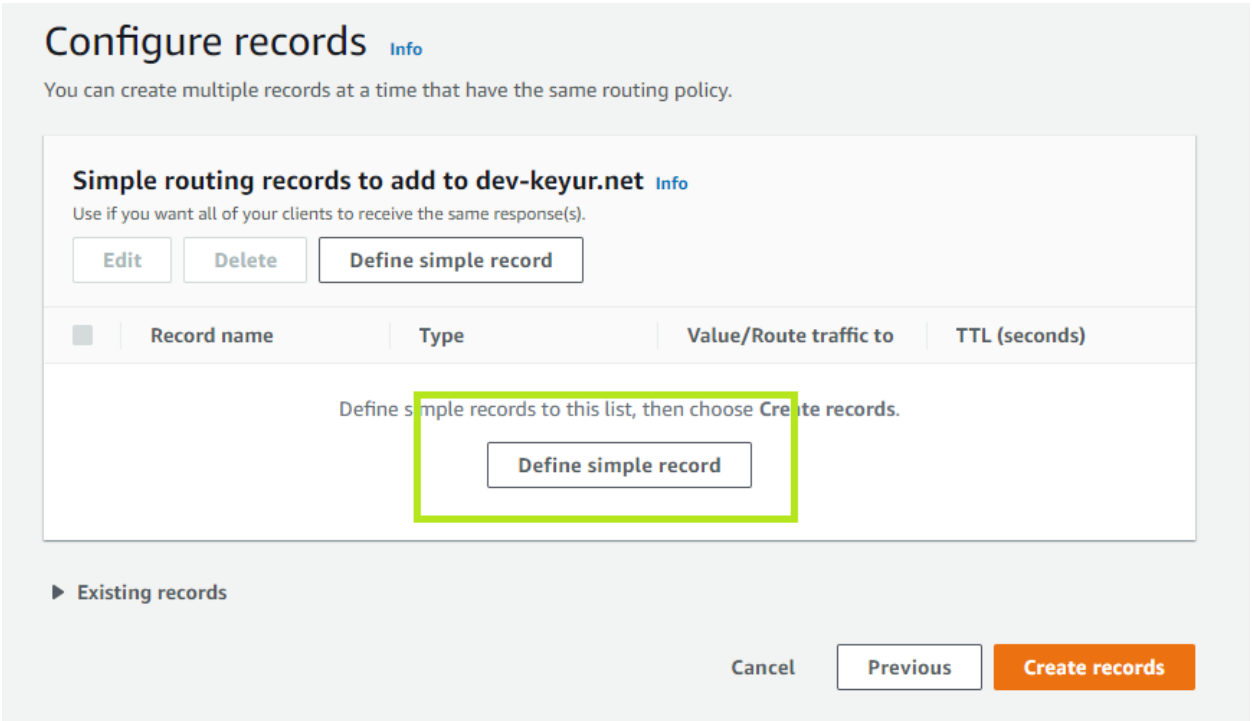
Navigate to hosted zones and click on create a record.



Click on simple routing and click next.



Click on “Define Simple records” then click on “Create records”

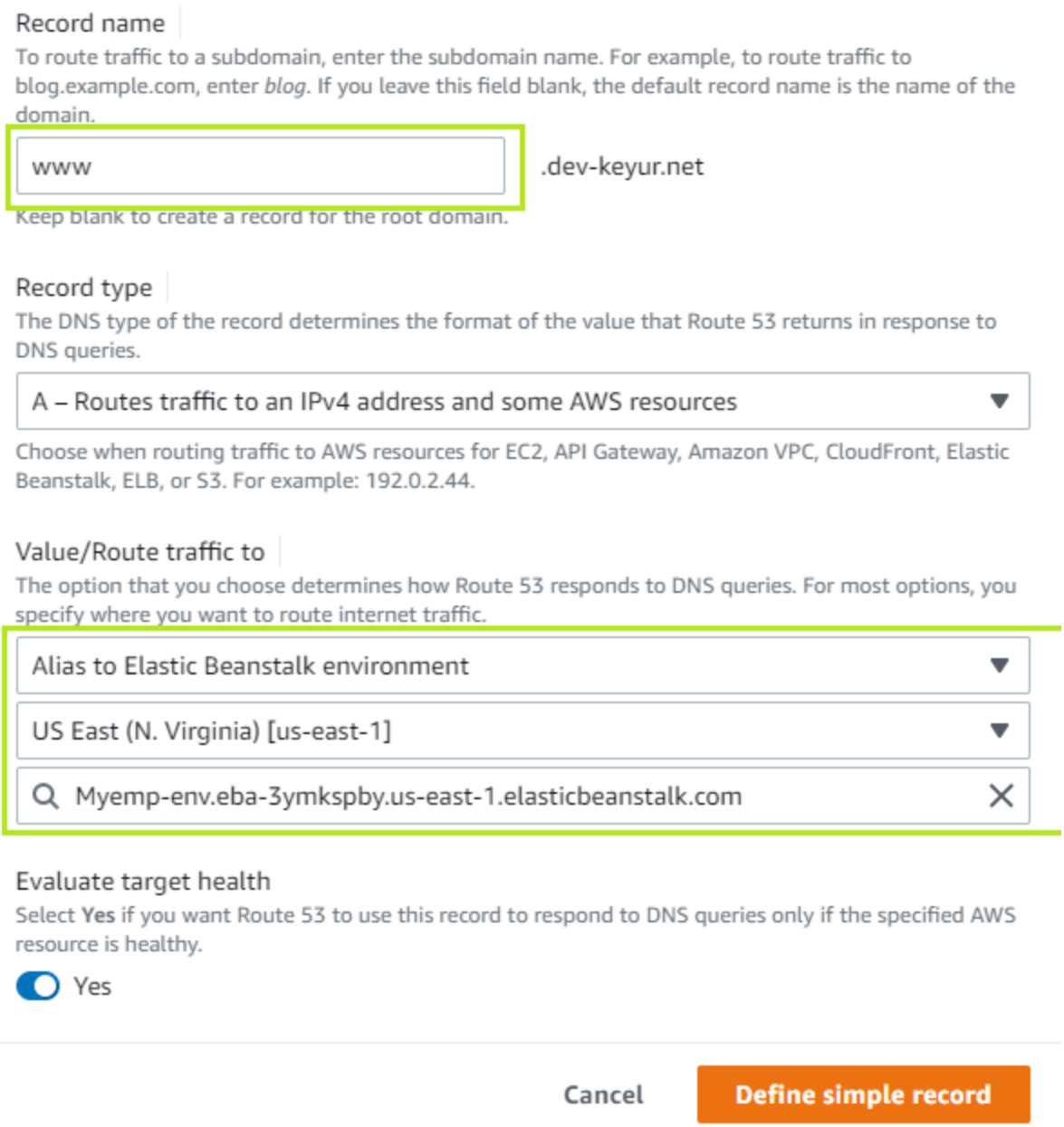


Popup will open and user needs to give the Subdomain name(if you want to)

Do not change anything in “Records type”

