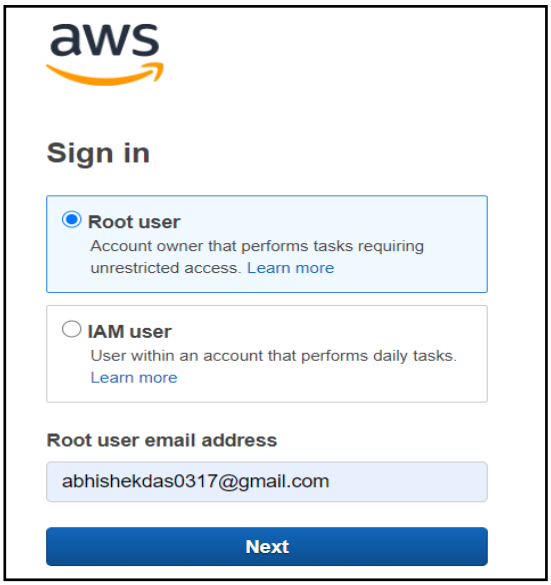
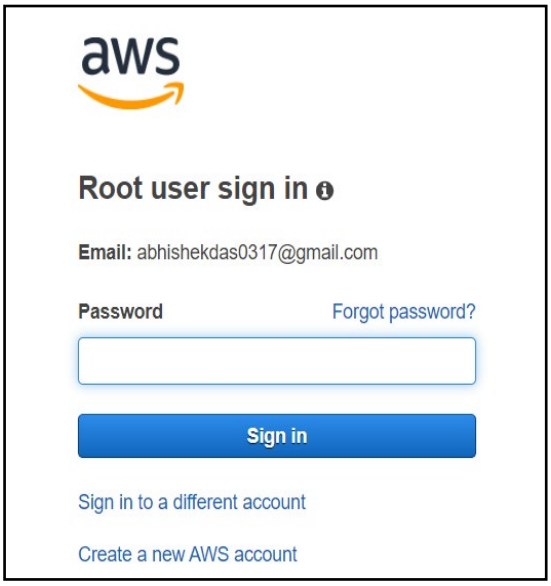
01: EC2 INSTANCE CREATION

AWS EC2 instance: An EC2 instance is a virtual server in Amazon's Elastic Compute Cloud (EC2) for running applications on the Amazon Web Services (AWS) infrastructure.

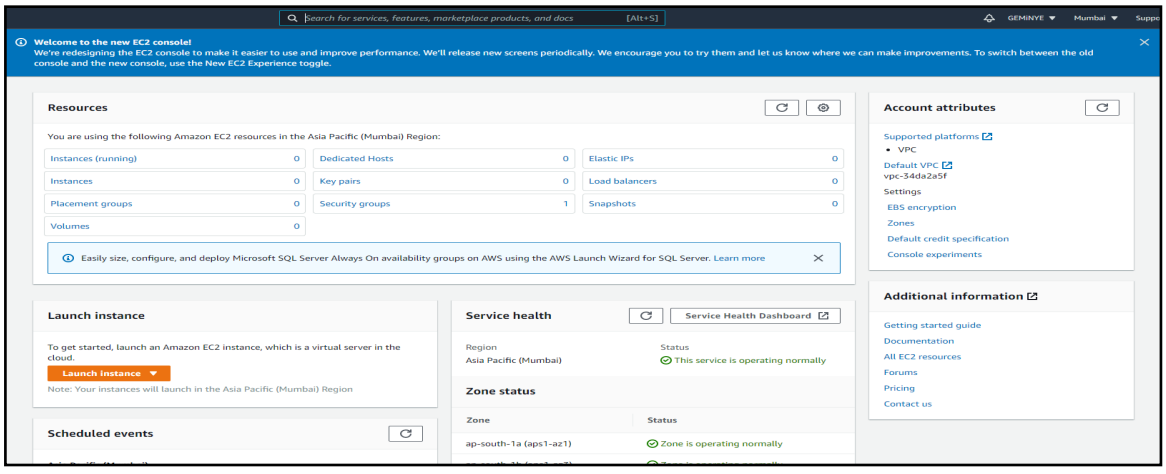
Process launch EC2 instance:

1. Sign in to the AWS Management Console.

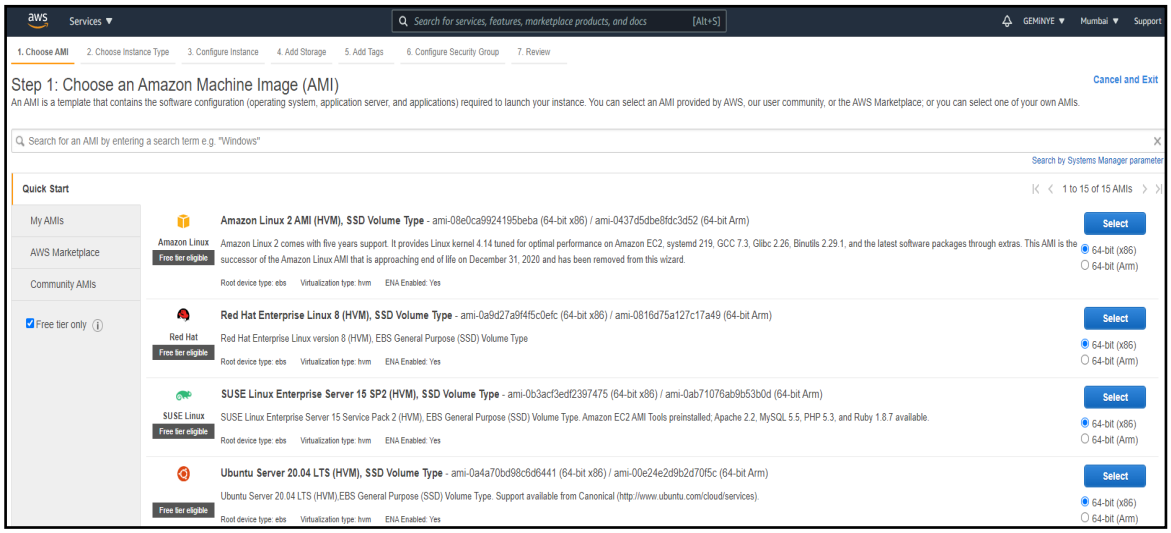




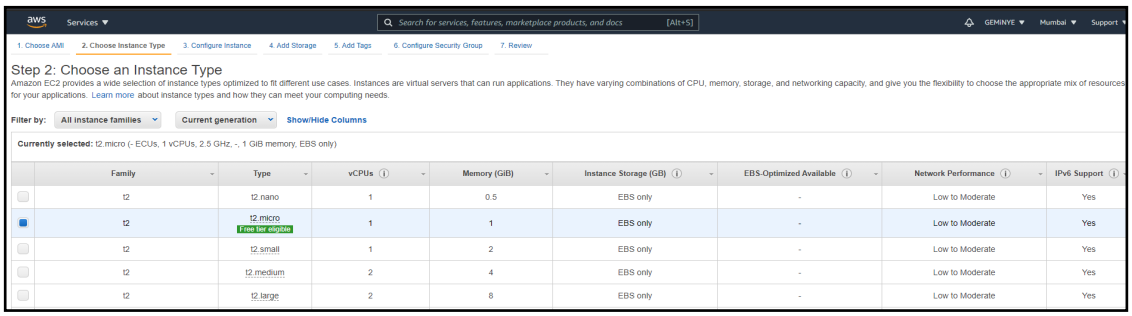
2. Choose EC2 from compute services and click on launch instance.



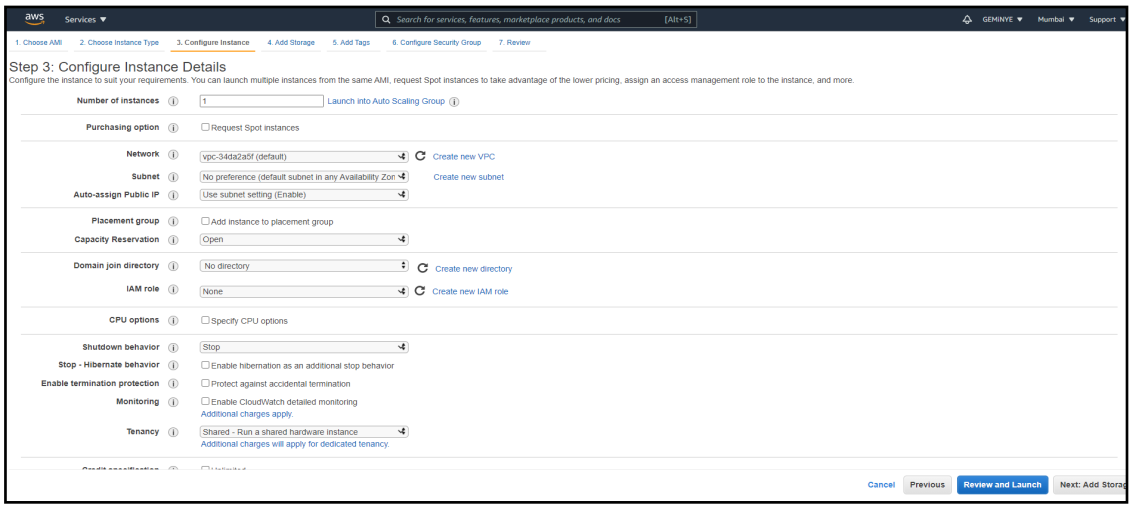
3. Tick on free tier and select AMI AMZON from free tier services.

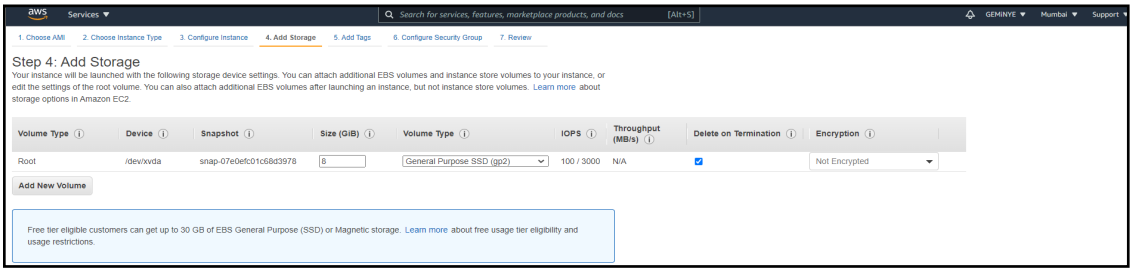


4. Choose free tier 1cpu 1gh ram (t2 micro).

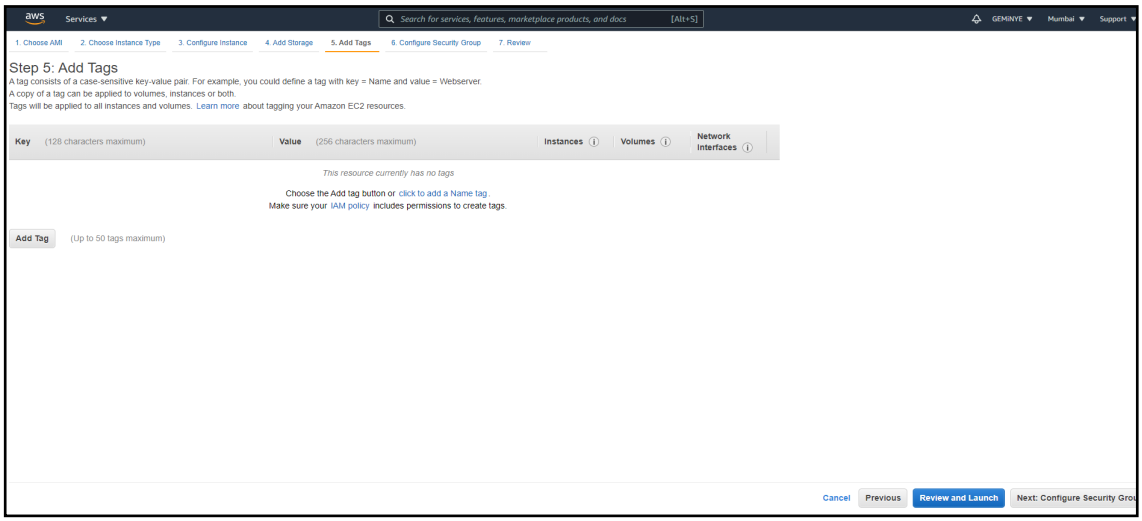


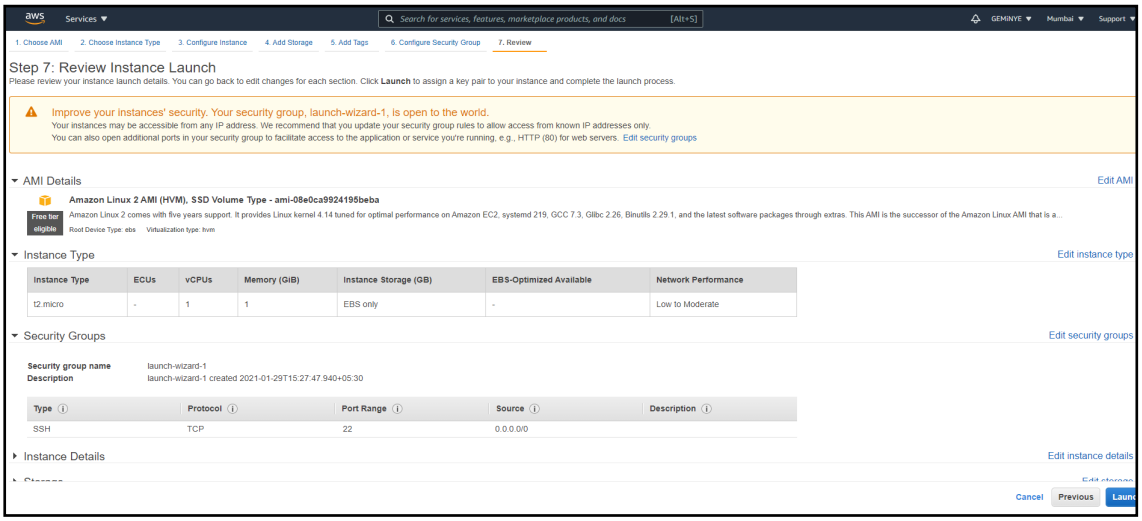
5. Configure instance detail and add storage.



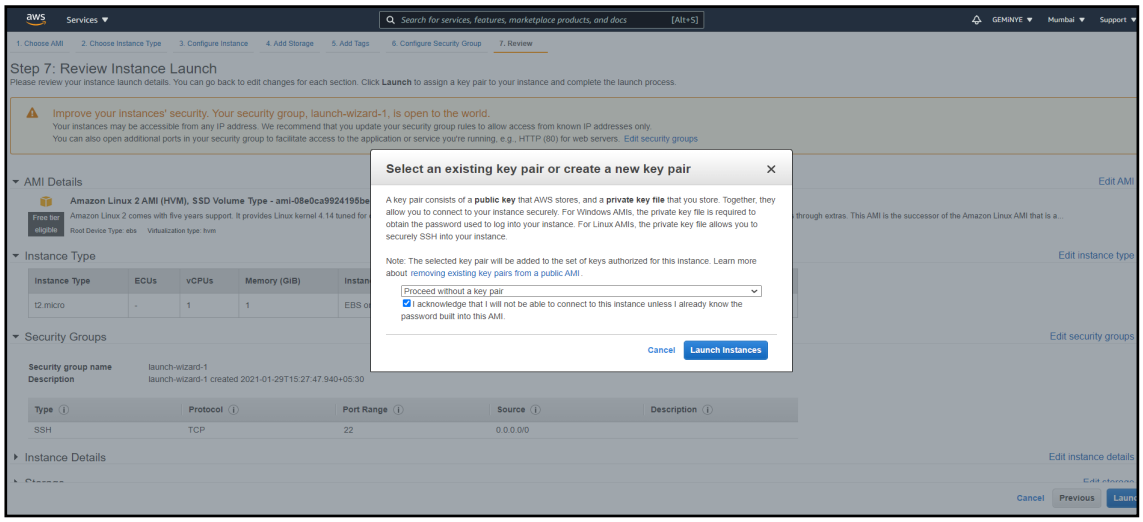


6. Click on review and launch.

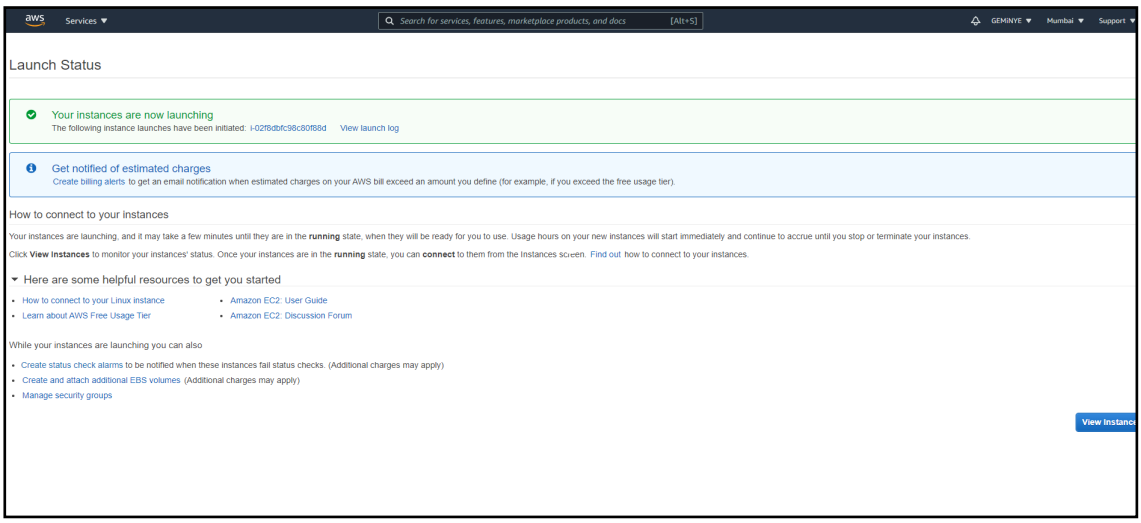




7. Continue without a key pair.



8. Click on launch Instance.

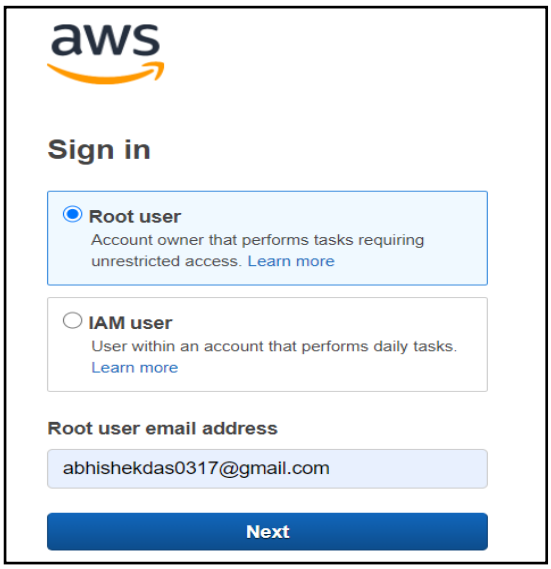


02: Creating VPC

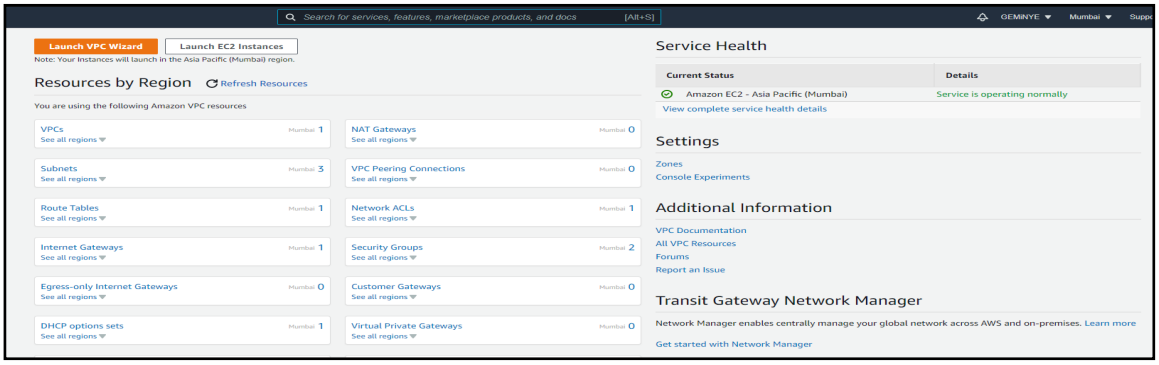
VPC (Virtual Private Cloud): Amazon Virtual Private Cloud (Amazon VPC) enables you to launch Amazon Web Services (AWS) resources into a virtual network you've defined. This virtual network resembles a traditional network that you'd operate in your own data centre, with the benefits of using the scalable infrastructure of AWS.