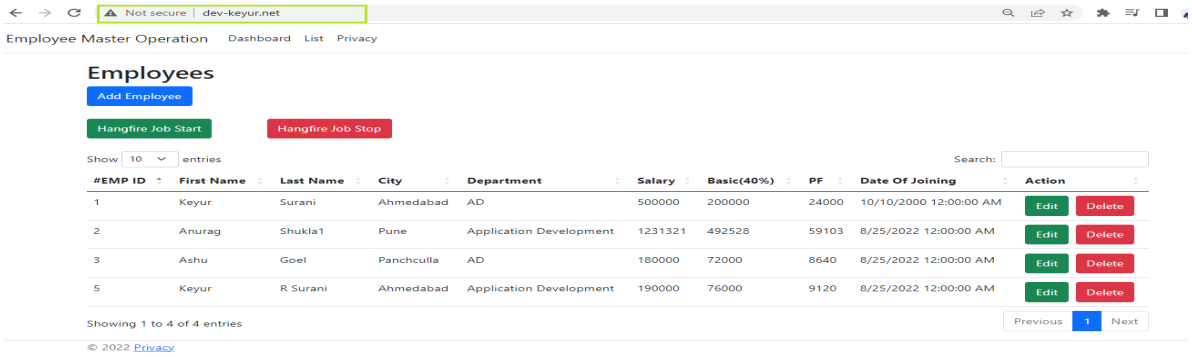
Value/Route to should be

- “Alias to Elastic Beanstalk environment”
- Region you can select any(i.e US East(N. Virginia)
- Your environment where you want to point(route) this domain.



Then click on Define simple record so record will be created.

Write the domain name in the browser. So Application will be accessible through the domain name



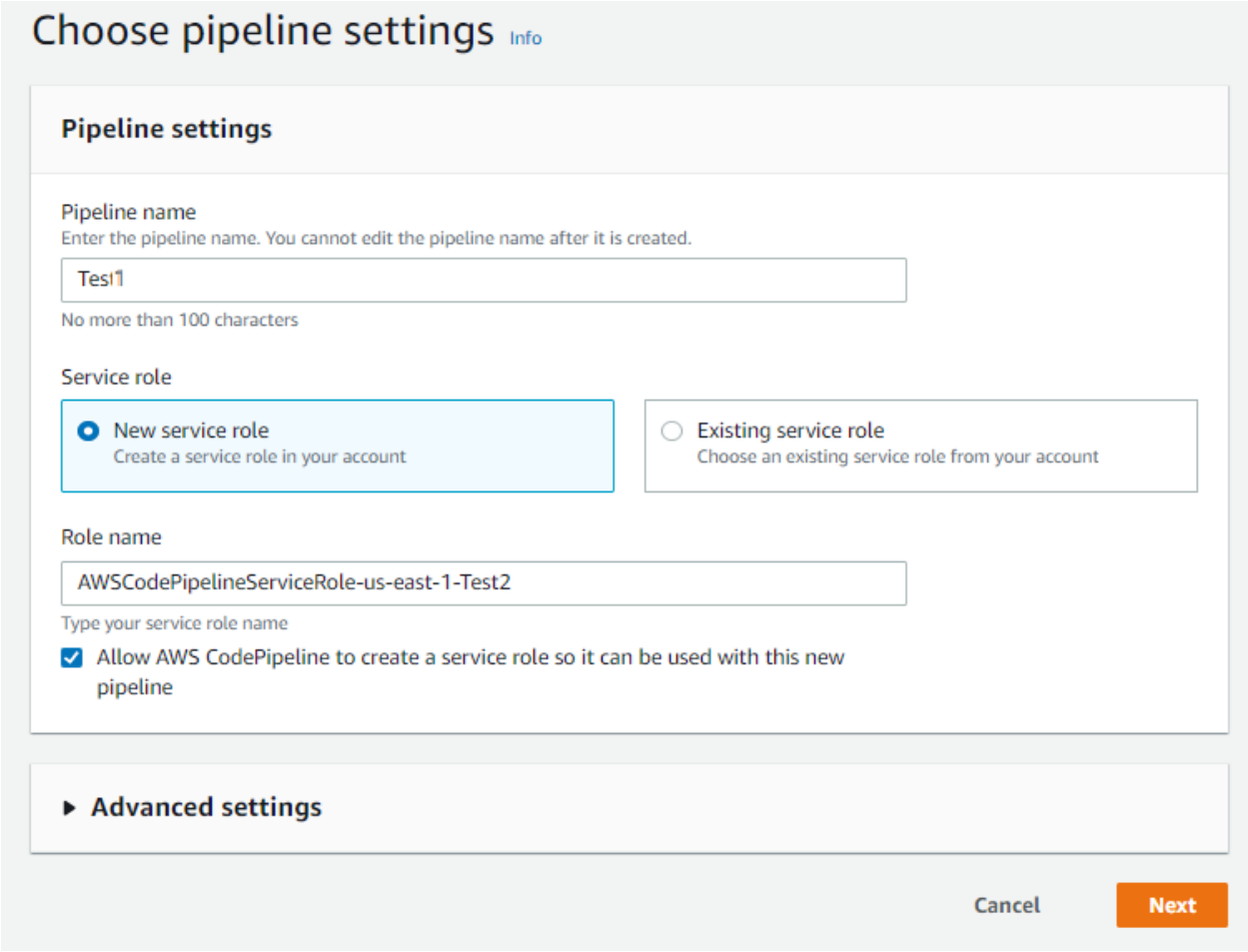
AWS CodePipelines(CI/CD)

Navigate to the **Console dashboard** and search the Code Pipelines and click on create code pipeline.

Choose pipeline settings

Give the Pipeline name and select the service role(if you are creating for the first time then it should be new service role otherwise you can utilize the existing service role)