Process to configure VPC:

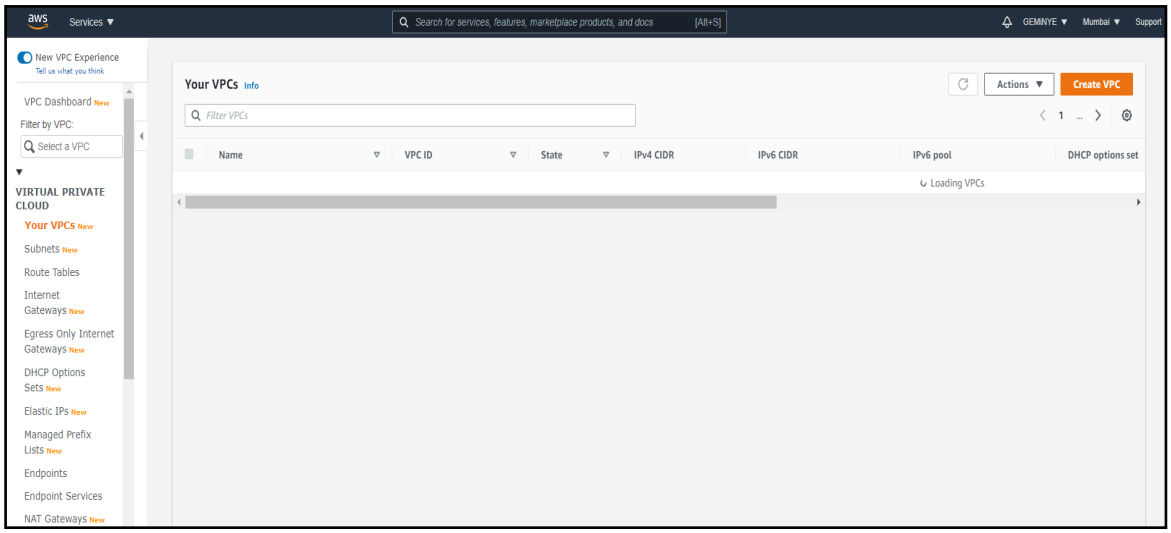
1. Sign in to the AWS Management Console.



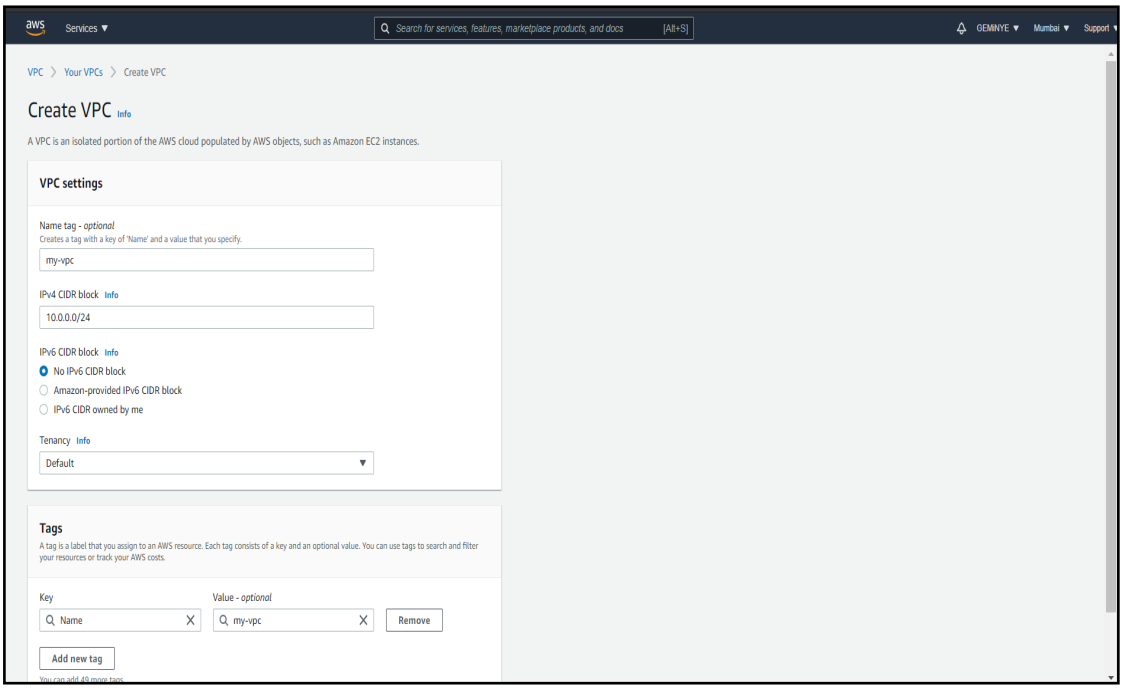
2. Open VPC from services under networking.



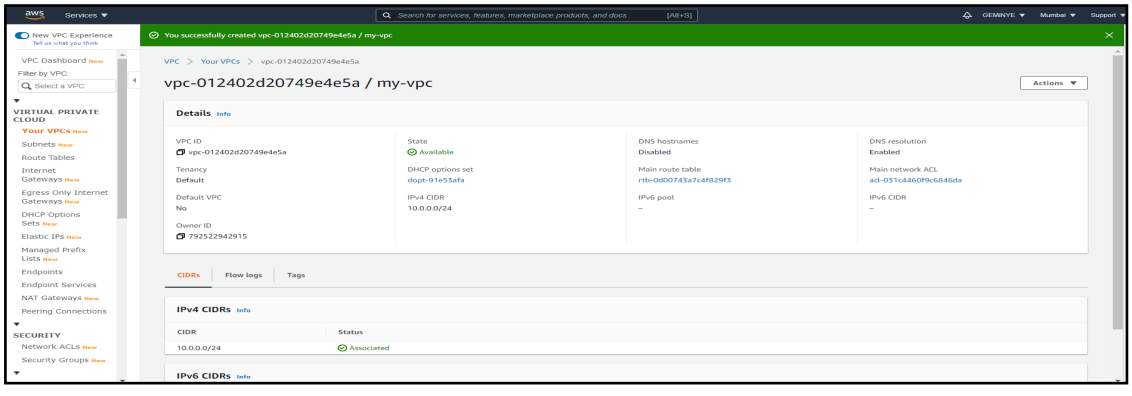
3. Click on your VPC and create VPC.



4. Configure VPC using name of VPC and IP range.



5. Check VPC status.

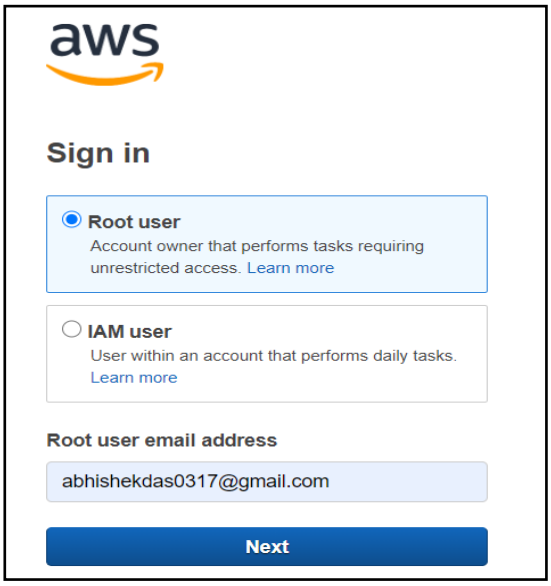


03: Configure Subnet

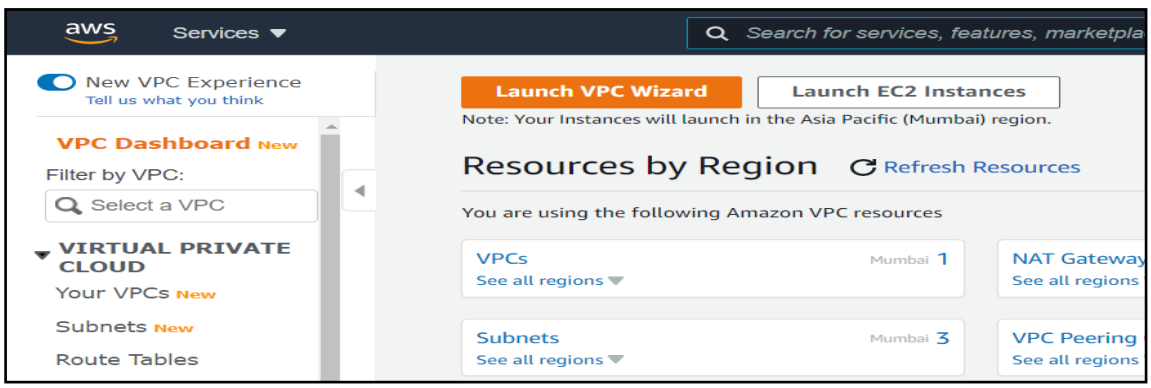
About Subnet: Subnet is a logical subdivision of an IP network. The practice of dividing a network into two or more networks is called subnetting. AWS provides two types of subnetting one is Public which allow the internet to access the machine and another is private which is hidden from the internet.

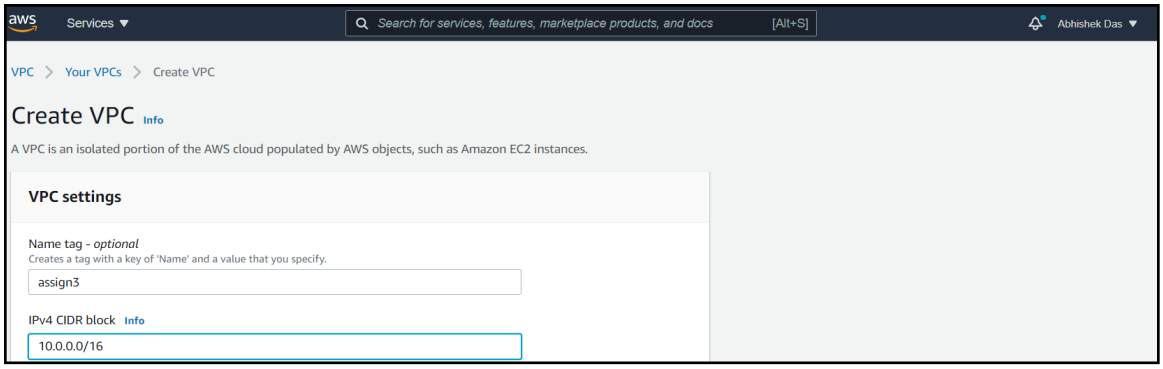
Process to configure Subnet:

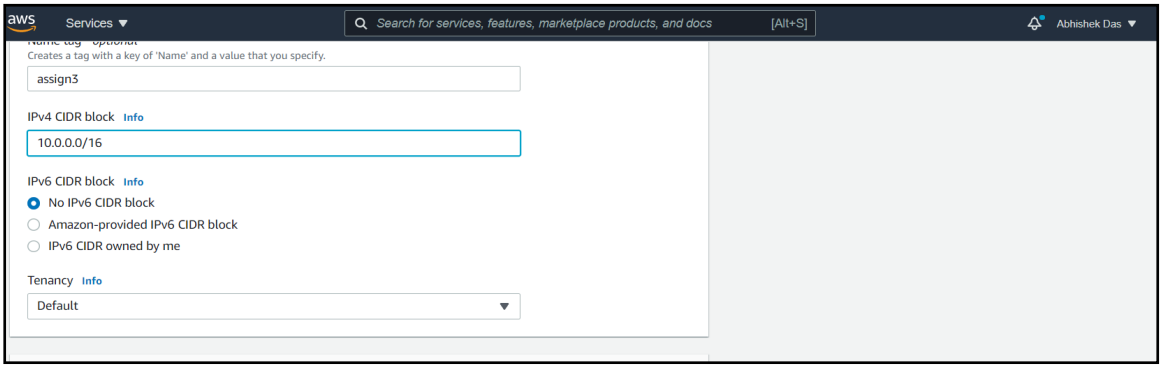
1. Sign in to the AWS Management Console.



2. Click on VPC from service and configure it by providing name, IPv4 CIDR block and click on create VPC.

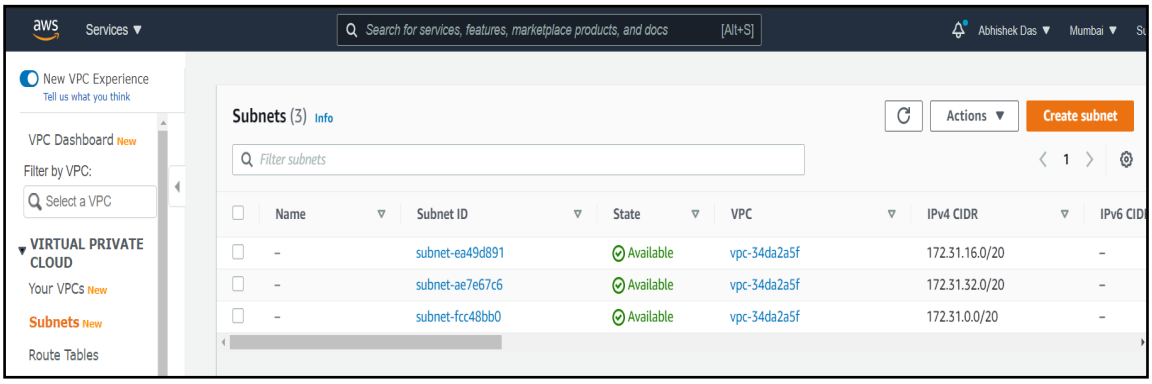




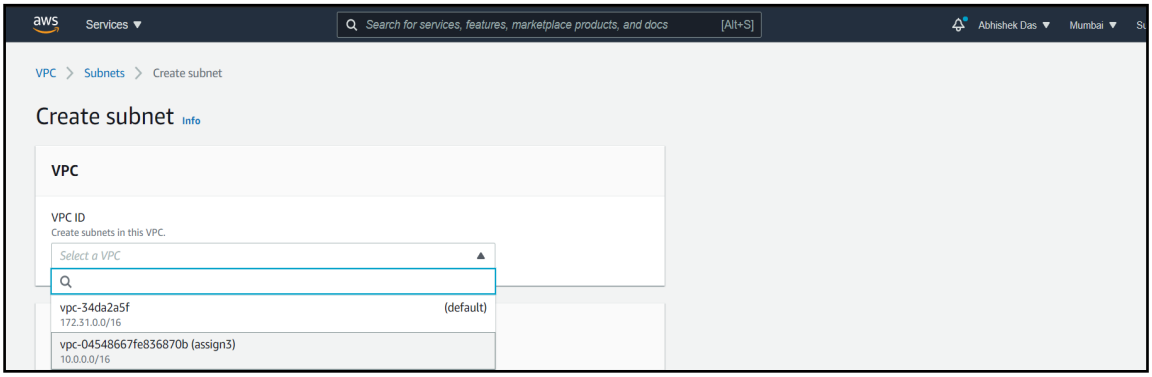


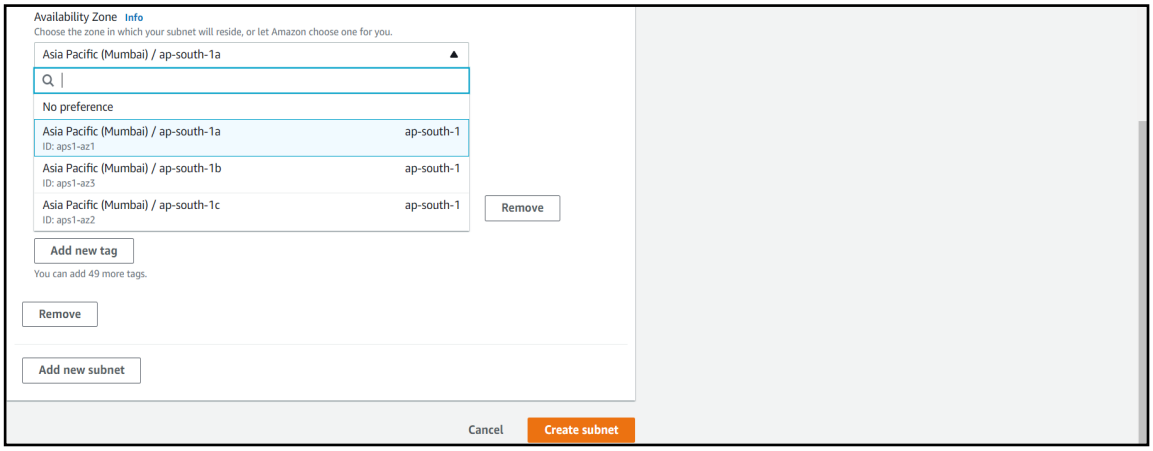
Configuration of Private Subnet

3. Now click on Subnet to configure private subnet.



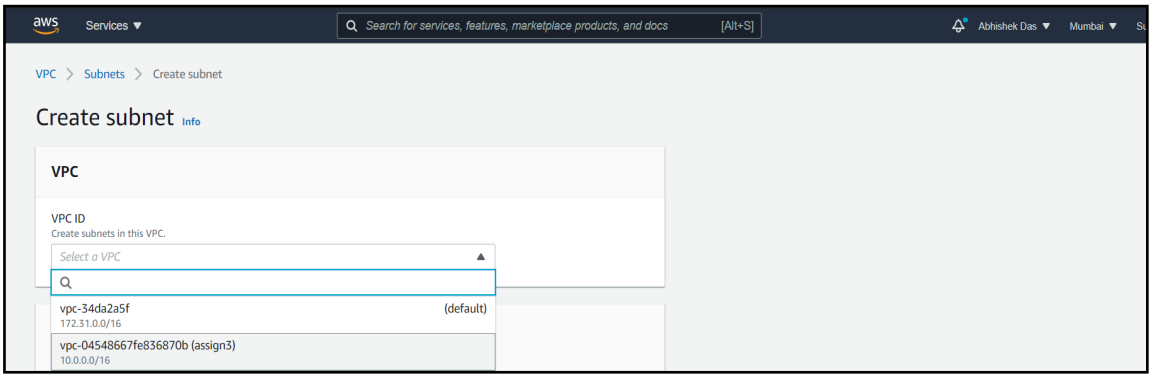
4. Provide VPC ID and availability zone then click on create Subnet.