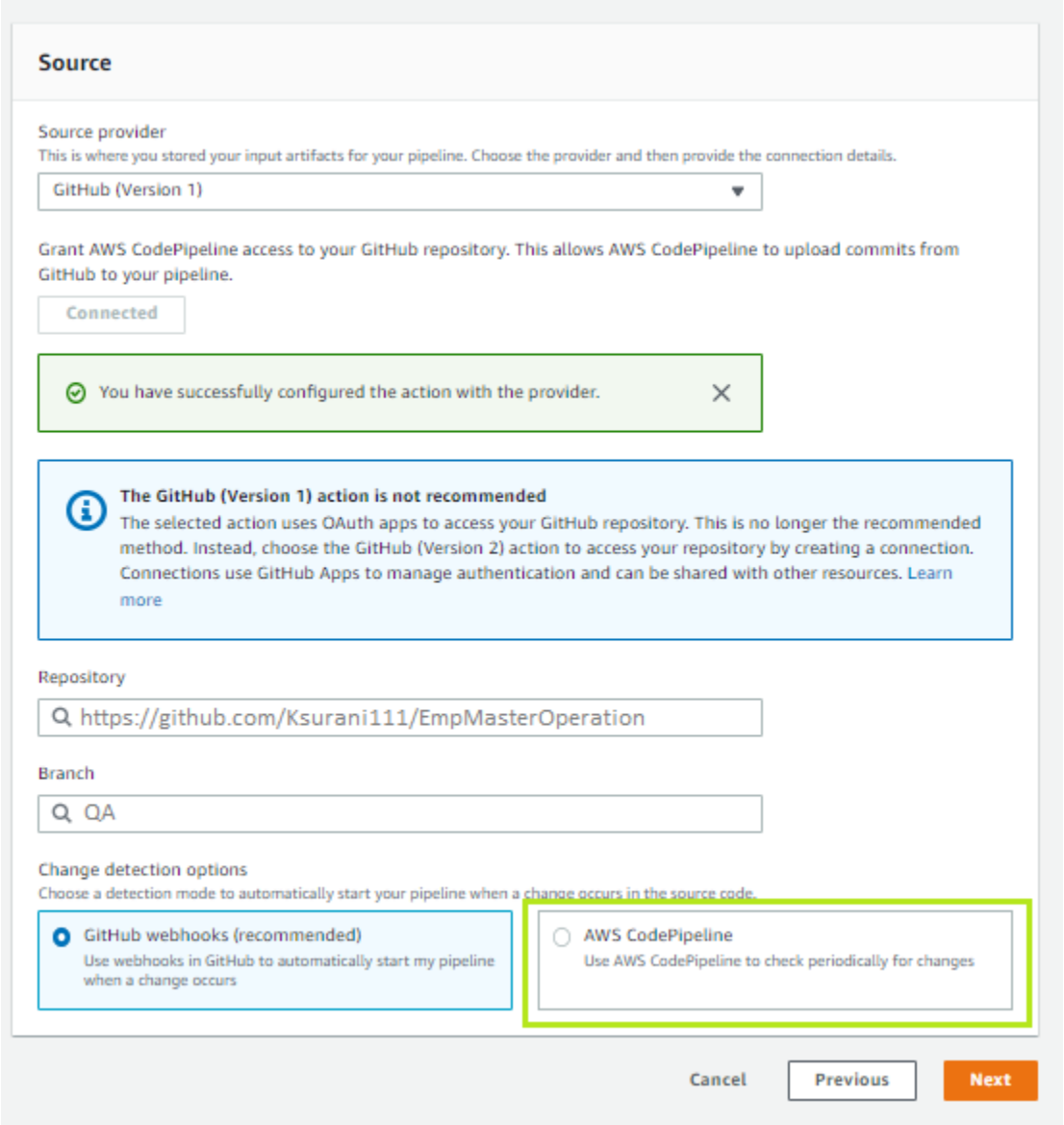
Then click **Next**



Source

Select the source provider, Can select the GitHub and provide the access permission from popup.

- Select the **git repository**
- Provide the **branch** name which you want to use for CI/CD
- Select "**AWS code pipeline**" and click **next**.



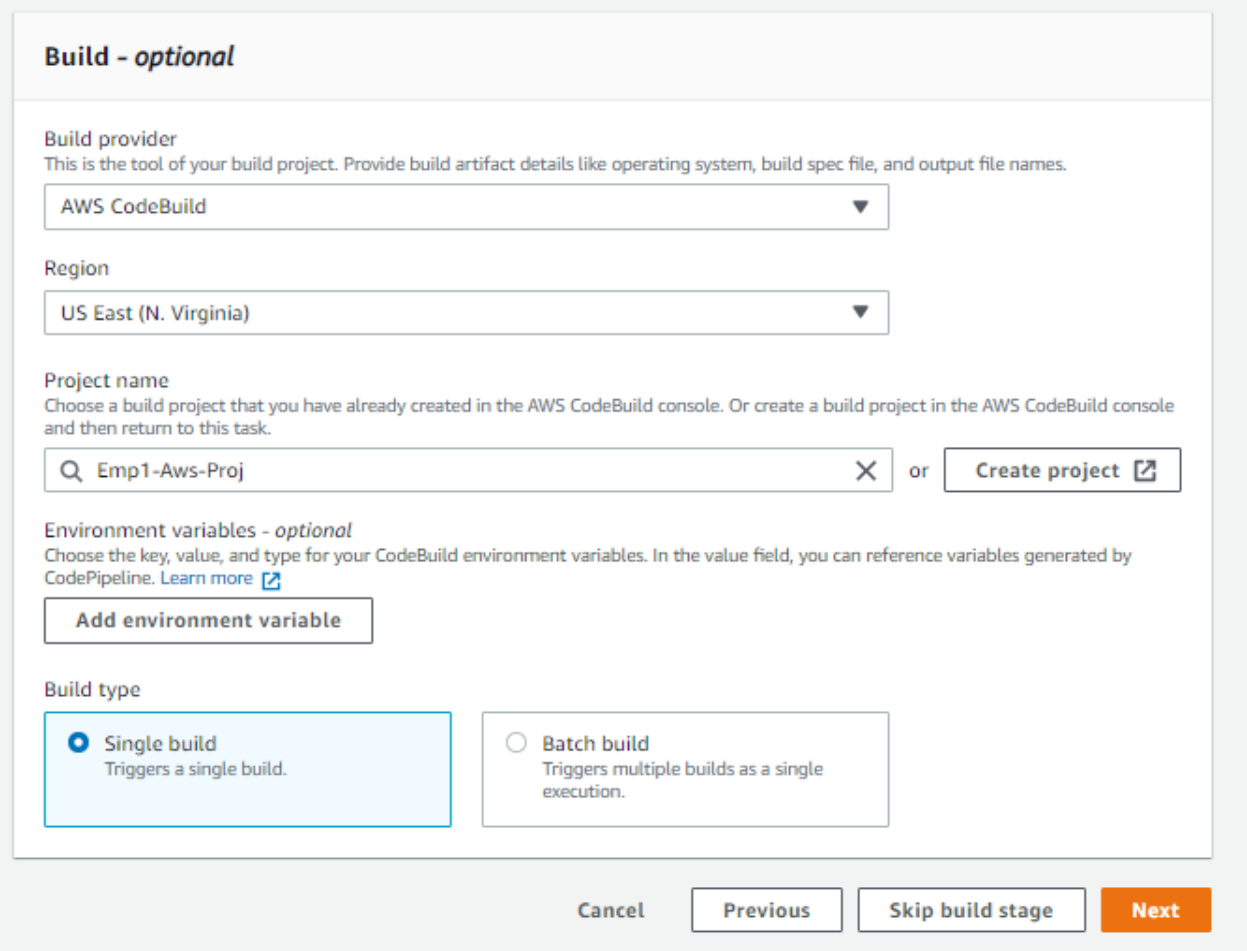
Build

Select **Builder Provider** as the AWSCodeBuild

Region can be anyone

Click on the **"Create project"** button

Select build type as the "**Single build"**.



Creating a project

Project Configuration***(ref: screenshot)***

- Give the project name

Environment

- Select the Operating system where you want to build the project
- Select the runtime, image, image version and environment type
- Select the service role from new or existing