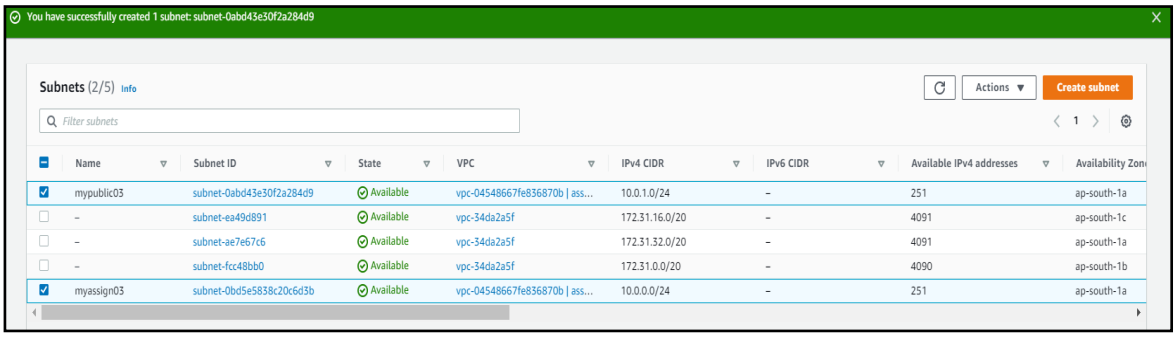


Configuration of Public Subnet

5. Now again click on Subnet to create Public Subnet provide VPC ID and availability zone also provide IPv4 CIDR no as 10.0.1.0/26 to make it public.

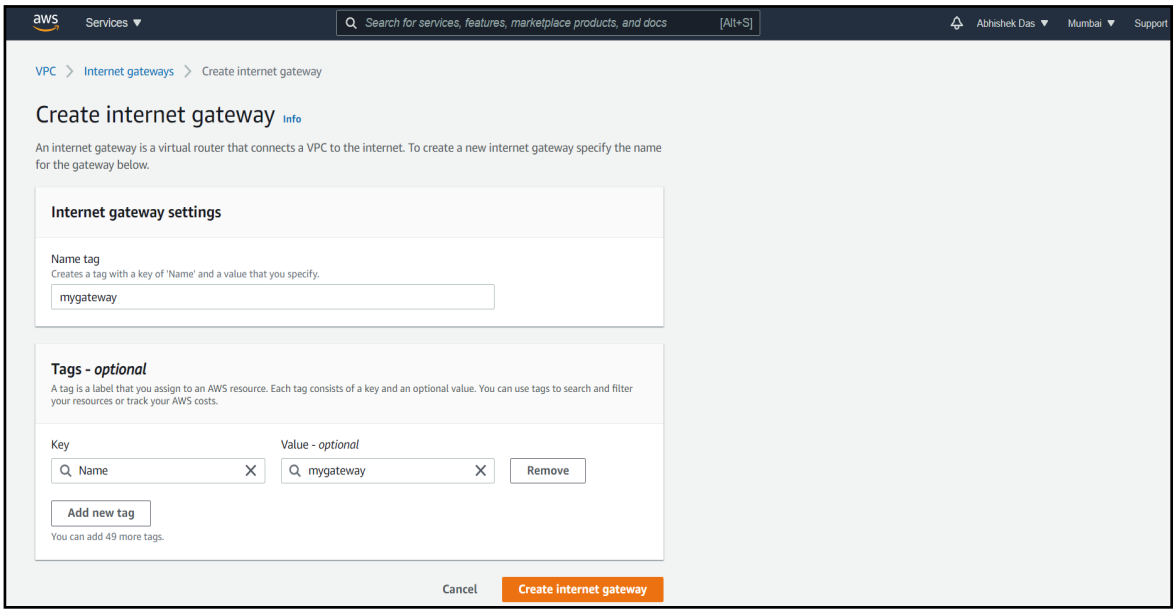


6. Then click on create subnet.

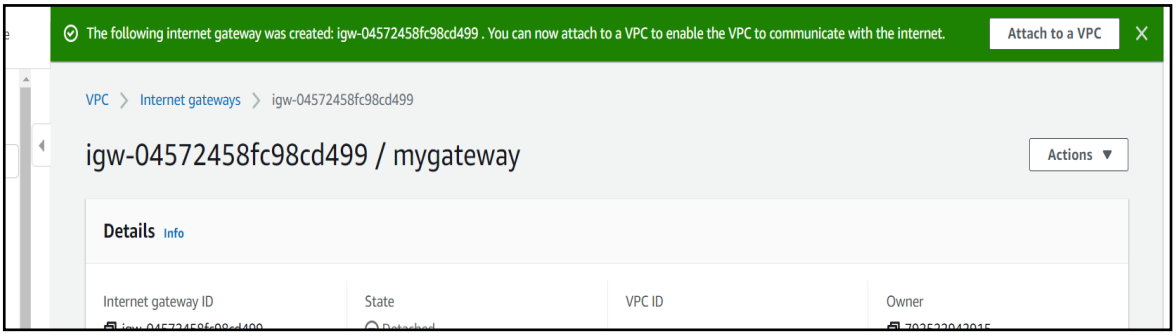


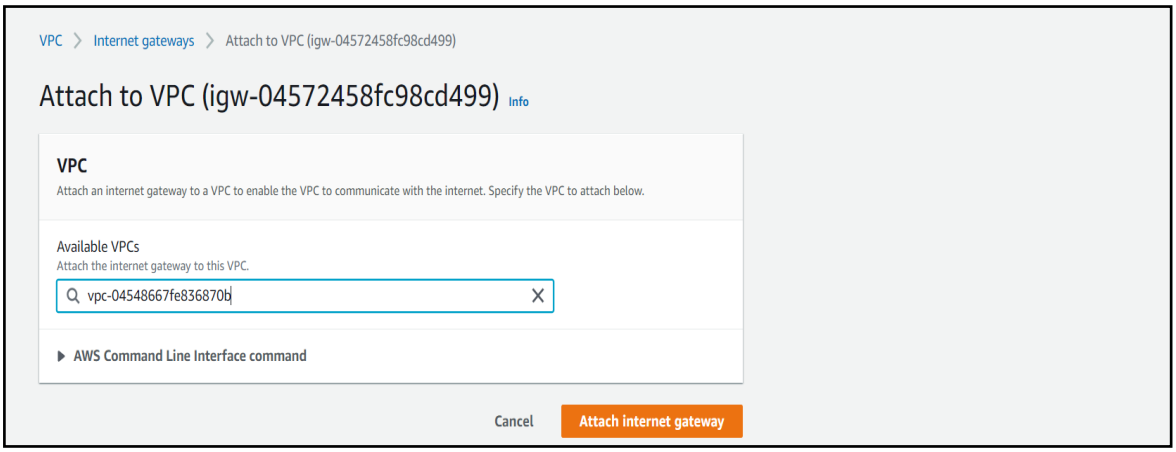
Configuration of Internet Gateway

7. Now click on Internet gateway and write its tag name then click on create Internet gateway.



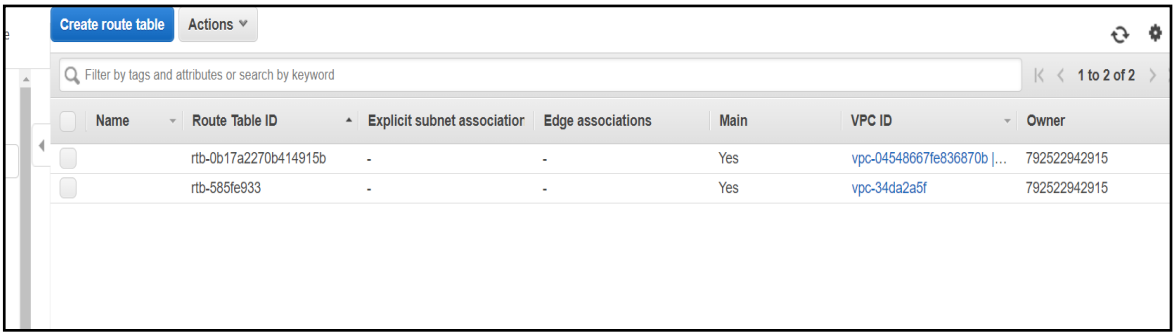
8. Then click on attach to a VPC and browse the VPC and select attach Internet Gateway.





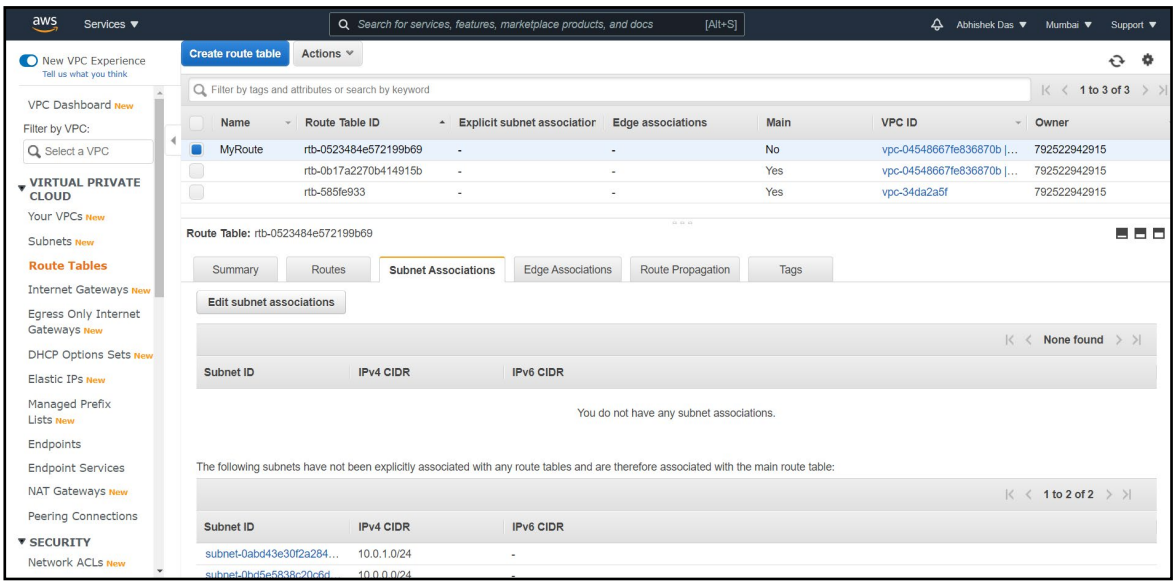
Configuration of Route Table

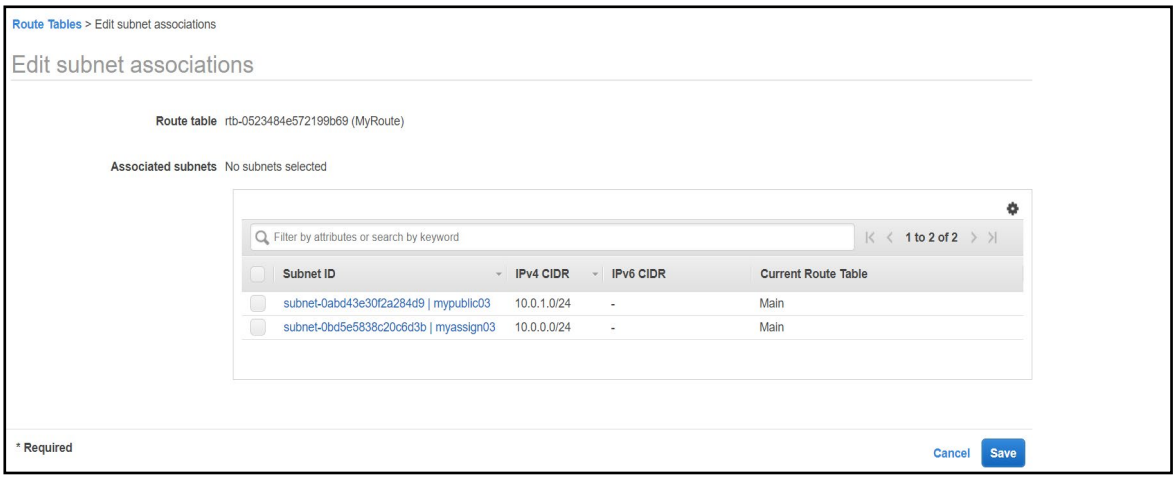
9. Click on Route Table and click on Create route table.



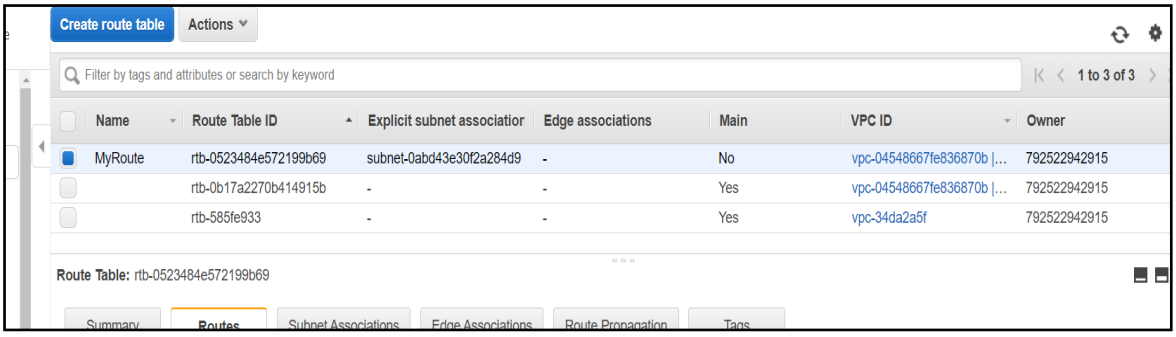
10. Provide its Name tag and browse VPC. Then click on Create.

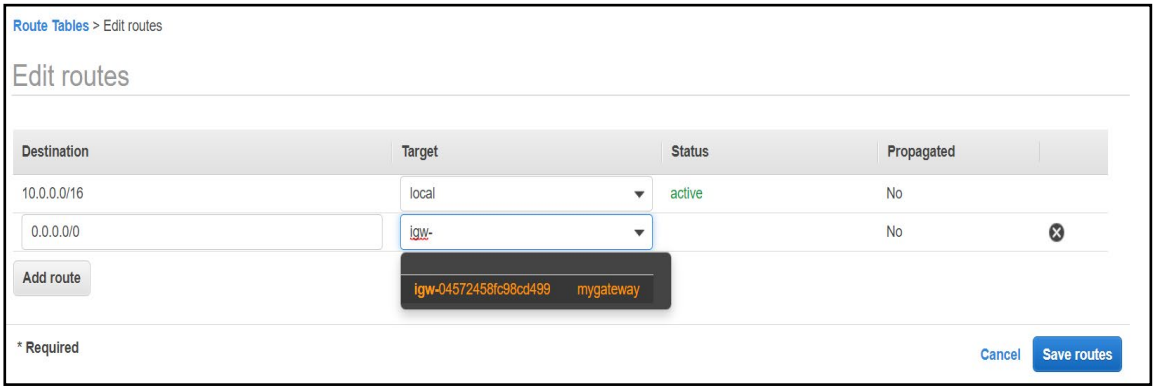
11. Then go to Subnet Association under its detail and select public subnet and click on save.