Buildspec

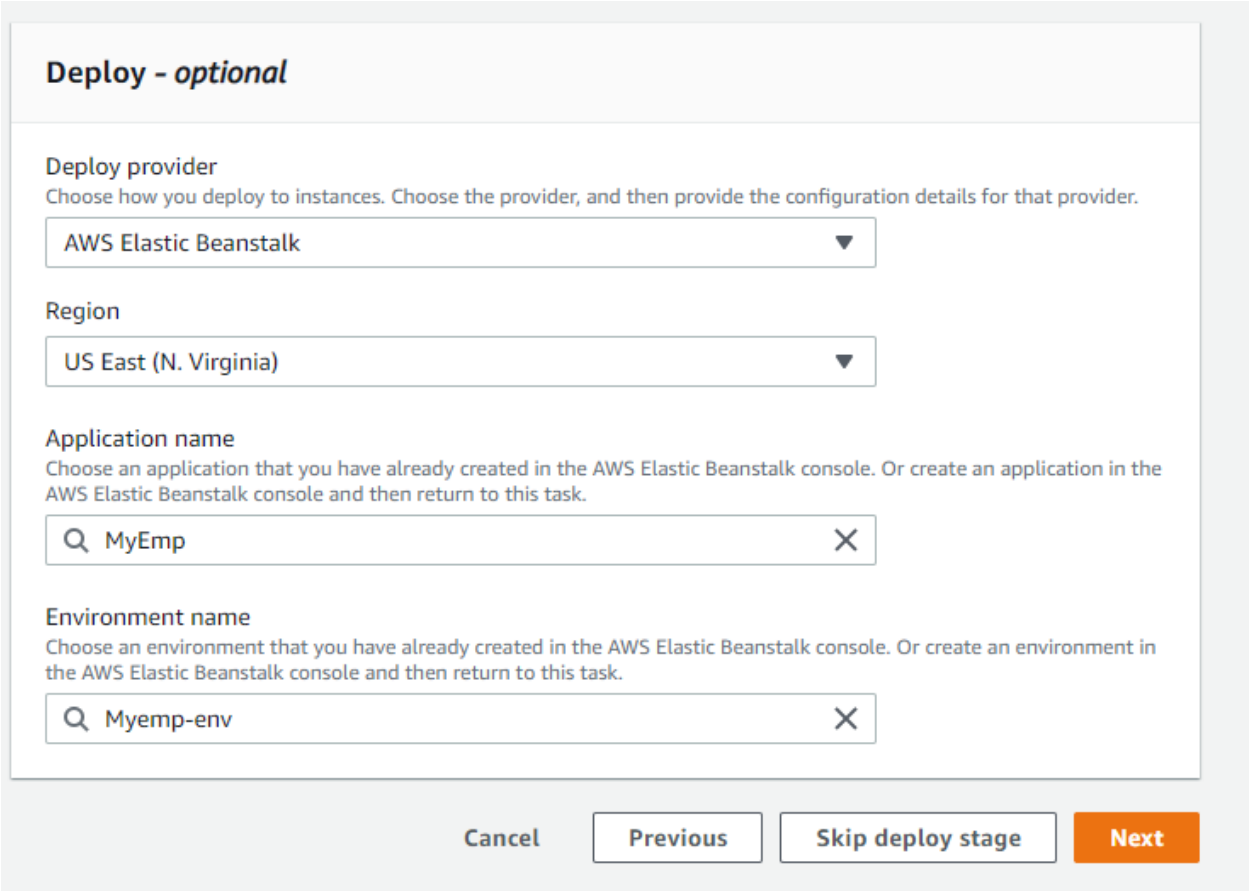
- Select insert build commands
- Put the custom build command(YAML) withs some basic commands

Click on continue to **CodePipeline**

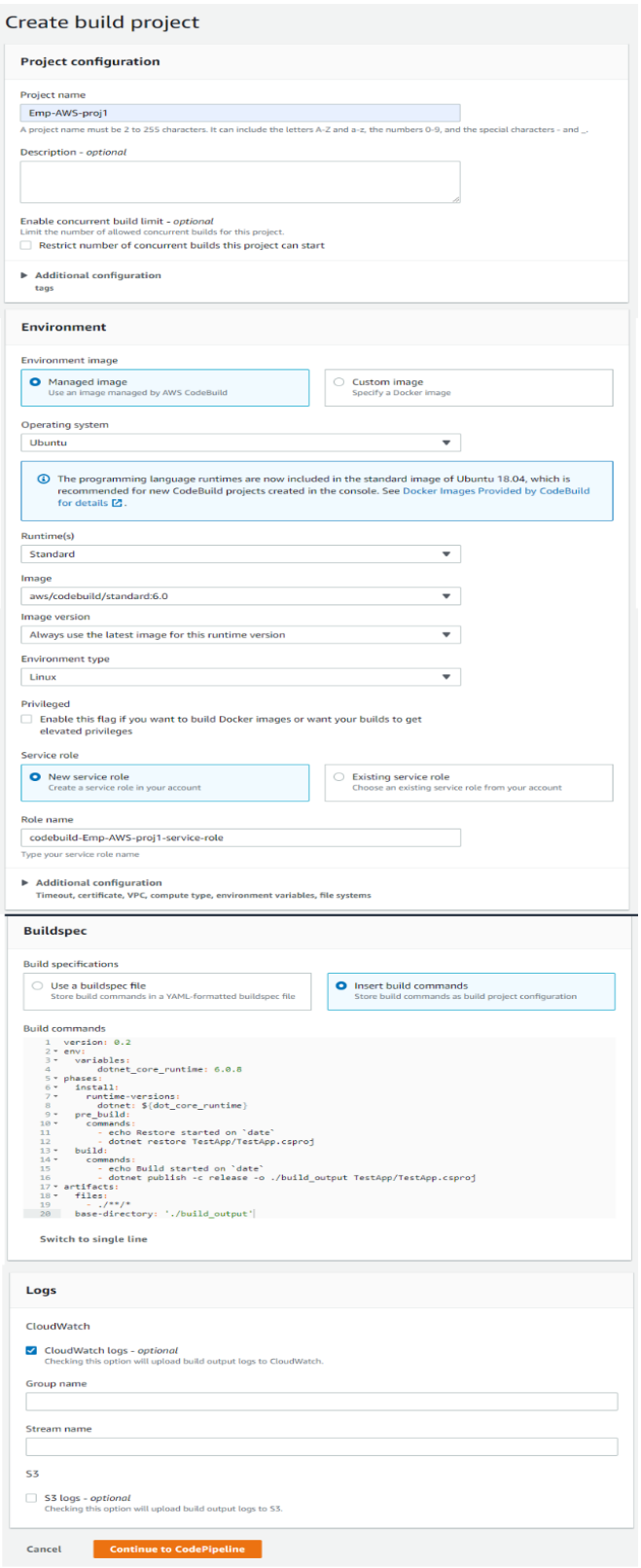
Deploy

Select the Deploy provider from the list as we have taken Elastic Beanstalk so it should be AWS Elastic Beanstalk
Region can be anything

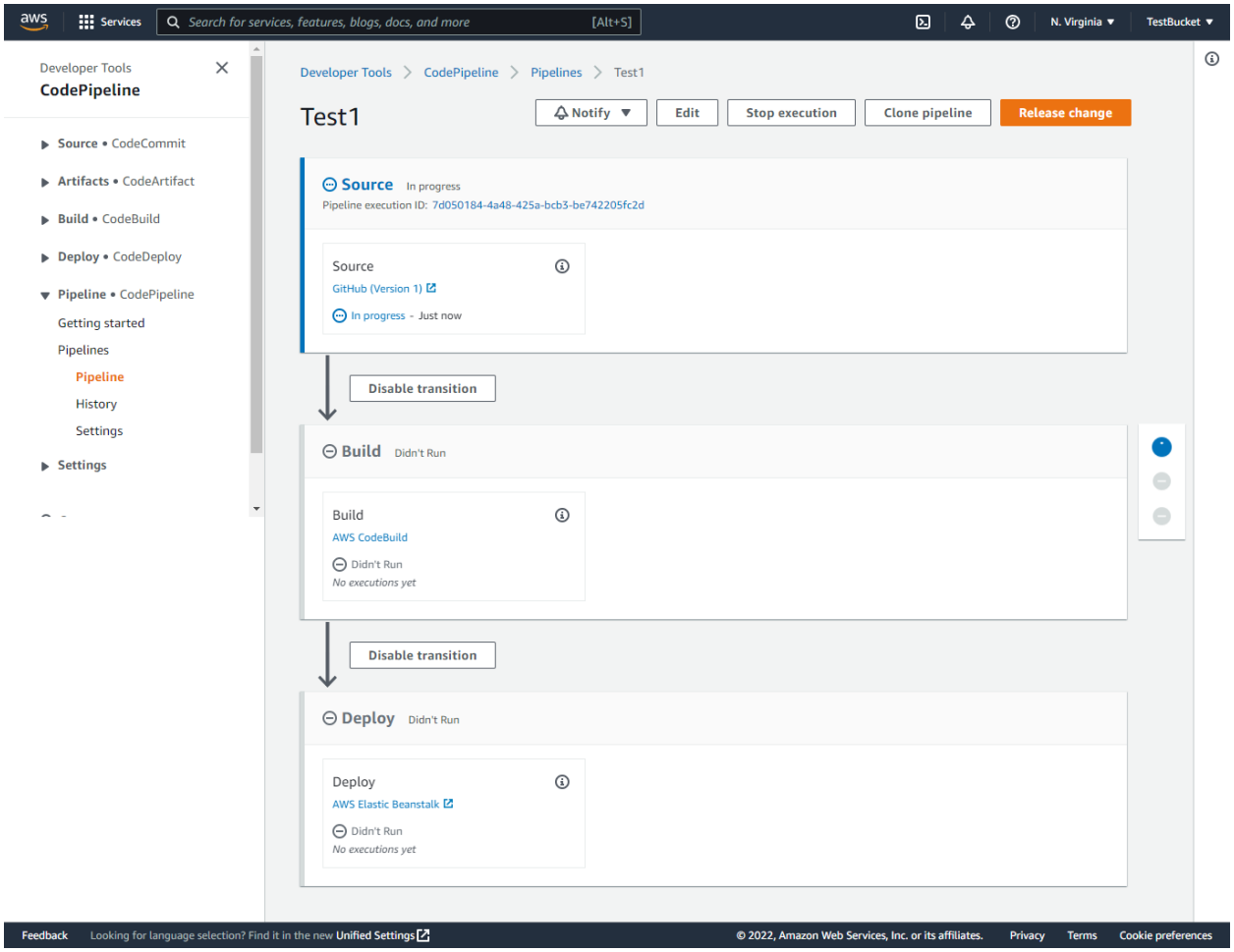
Select the application name and Environment name and click “**Next**”


Deploy - optional
Deploy provider
Choose how you deploy to instances. Choose the provider, and then provide the configuration details for that provider.
AWS Elastic Beanstalk
Region
US East (N. Virginia)
Application name
Choose an application that you have already created in the AWS Elastic Beanstalk console. Or create an application in the AWS Elastic Beanstalk console and then return to this task.
MyEmp
Environment name
Choose an environment that you have already created in the AWS Elastic Beanstalk console. Or create an environment in the AWS Elastic Beanstalk console and then return to this task.
Myemp-env
Cancel
Previous
Skip deploy stage
Next

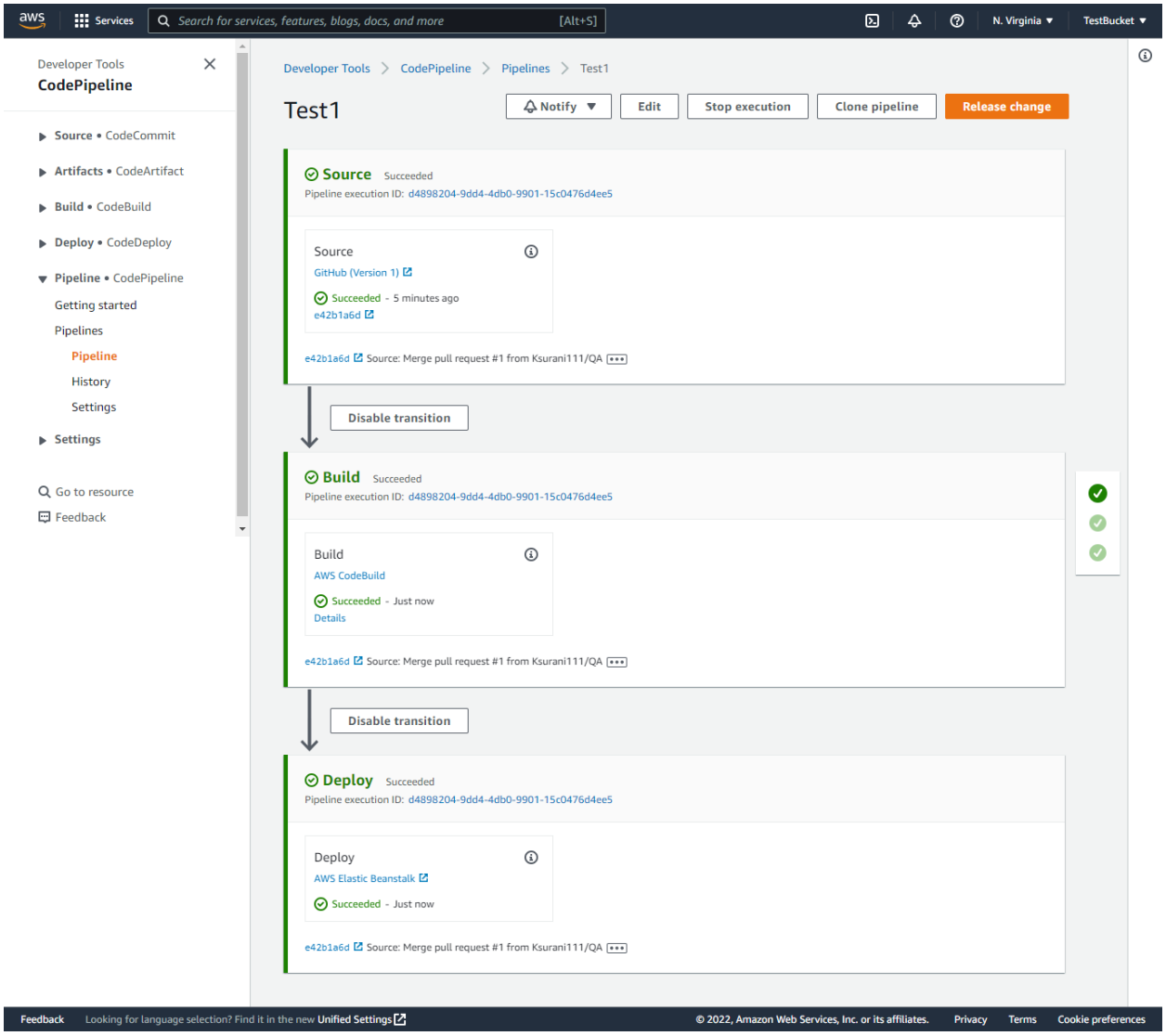
Creating a build project



Review your CodePipeline and create the CodePipeline.