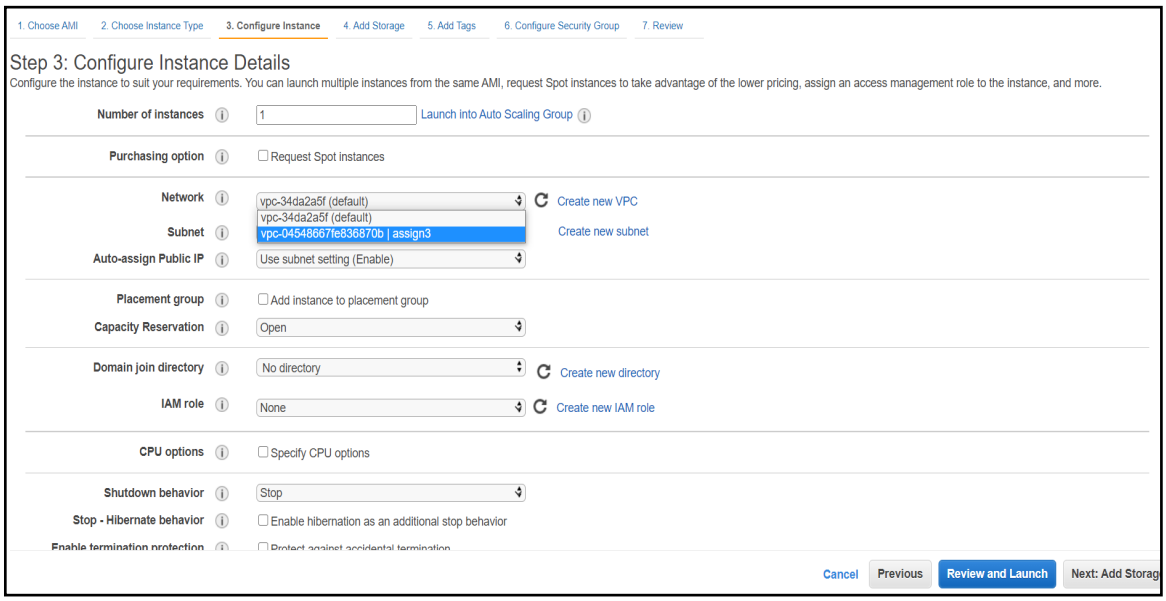


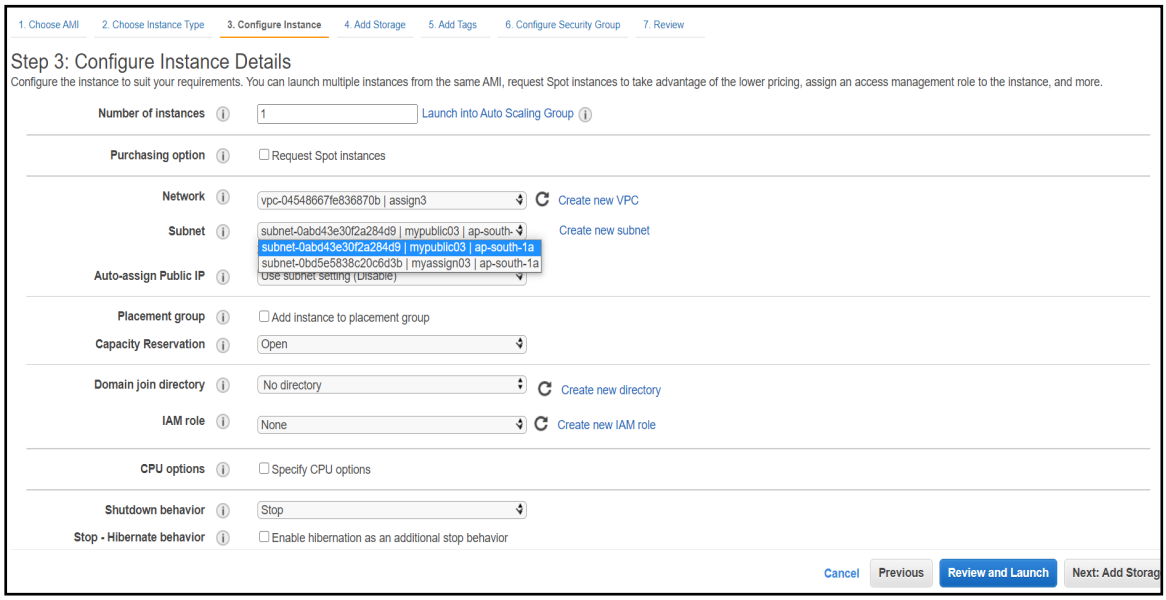
12. Now go to Route and click on Add Route and give its Destination and target.





13. Open EC2 service then where we can find our custom VPC, Subnet.



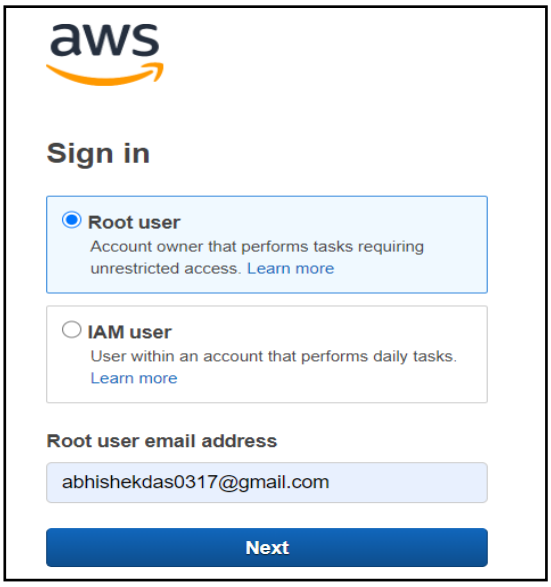


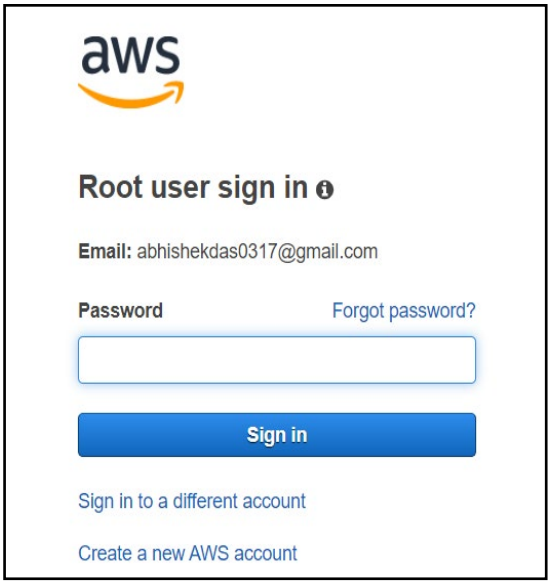
04: EBS

About EBS (Elastic Block Store): Amazon Elastic Block Store (EBS) is an easy to use, high-performance, block-storage service designed for use with Amazon Elastic Compute Cloud (EC2) for both throughput and transaction intensive workloads at any scale.

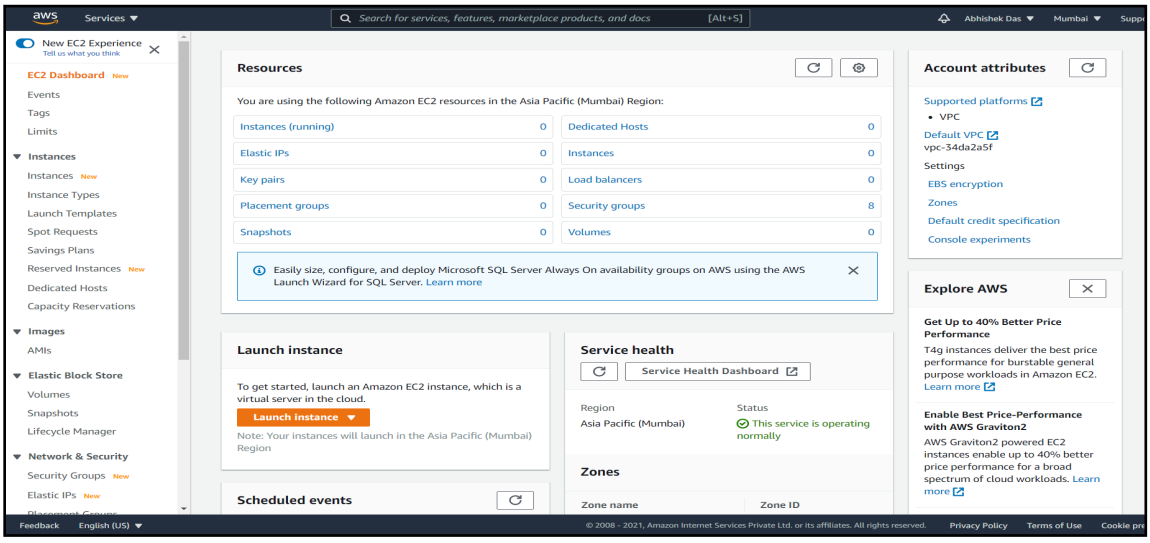
Process to Configure EBS:

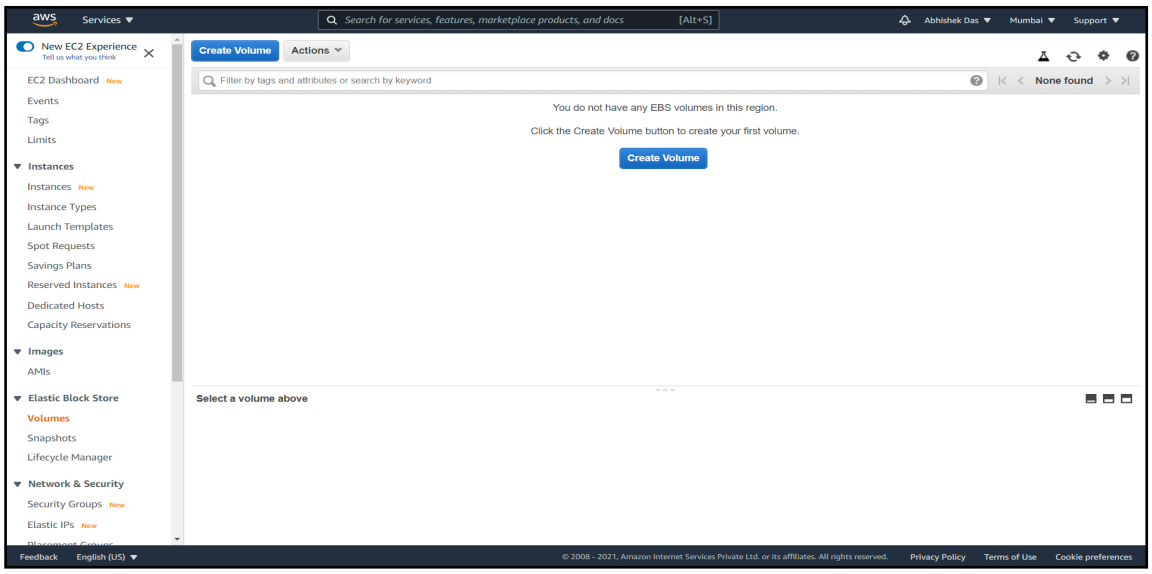
1. Sign in to the AWS Management Console.



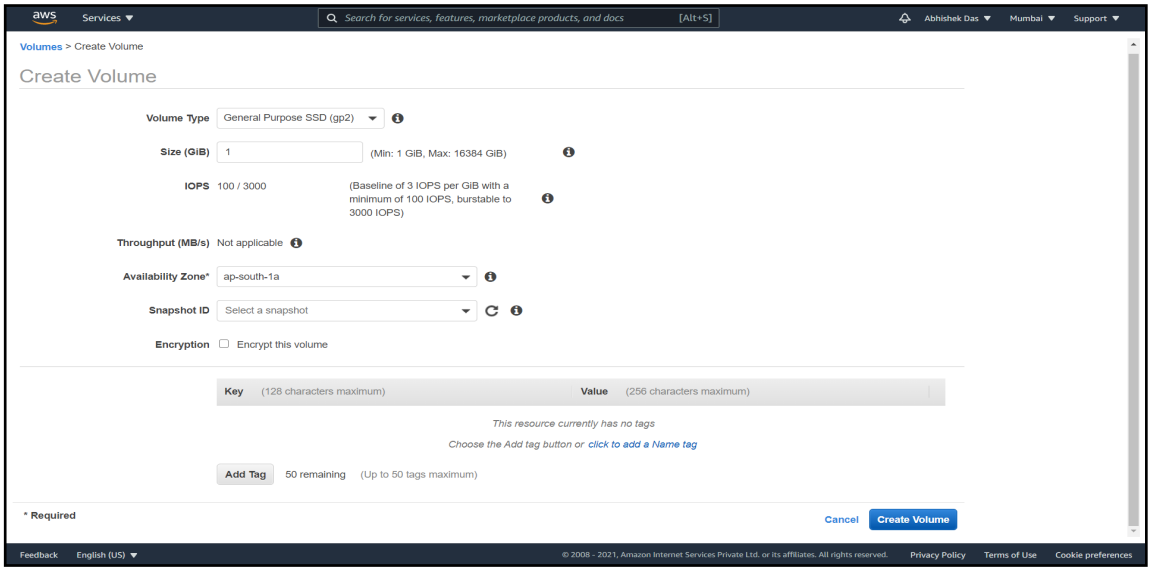


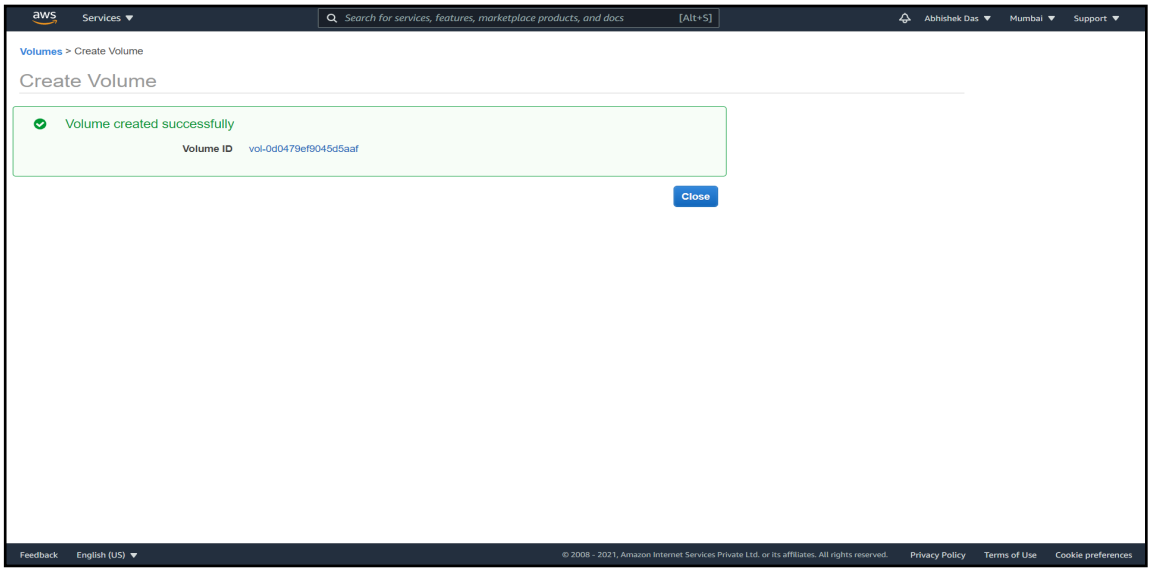
2. Now go to EC2 service and click on volume. Then click on Create Volume.





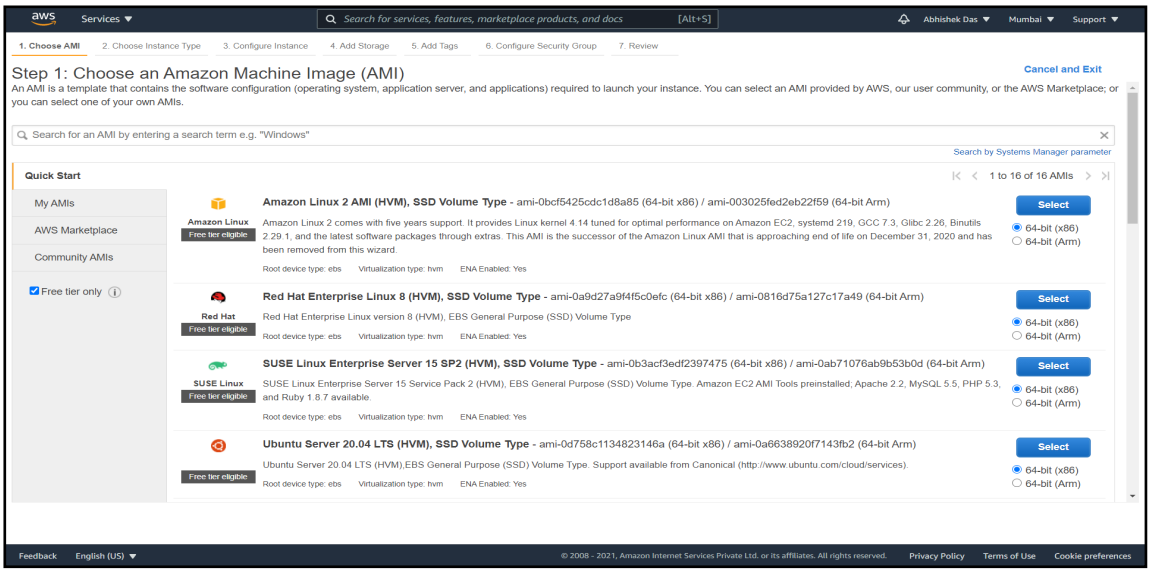
3. Provide its size and click on Create Volume.



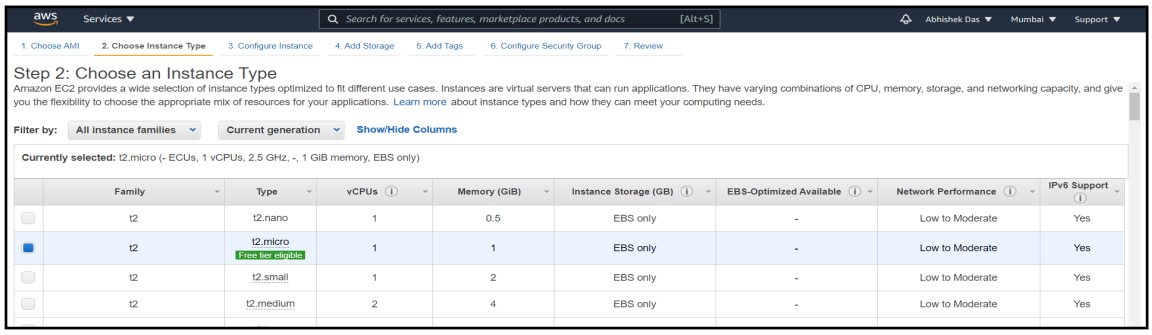


4. After volume creation, create a EC2 instance.

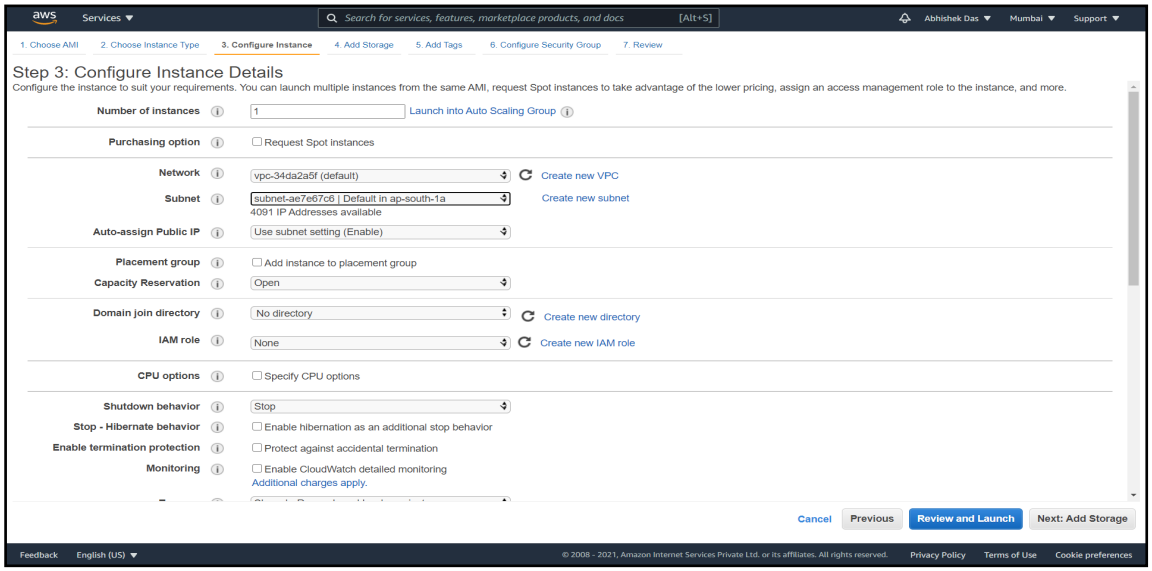
5. Select its Machine image as a “Free tier only”.