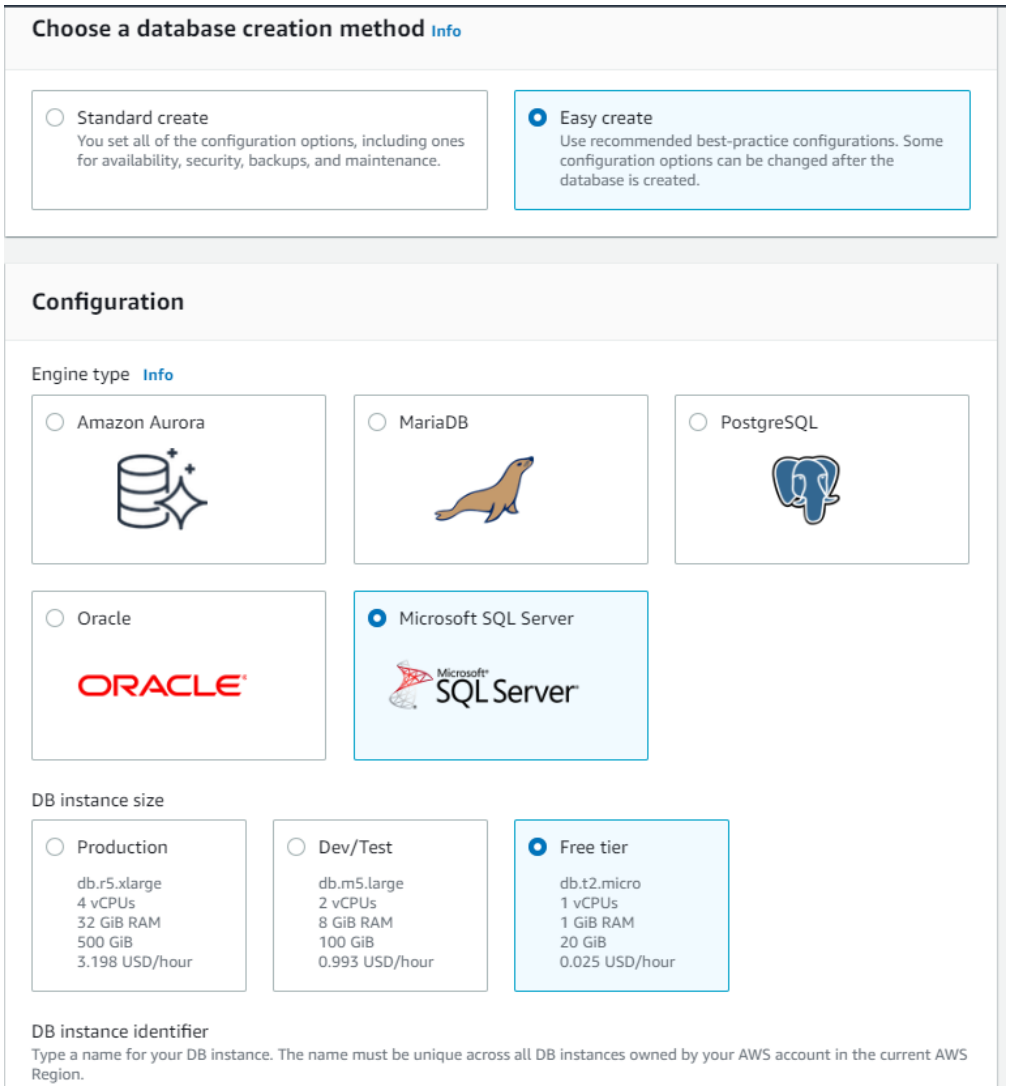
As this code pipeline will execute for the first time, It will fetch the code from GitHub, build the code and then that will be deployed to the environment.



RDS(database) creation

Navigate to the **Console dashboard** and search the RDS and click on create database.

- Choose the “Easy create” option
- Select the Microsoft SQL server from engine type
- Select the free tier for learning purposes.



- Specify the database instance name or go with default name.
- Give the master username and password

DB instance identifier

Type a name for your DB instance. The name must be unique across all DB instances owned by your AWS account in the current AWS Region.

database-2

The DB instance identifier is case-insensitive, but is stored as all lowercase (as in "mydbinstance"). Constraints: 1 to 60 alphanumeric characters or hyphens. First character must be a letter. Can't contain two consecutive hyphens. Can't end with a hyphen.

Master username Info

Type a login ID for the master user of your DB instance.

admin

1 to 16 alphanumeric characters. First character must be a letter.

☐ Auto generate a password

Amazon RDS can generate a password for you, or you can specify your own password.

Master password Info

••••••••••••••

Constraints: At least 8 printable ASCII characters. Can't contain any of the following: / (slash), '(single quote), "(double quote) and @ (at sign).

Confirm password Info

••••••••••••••

Below are the default settings taken on “Easy” creation of the database, users can change those settings when the database is created with standard.

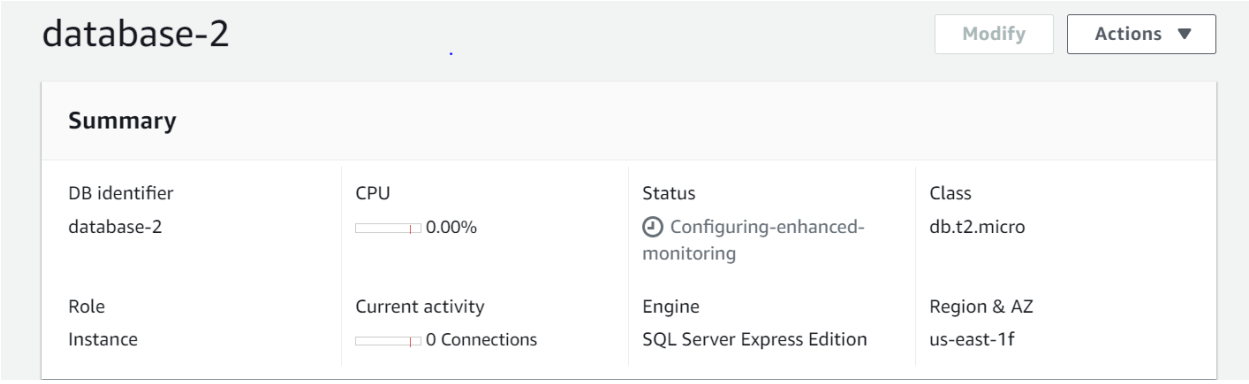
▼ View default settings for Easy create

Easy create sets the following configurations to their default values, some of which can be changed later. If you want to change any of these settings now, use **Standard Create**.

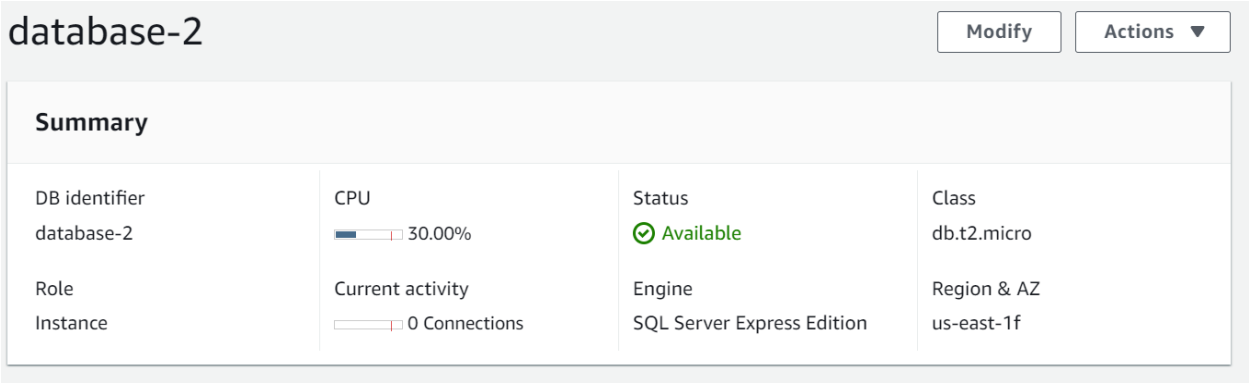
Configuration	Value	Editable after database is created
Encryption	Enabled	No
VPC	Default VPC (vpc-04c1b77bd136004e2)	No
Option Group	default:sqlserver-ex-14-00	Yes
Subnet Group	default-vpc-04c1b77bd136004e2	Yes
Automatic Backups	Enabled	Yes
VPC Security Group	sg-002f7345a7af08d98	Yes
Publically Accessible	No	Yes
Database Port	1433	Yes
DB Instance Identifier	database-2	Yes
DB Engine Version	14.00.3421.10.v1	Yes
DB Parameter Group	default.sqlserver-ex-14.0	Yes
Performance Insights	Enabled	Yes
Monitoring	Enabled	Yes
Maintenance	Auto Minor Version Upgrade Enabled	Yes
Delete Protection	Not Enabled	Yes

Once the database is created you will be able to see that it's in configuration mode. So, the user needs to wait for 10-15 mins.