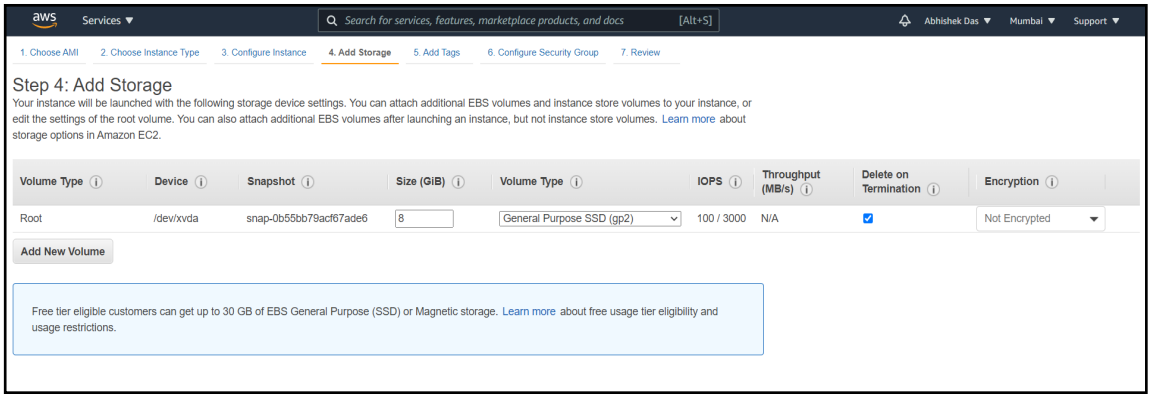
6. Select its Instance Type.



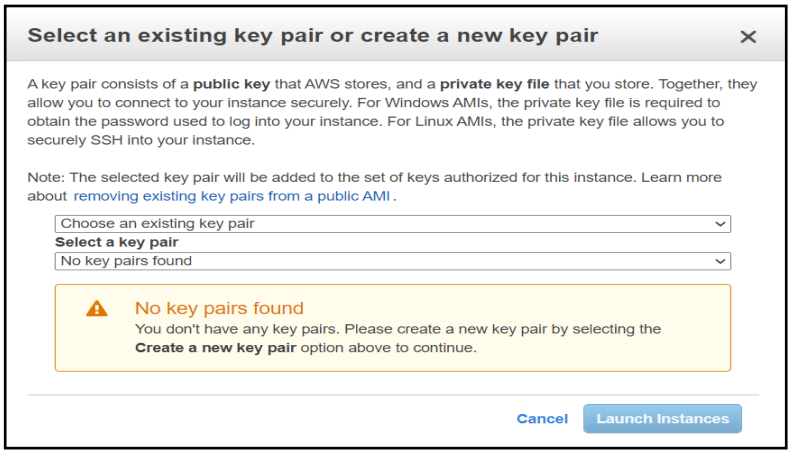
7. Now configure its Instance Detail and give subnet on same location.



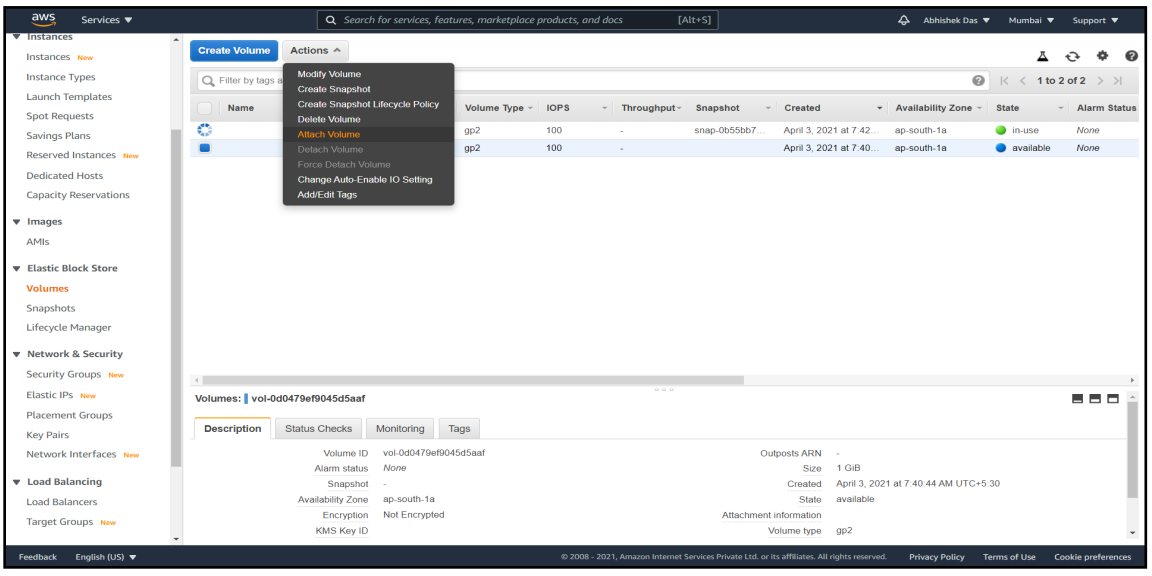
8. Now Add Storage.



9. Now continue without pairing key.



10. Now again go to volume and select previously created volume and in action select “Attach volume”.

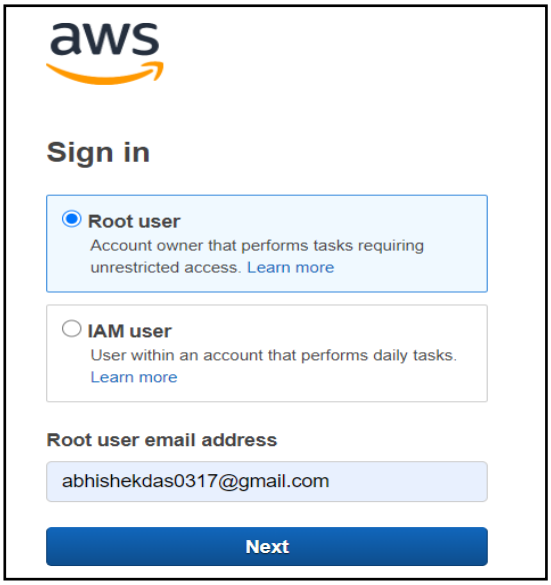


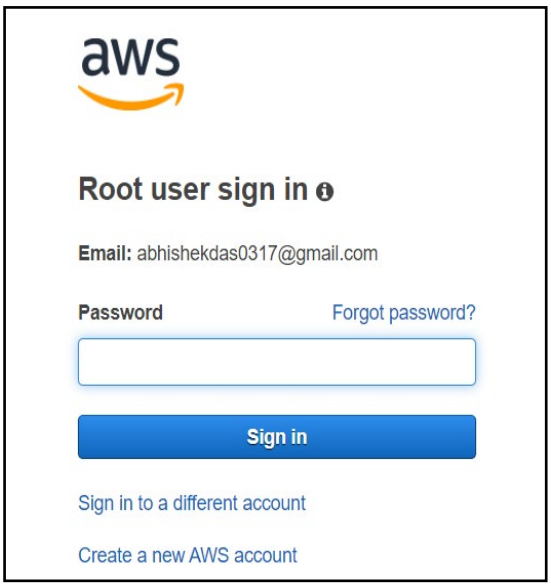
05: LOAD BALANCER

About Load Balancer: Load Balancer provides basic load balancing across multiple Amazon EC2 instances and operates at both the request level and the connection level. Classic Load Balancer is intended for applications that were built within the EC2-Classic network.

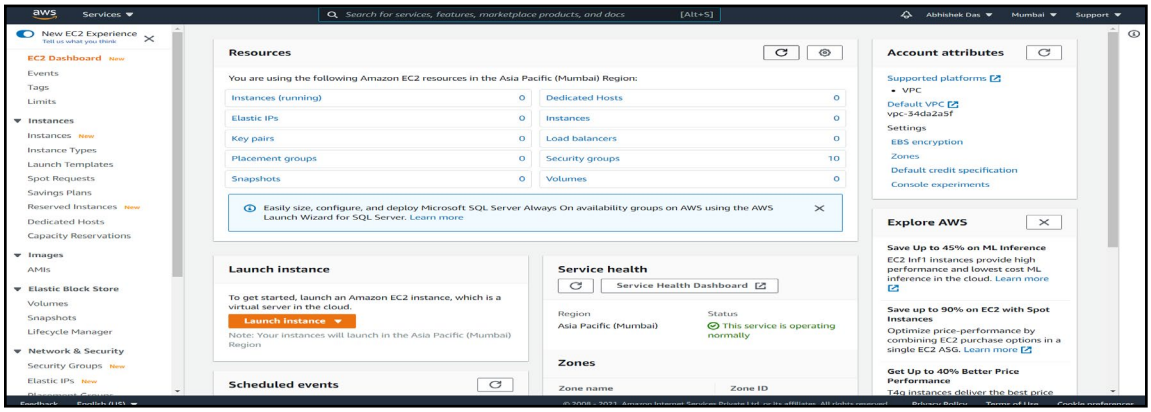
Process to Configure Load Balancer:

1. Sign in to the AWS Management Console.

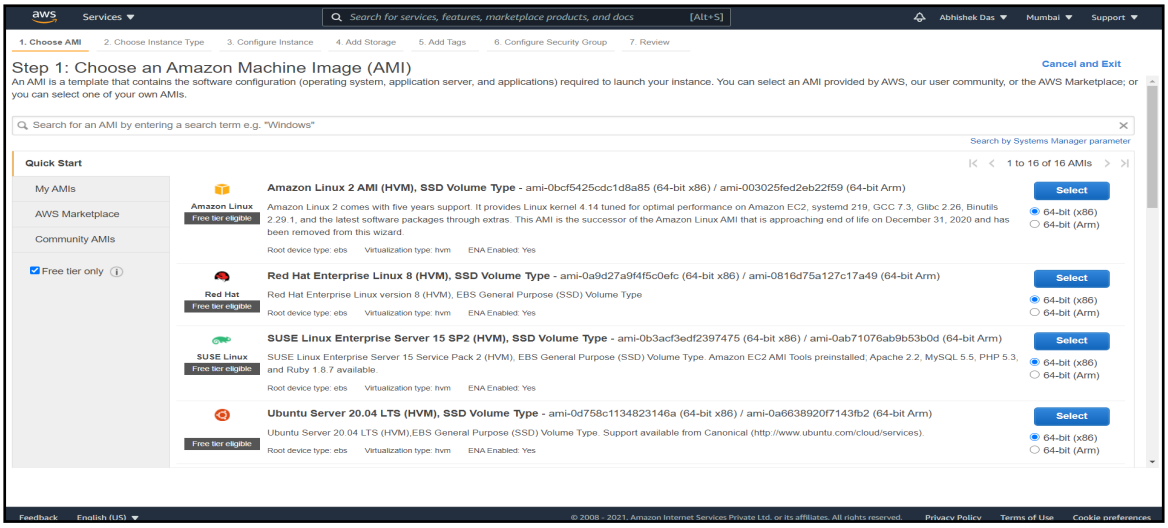




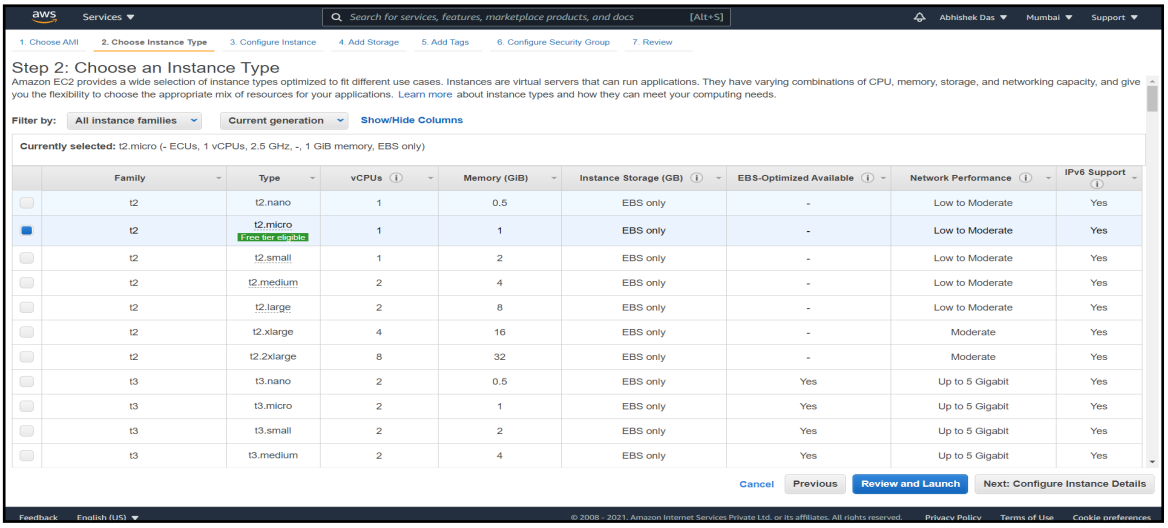
2. Go to EC2 instance creation from service and create instance using free tier.



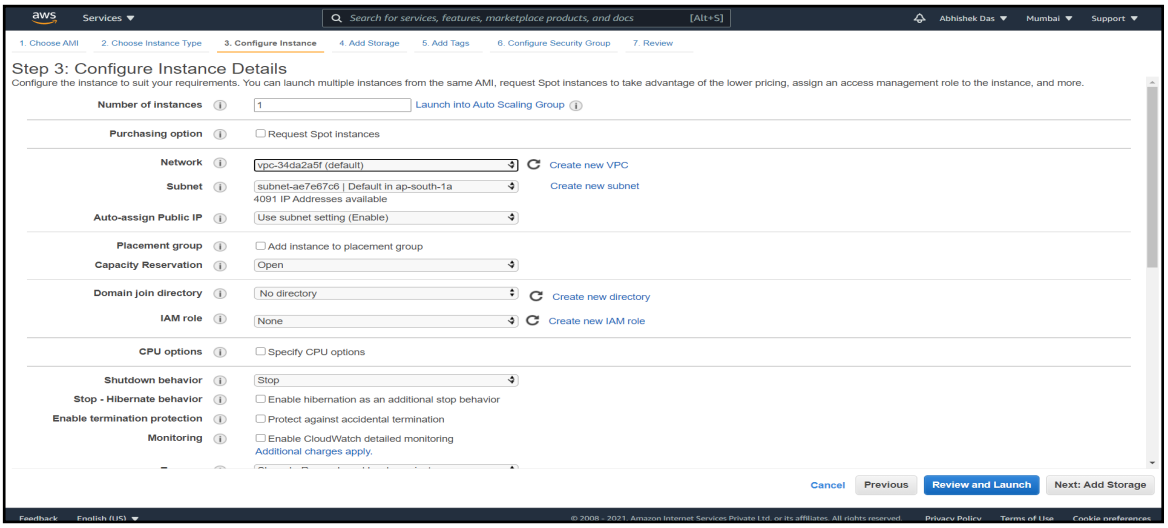
3. Select Machine Image to Free tier only.



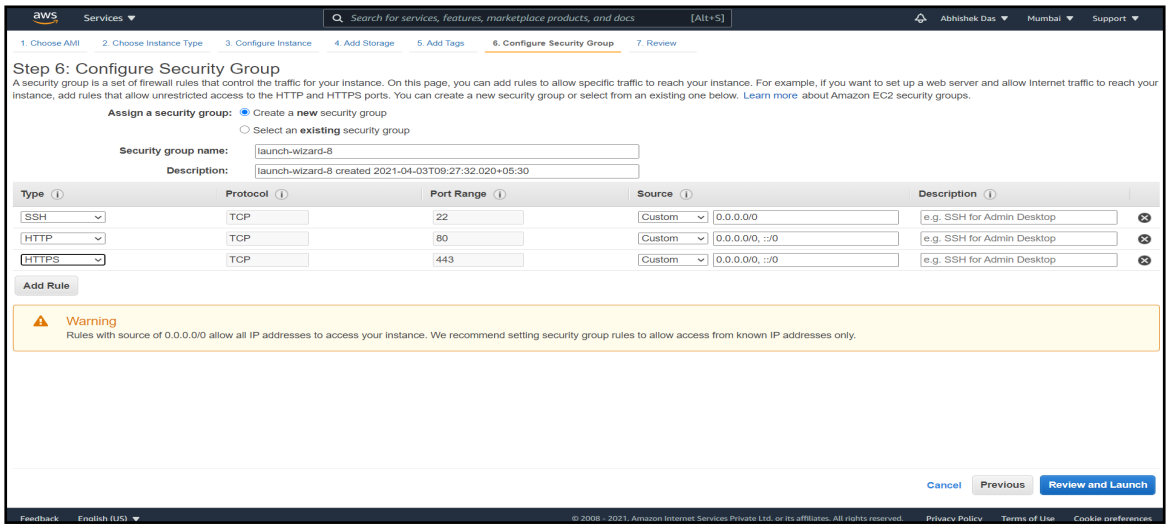
4. Then Select Instance Type.



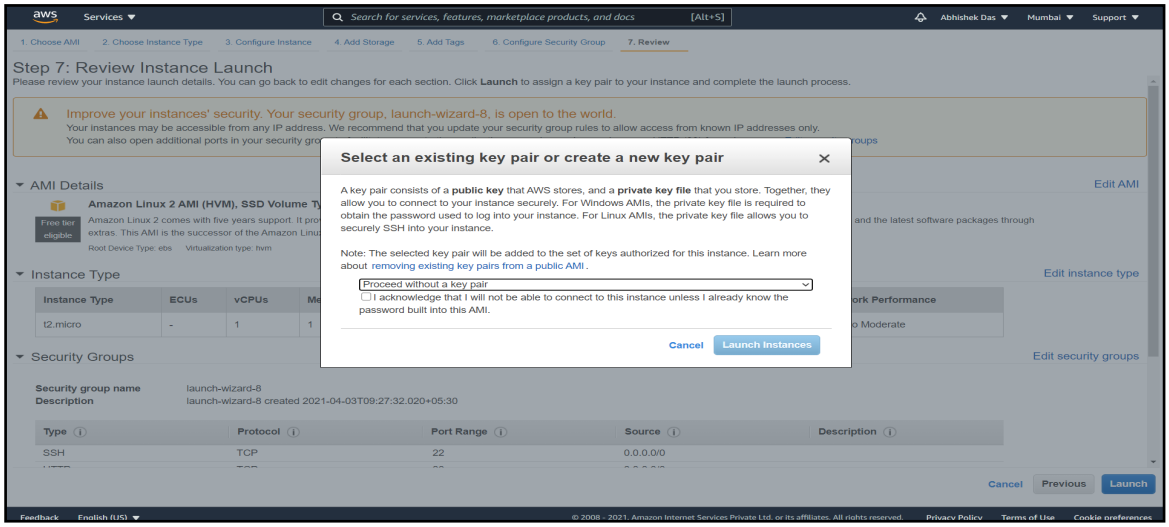
5. In Instance detail select Subnet of one zone.



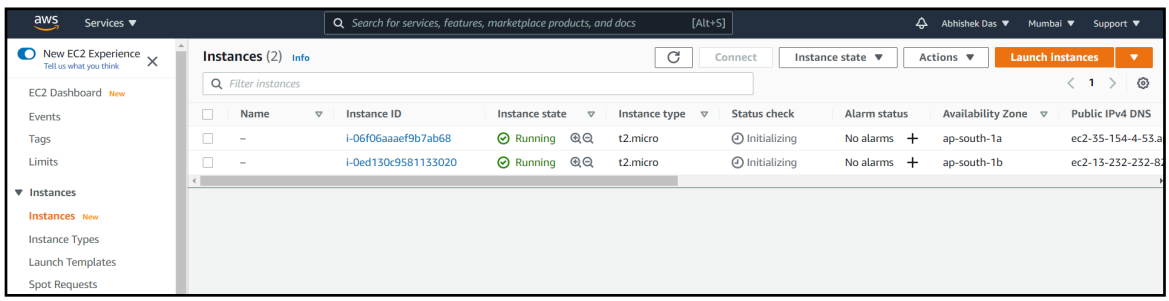
6. Now Configure security group by providing type (http, https).



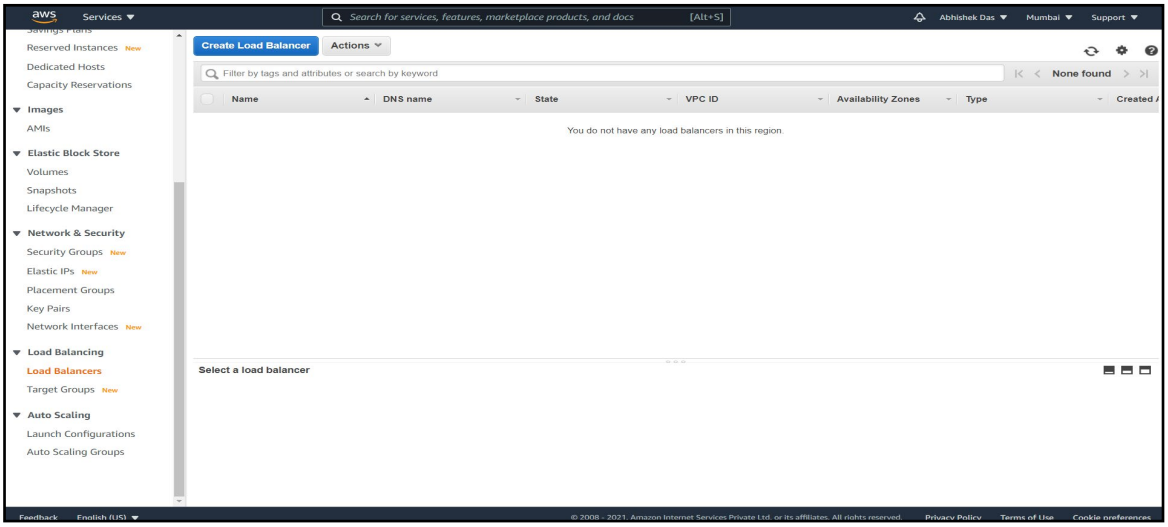
7. Then continue without security pair key.



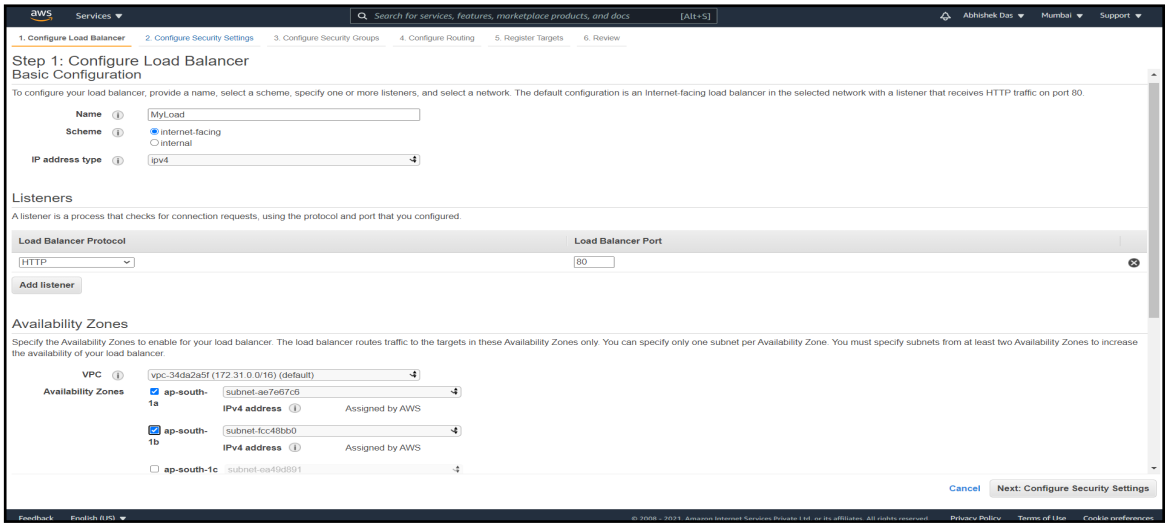
8. Similarly create another instance but choose different Subnet during configuration instance detail.



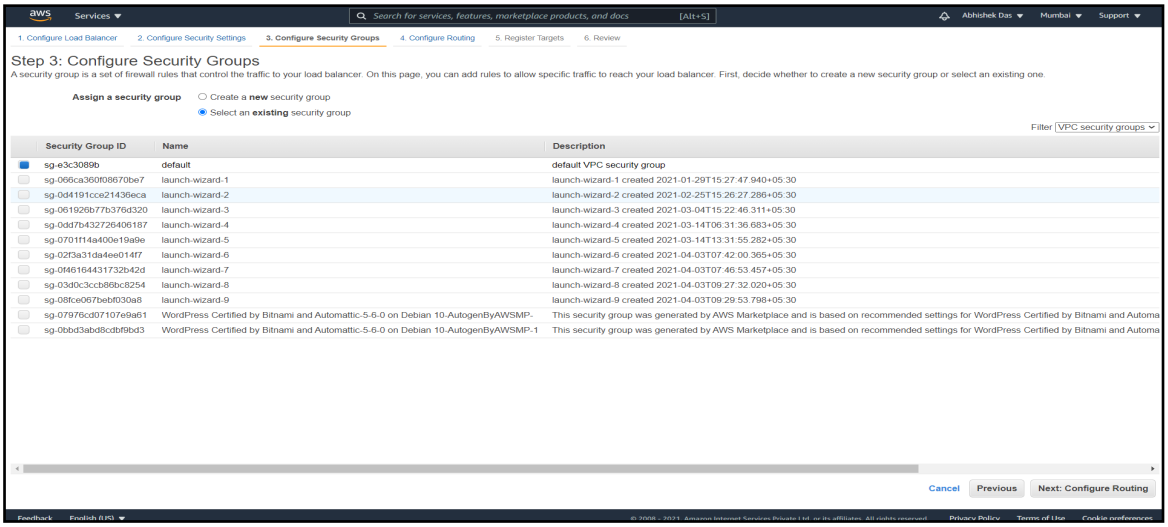
9. Now click on Load Balancer.



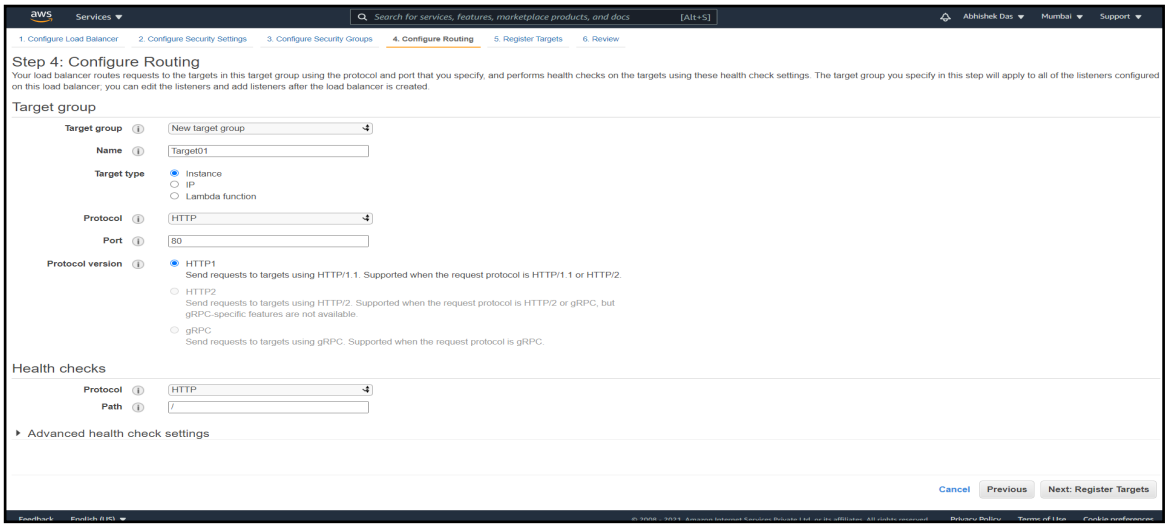
10. Then click on Application Load Balancer and provide its name, VPC, availability zone (choose two).

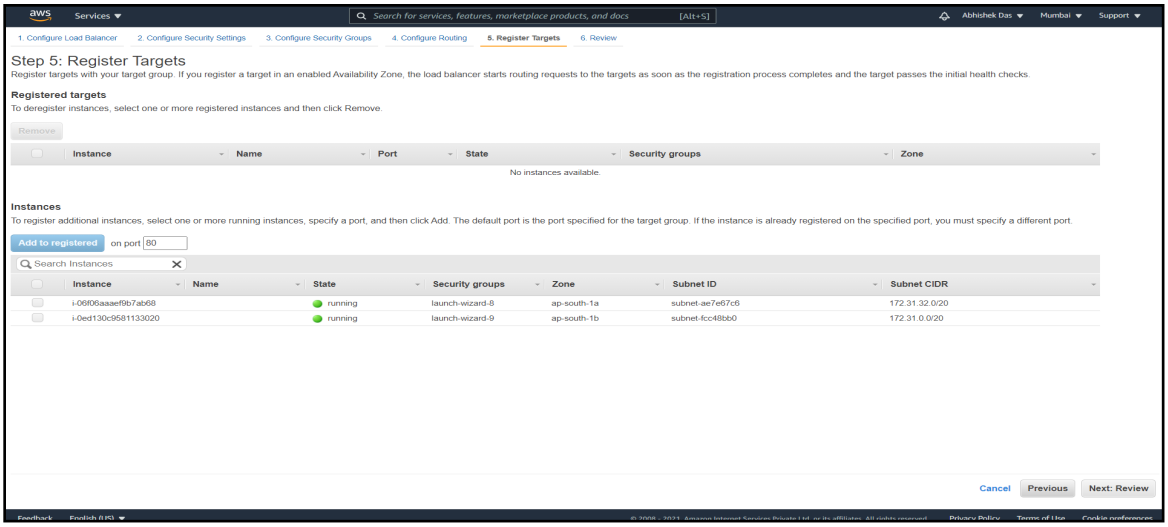


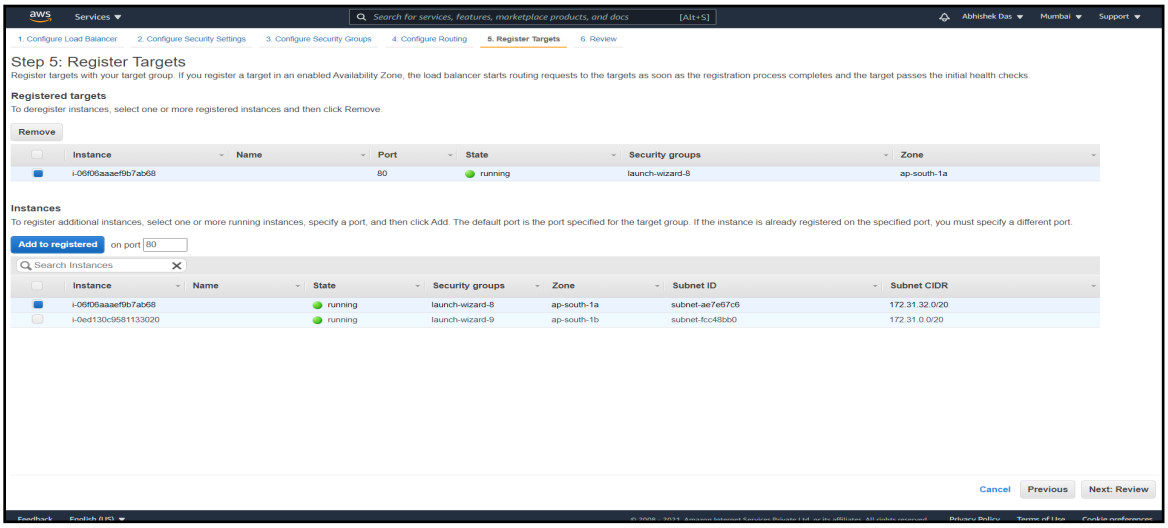
11. Choose default security group.

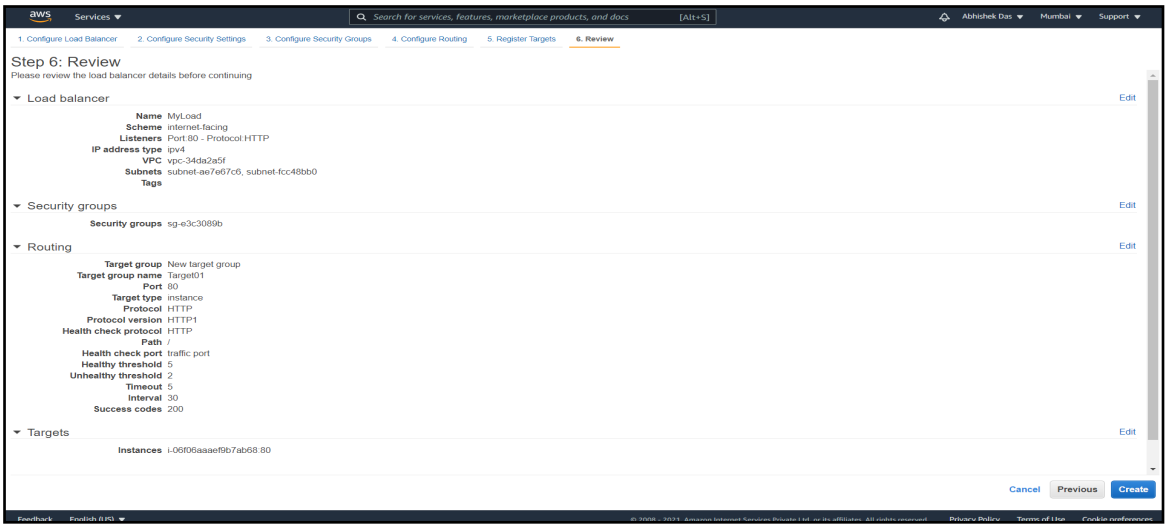


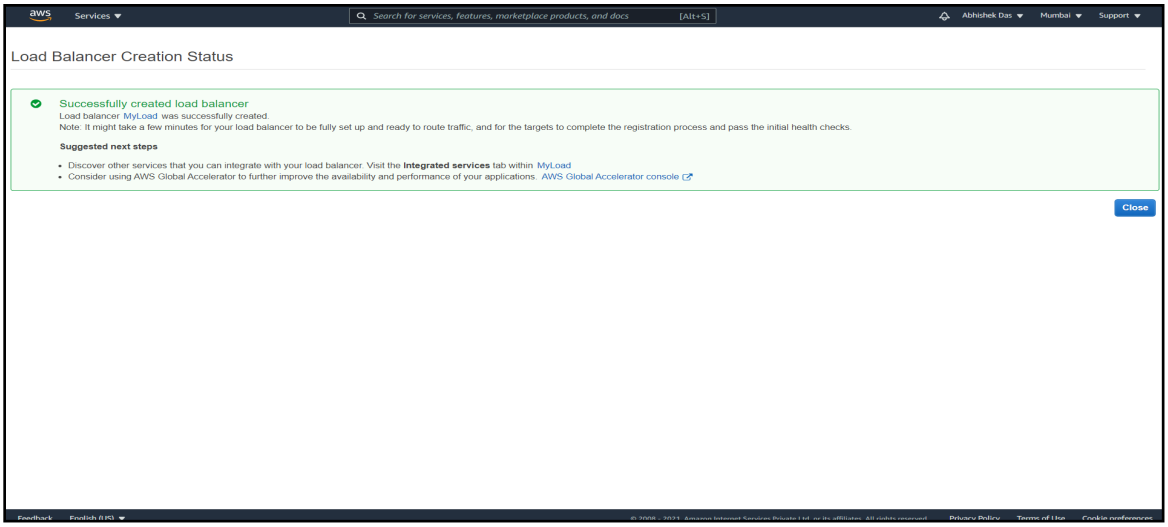
12. Now configure Routing by providing its target name. Then click on next select one instance and register it.