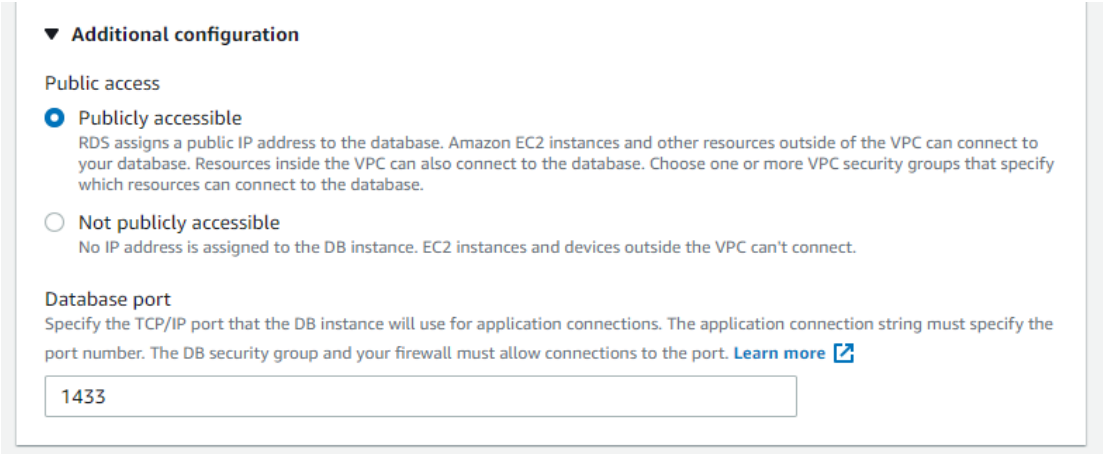
Refer status column.



Once all the configuration is set Database status will be "Available".

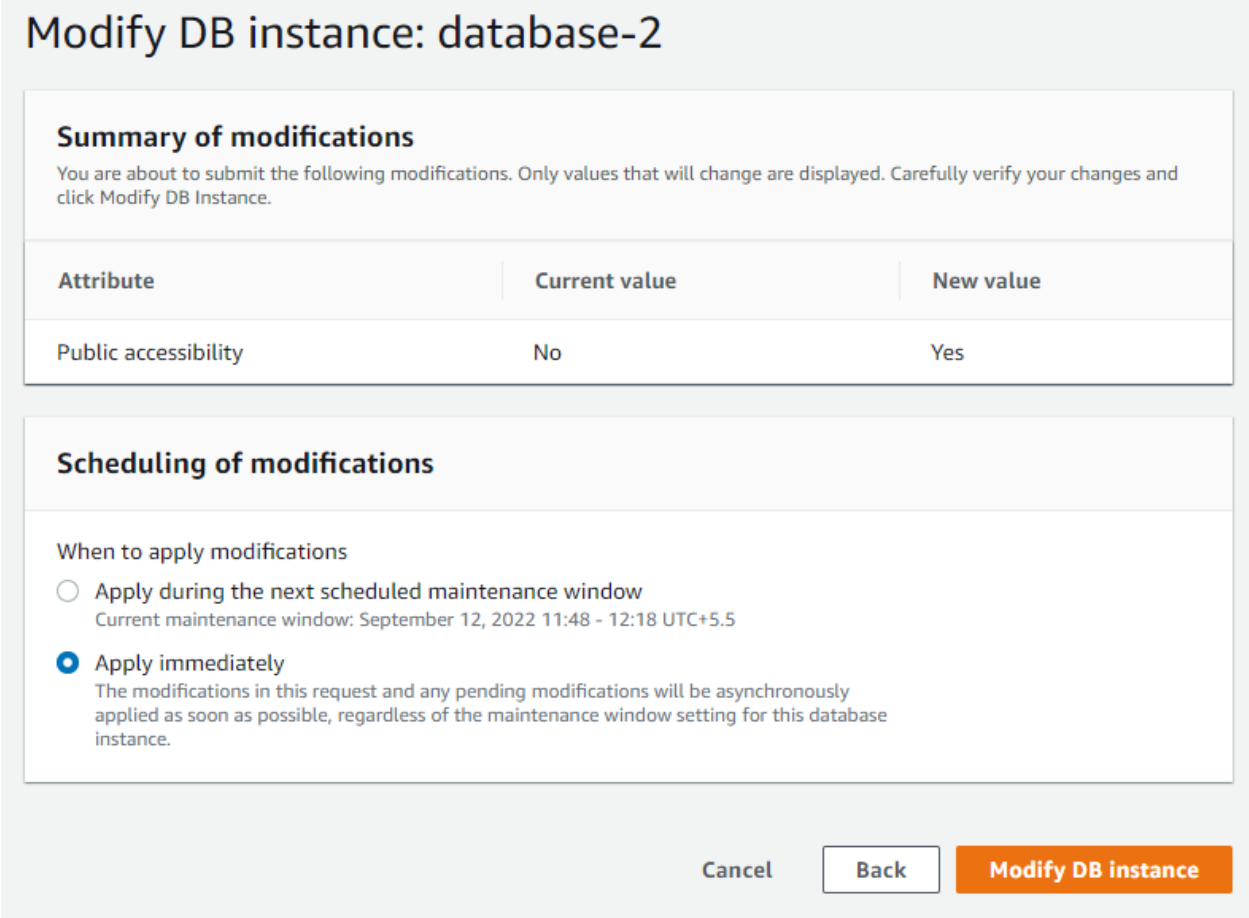


Click on "Modify" and navigate to the "Additional Configuration" tab.