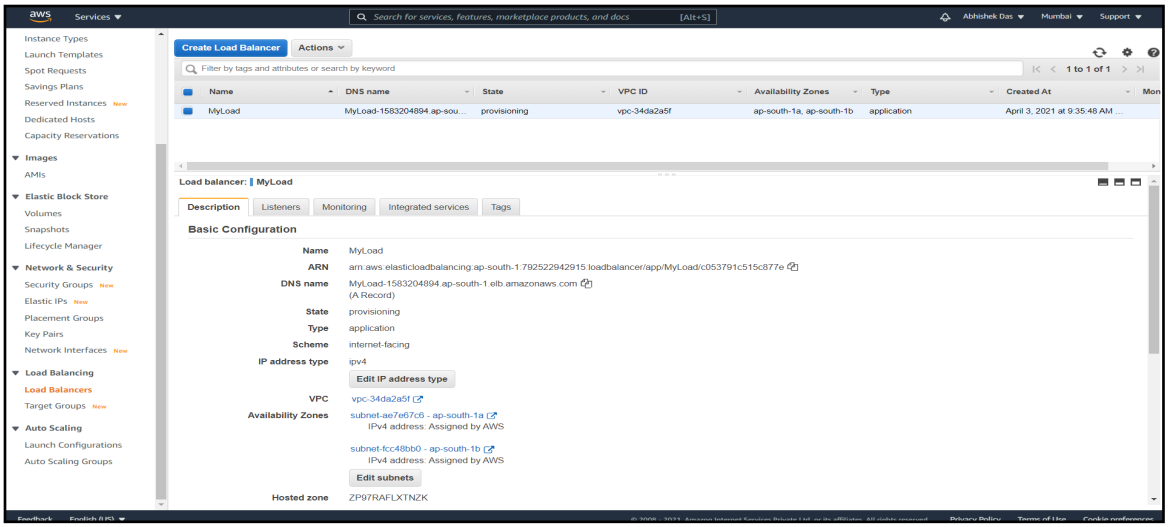







Step 6: Review
Please review the load balancer details before continuing
Load balancer
Name MyLoad
Scheme internet-facing
Listeners Port:80 - Protocol:HTTP
IP address type ipv4
VPC vpc-34da2a5f
Subnets subnet-ae7e67c6, subnet-fcc48bb0
Tags
Security groups
Security groups sg-e3c3089b
Routing
Target group New target group
Target group name Target01
Port 80
Target type instance
Protocol HTTP
Protocol version HTTP1
Health check protocol HTTP
Path /
Health check port traffic port
Healthy threshold 5
Unhealthy threshold 2
Timeout 5
Interval 30
Success codes 200
Targets
Instances i-06f06aaaef9b7ab68:80
Cancel
Previous
Create


Load Balancer Creation Status
Successfully created load balancer
Load balancer MyLoad was successfully created.
Note: It might take a few minutes for your load balancer to be fully set up and ready to route traffic, and for the targets to complete the registration process and pass the initial health checks.
Suggested next steps
Discover other services that you can integrate with your load balancer. Visit the Integrated services tab within MyLoad
Consider using AWS Global Accelerator to further improve the availability and performance of your applications. AWS Global Accelerator console
Close

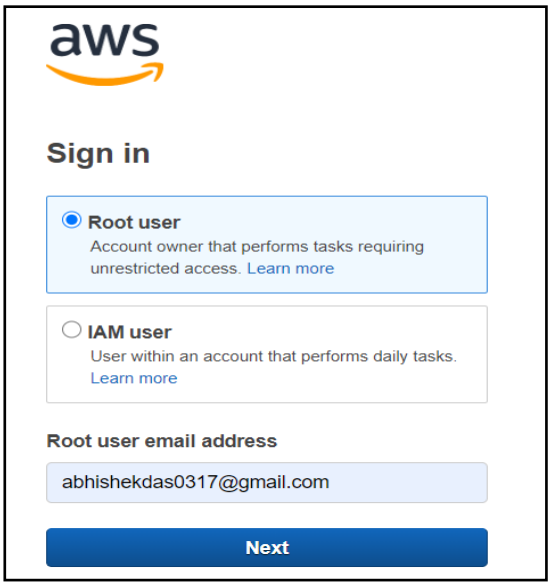

Create Load Balancer
Actions
Name
DNS name
State
VPC ID
Availability Zones
Type
Created At
MyLoad
MyLoad-1583204894.ap-sou...
provisioning
vpc-34da2a5f
ap-south-1a, ap-south-1b
application
April 3, 2021 at 9:35:48 AM ...
Load balancer: MyLoad
Description
Listeners
Monitoring
Integrated services
Tags
Basic Configuration
Name MyLoad
ARN arn:aws:elasticloadbalancing:ap-south-1:792522942915:loadbalancer/app/MyLoad/c053791c515c877e
DNS name MyLoad-1583204894.ap-south-1.elb.amazonaws.com (A Record)
State provisioning
Type application
Scheme internet-facing
IP address type ipv4
Edit IP address type
VPC vpc-34da2a5f
Availability Zones subnet-ae7e67c6 - ap-south-1a IPv4 address: Assigned by AWS
subnet-fcc48bb0 - ap-south-1b IPv4 address: Assigned by AWS
Edit subnets
Hosted zone ZP97RAFLXTNZK

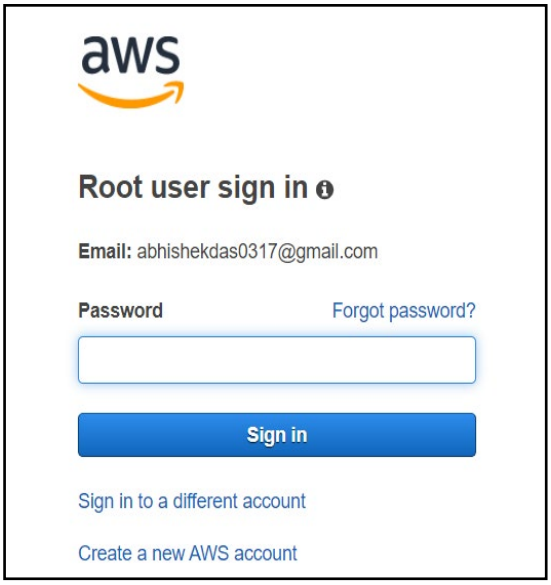
06: AWS LAMBDA

About AWS Lambda: AWS Lambda is a serverless compute service that lets you run code without provisioning or managing servers, creating workload-aware cluster scaling logic, maintaining event integrations, or managing runtimes.

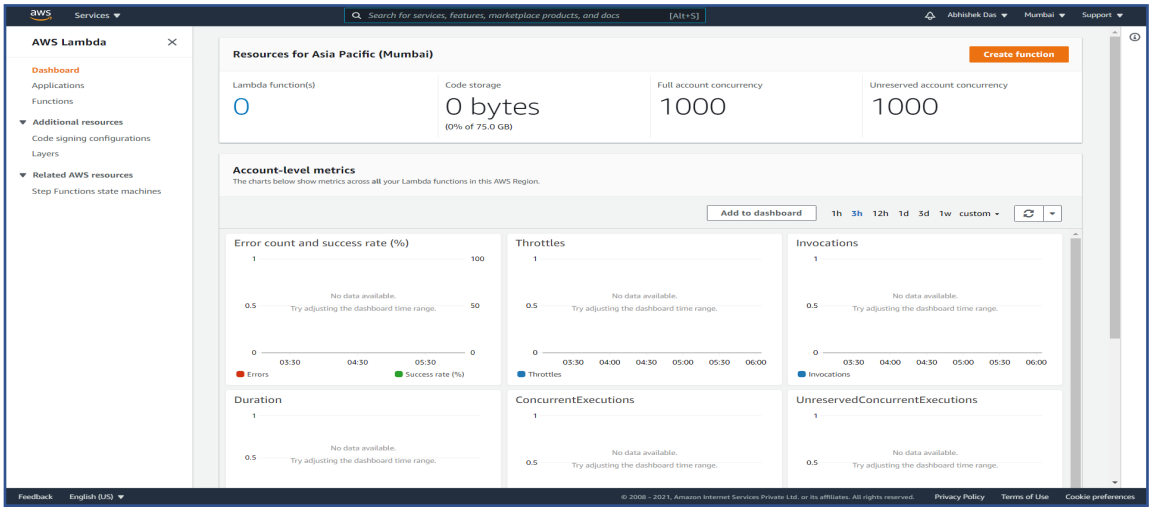
Process to Configure AWS Lambda:

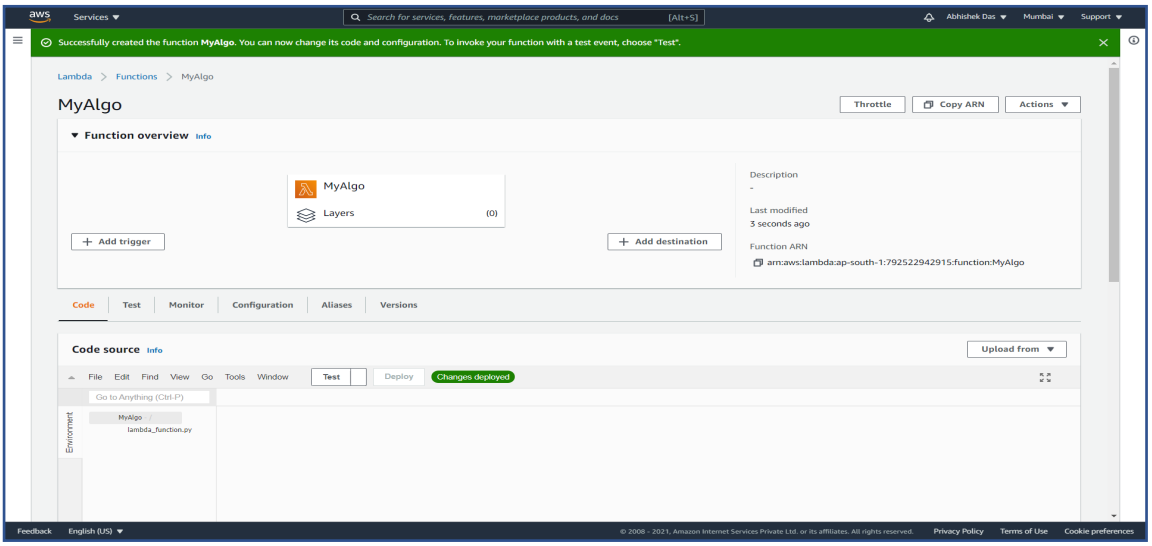
1. Sign in to the AWS Management Console.



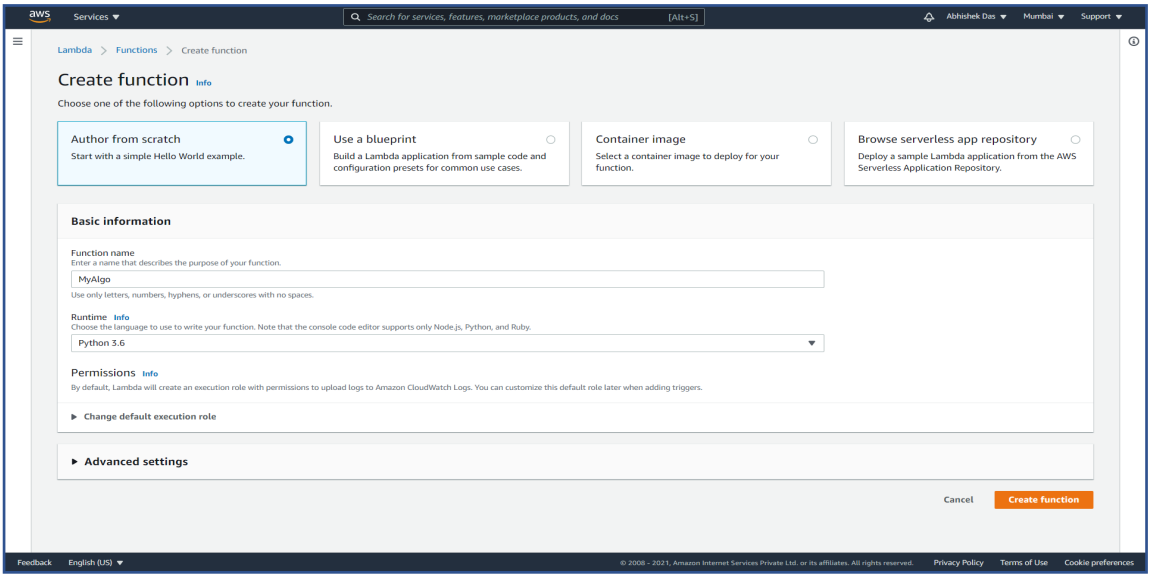


2. Open Lambda from service.

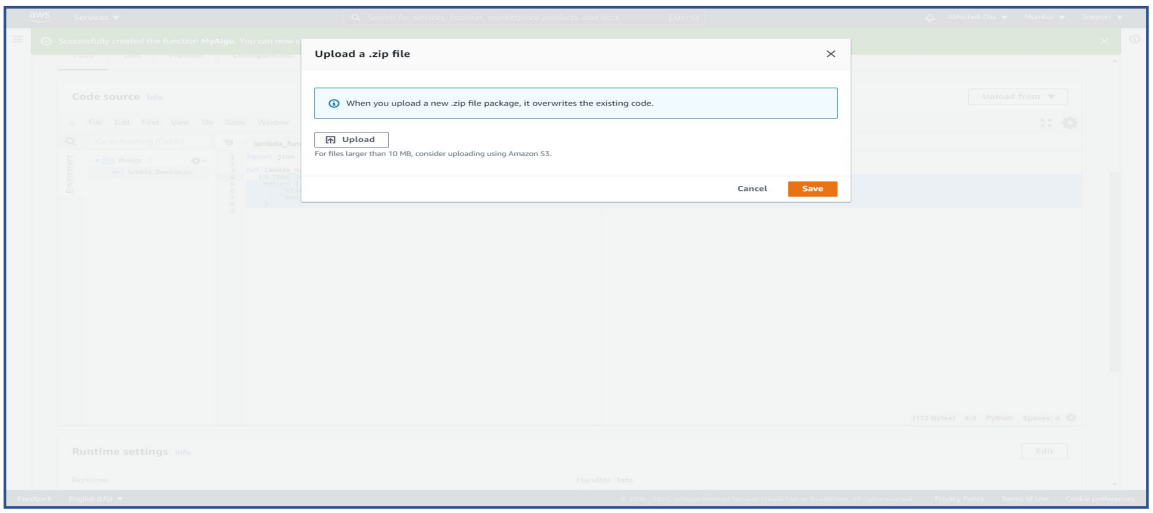




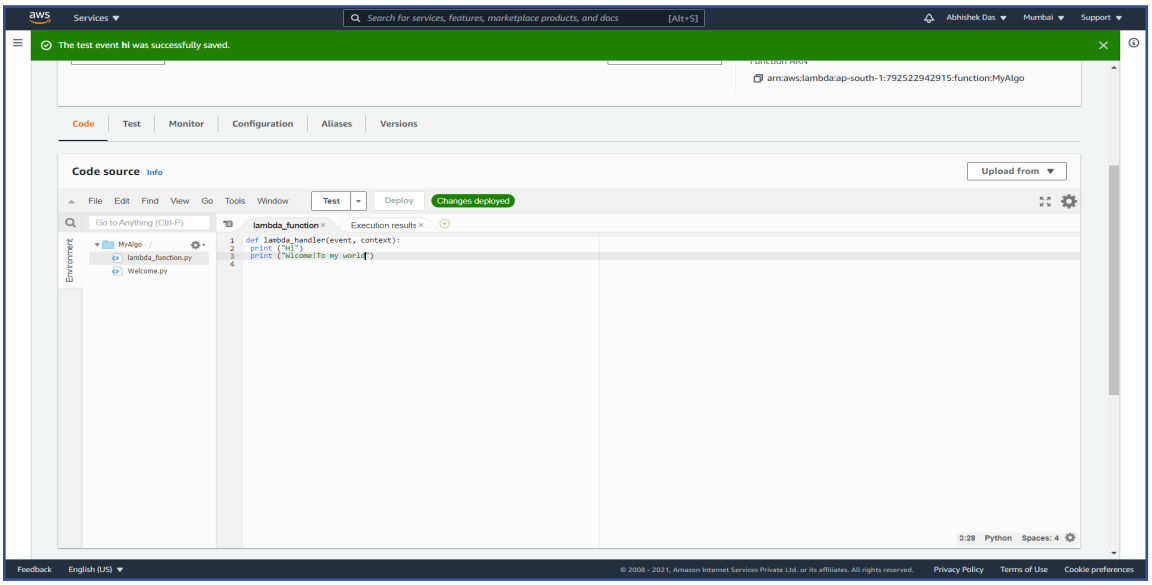
3. Click on Create function and provide function name, runtime.

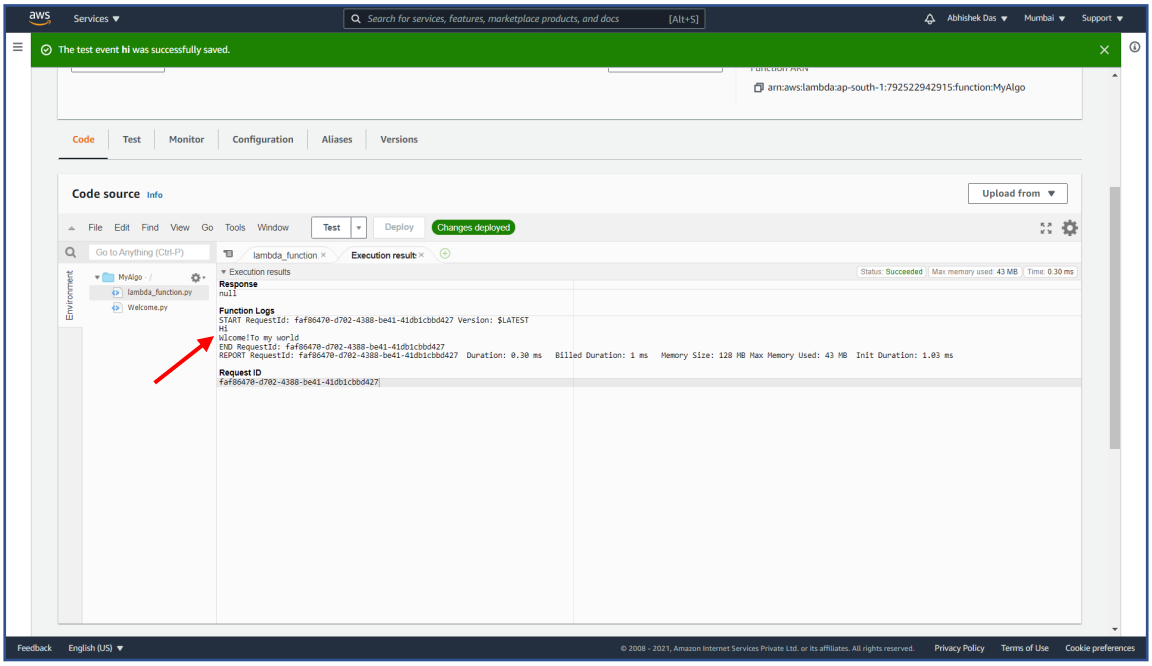


4. Now we execute our code and even upload our code file from S3 bucket also.



5. Now go to text editor type your code and test it.



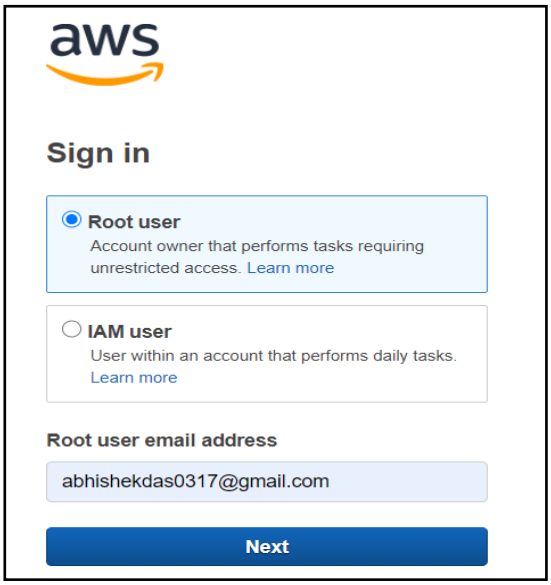


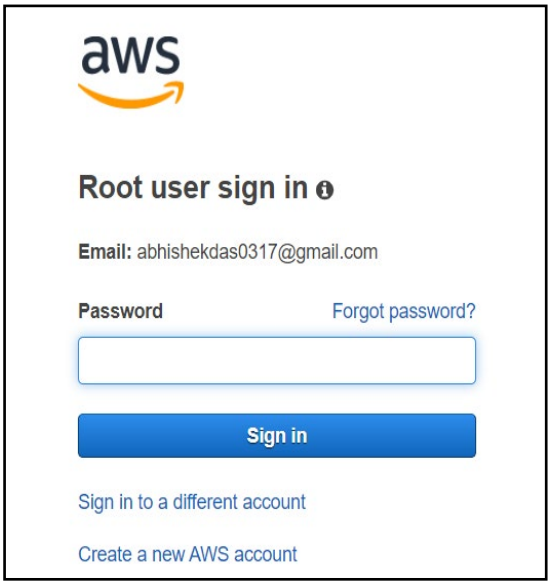
07: Auto Scaling

About Auto Scaling: AWS Auto Scaling monitors your applications and automatically adjusts capacity to maintain steady, predictable performance at the lowest possible cost. Using AWS Auto Scaling, it's easy to setup application scaling for multiple resources across multiple services in minutes.