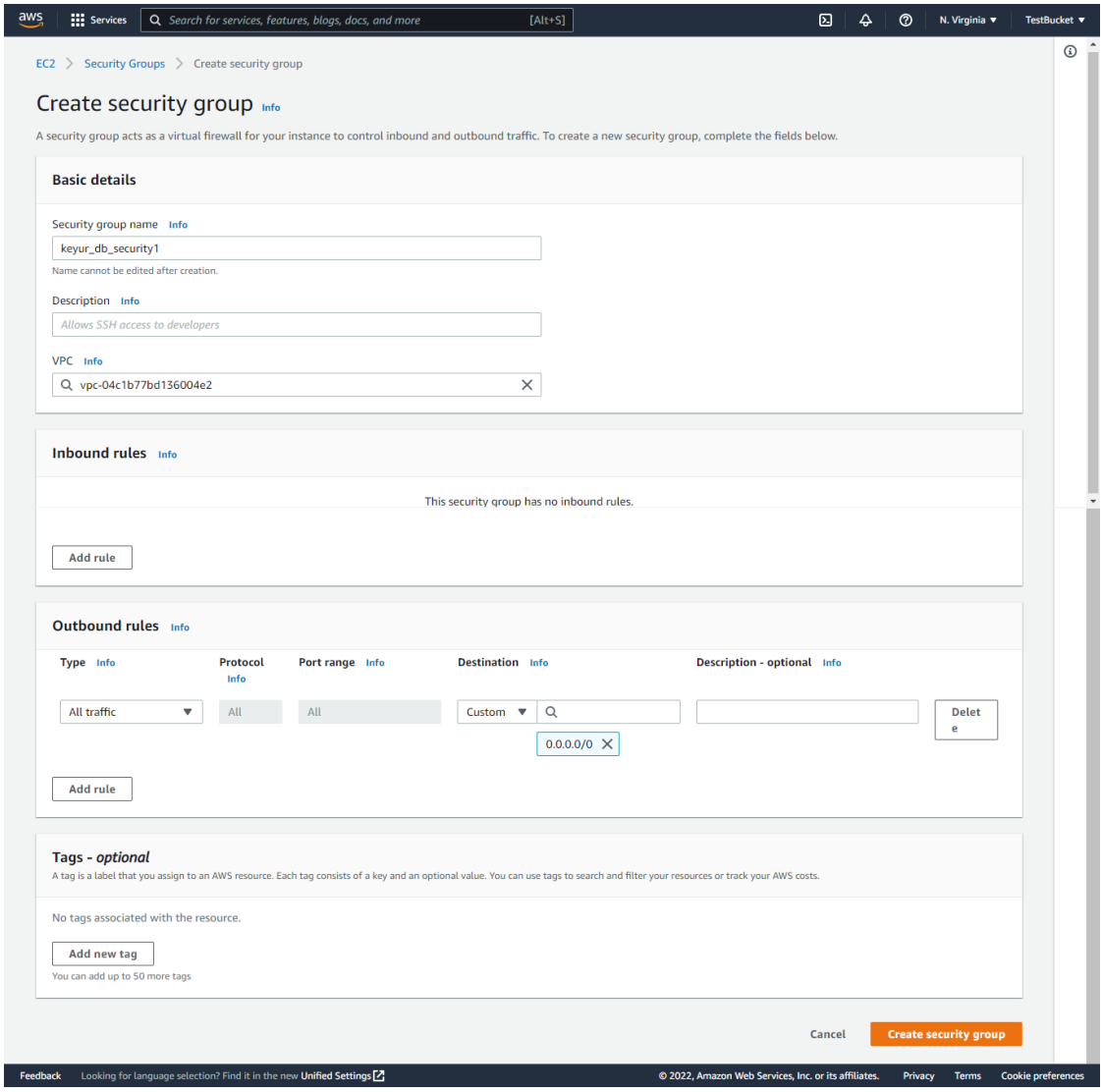


Change the radio button option to “Public accessible” and click continue.

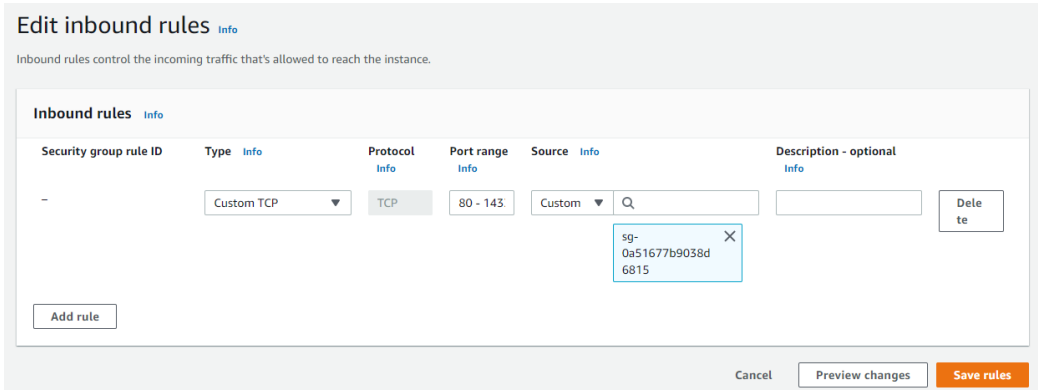
Select apply immediately and click on modify DB instance button.



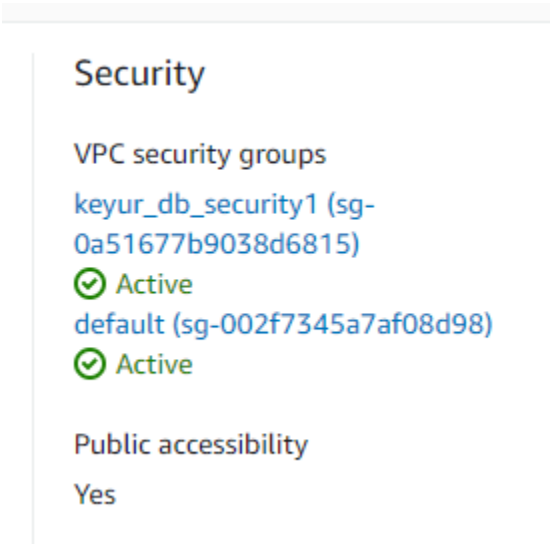
Create a security group by filling the below information.



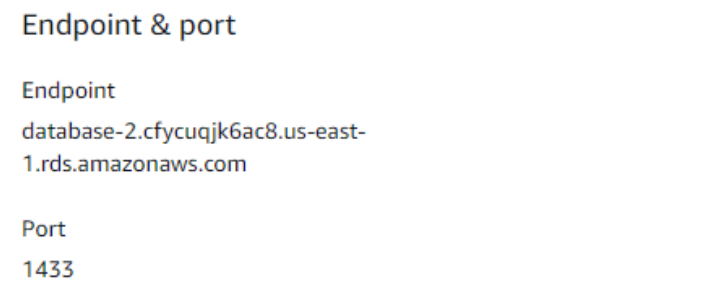
Create a rule and fill the below information to it.

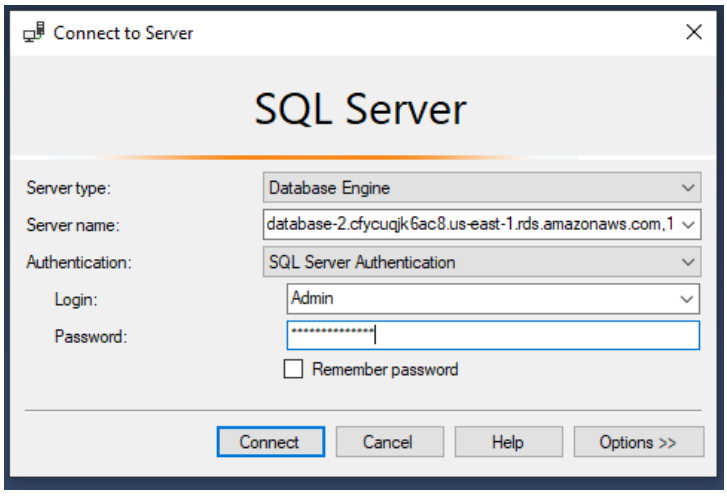


Assign this security group to our created database.



Try to connect the server from your local SSMS by using below end point and port number





Your database is fully up and running now with some default table structure.