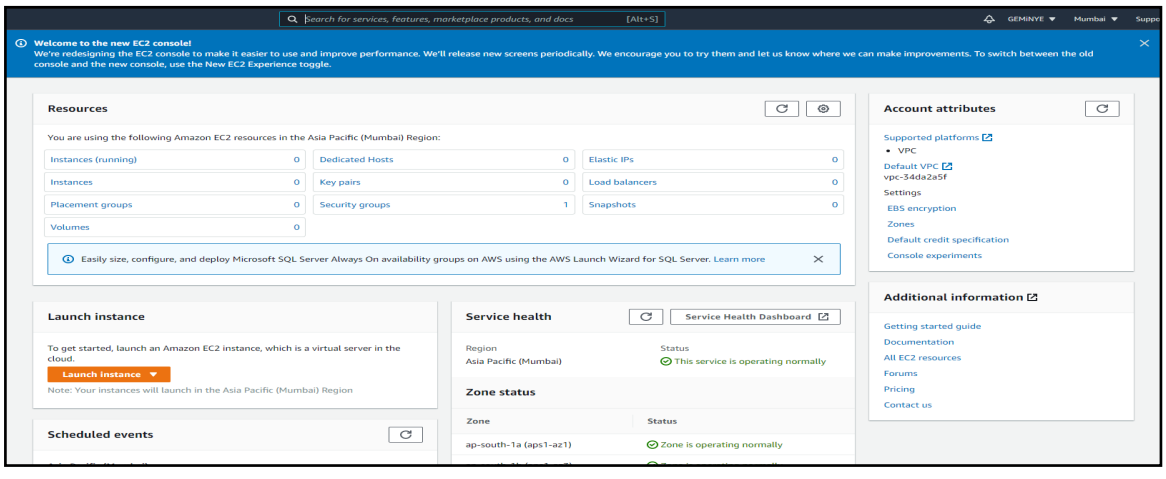
Process to Configure Auto Scaling:

1. Sign in to the AWS Management Console.

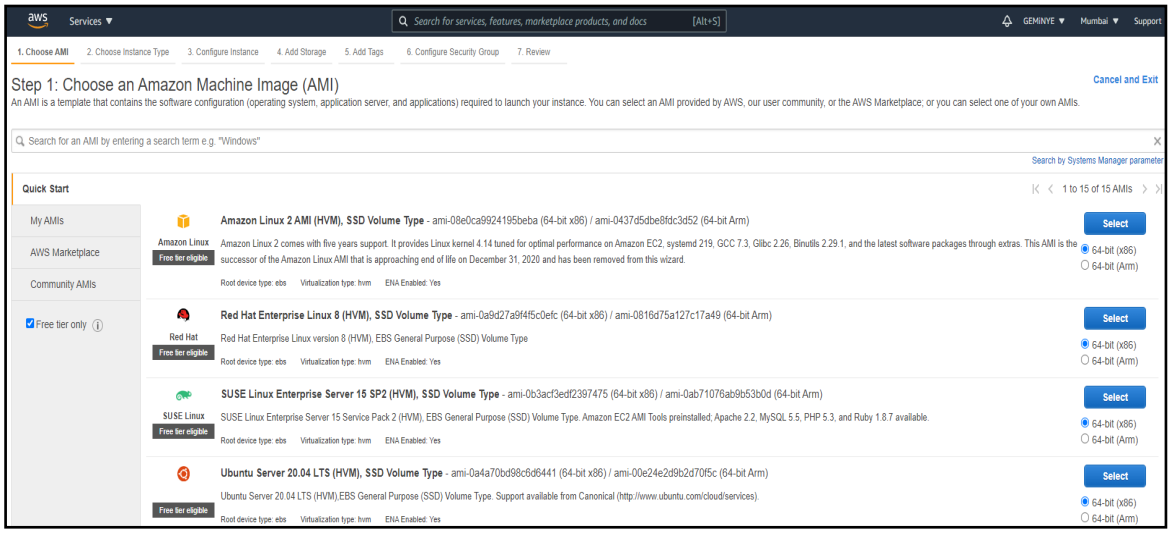




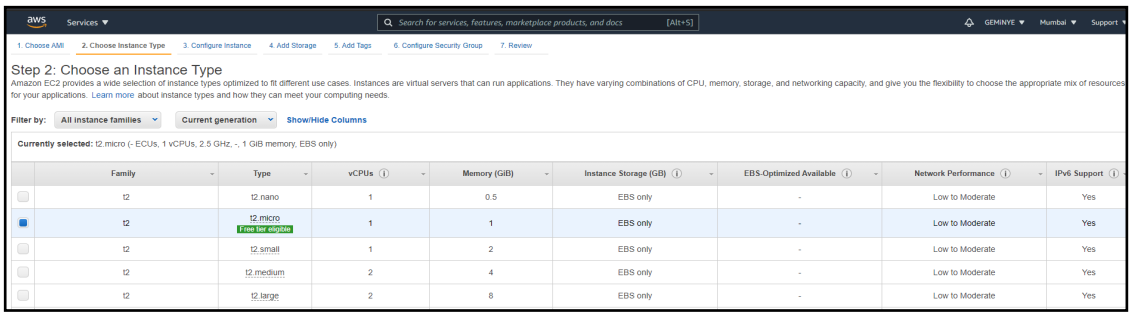
2. Choose EC2 from compute services and click on launch instance.



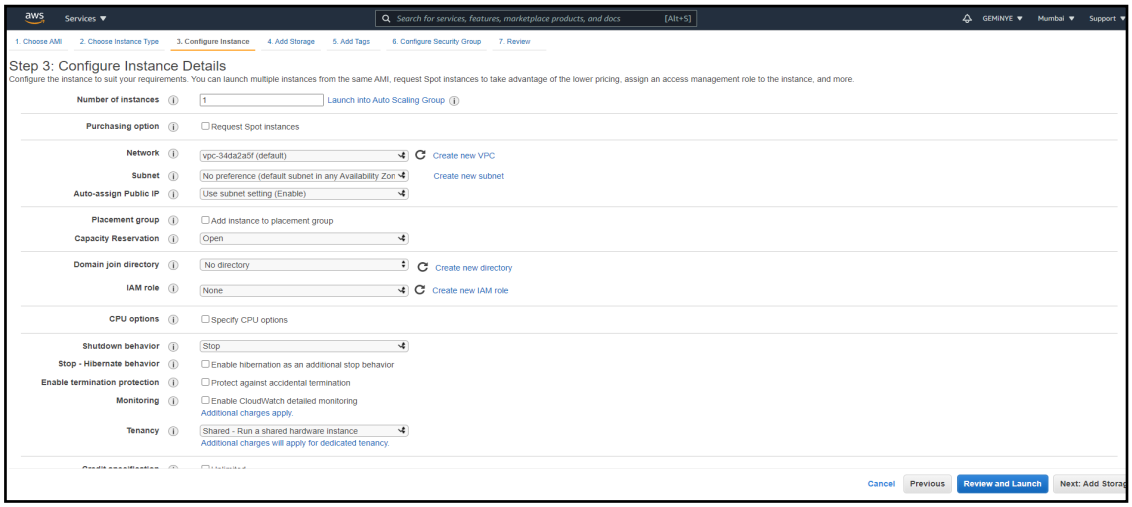
3. Tick on free tier and select AMI AMZON from free tier services.

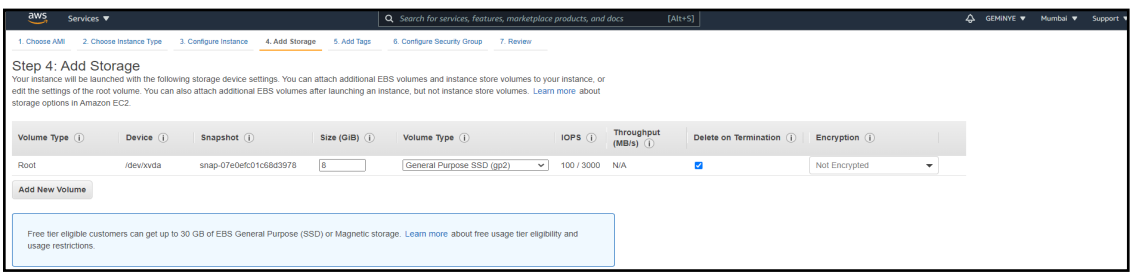


4. Choose free tier 1cpu 1gh ram (t2 micro).

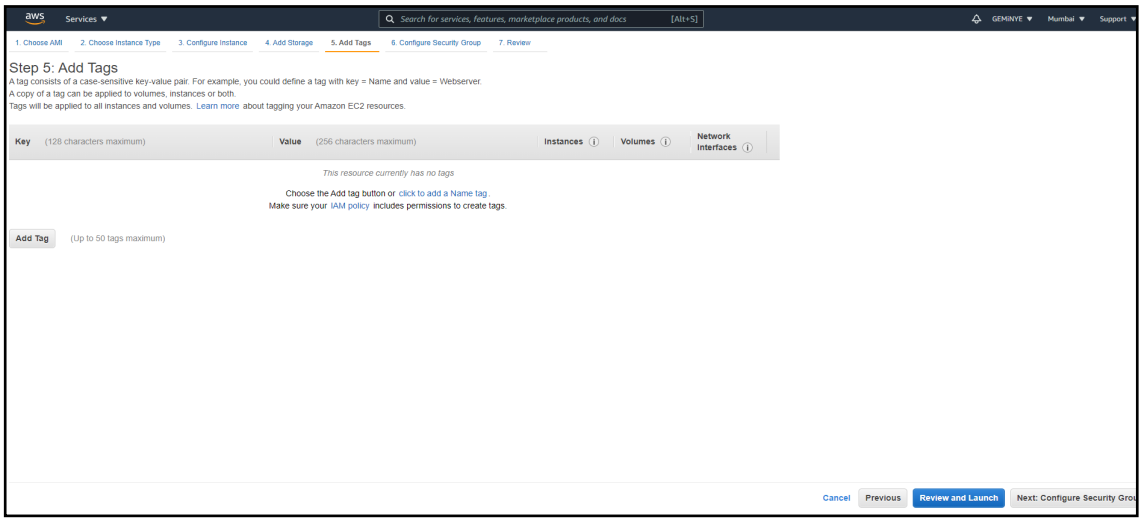


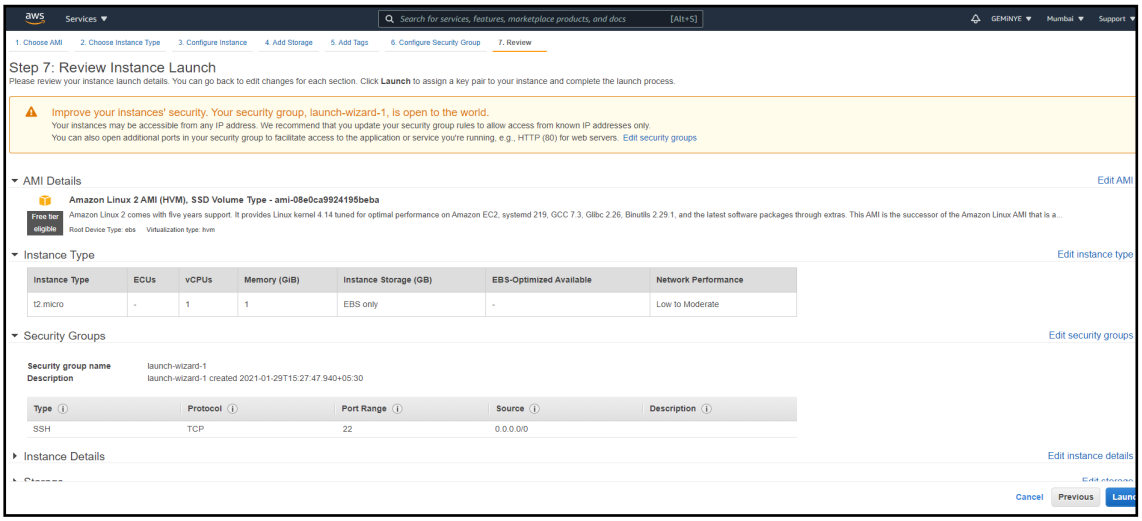
5. Configure instance detail and add storage.



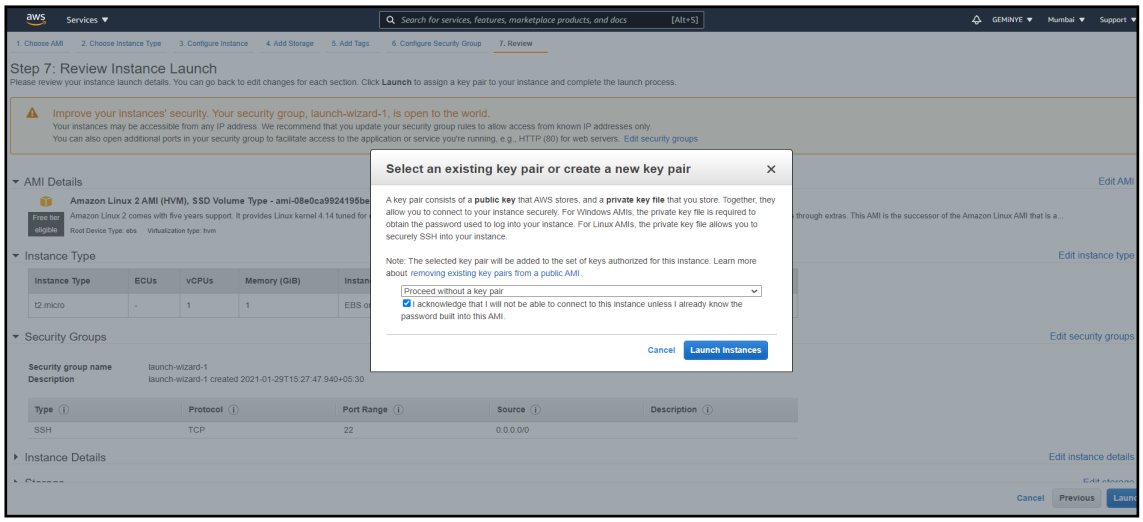


6. Click on review and launch.

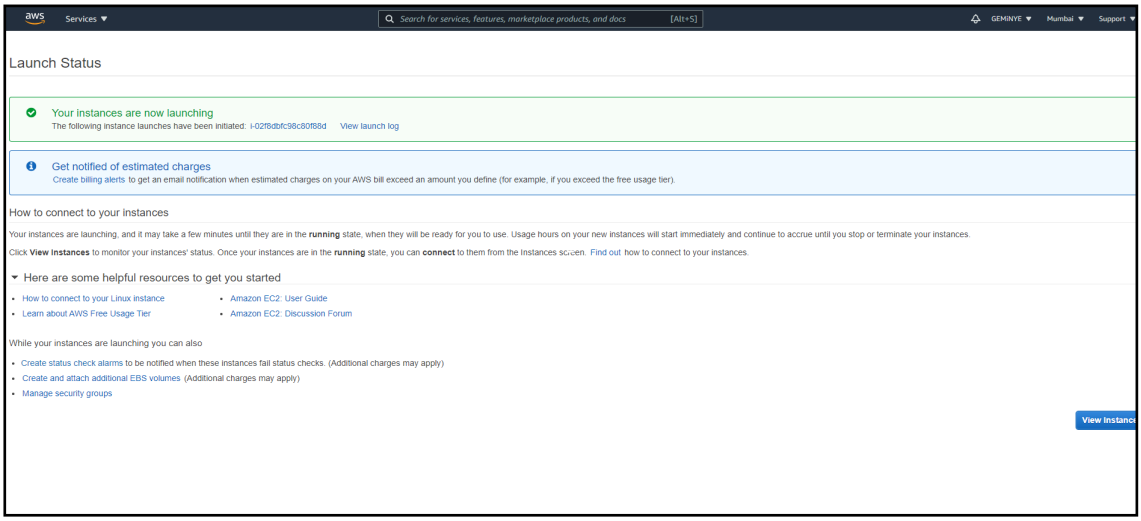




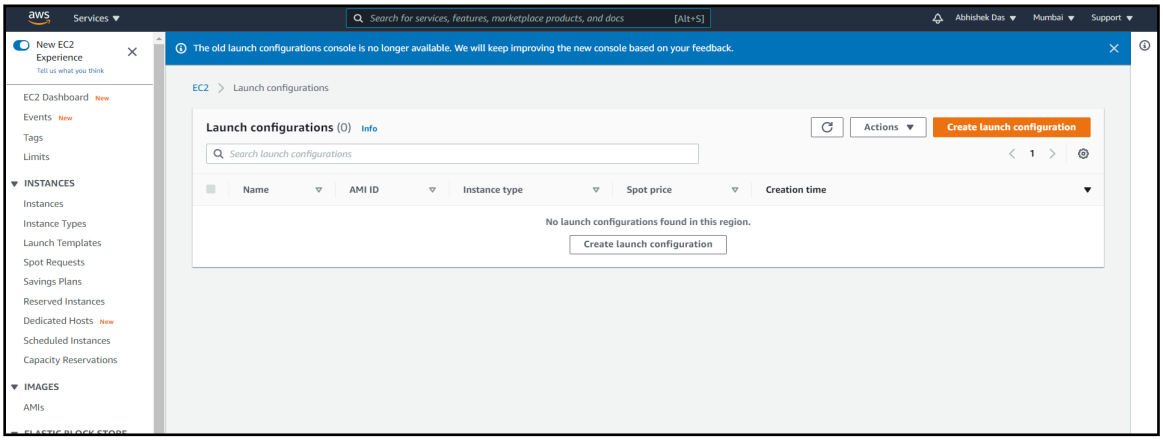
7. Continue without a key pair.



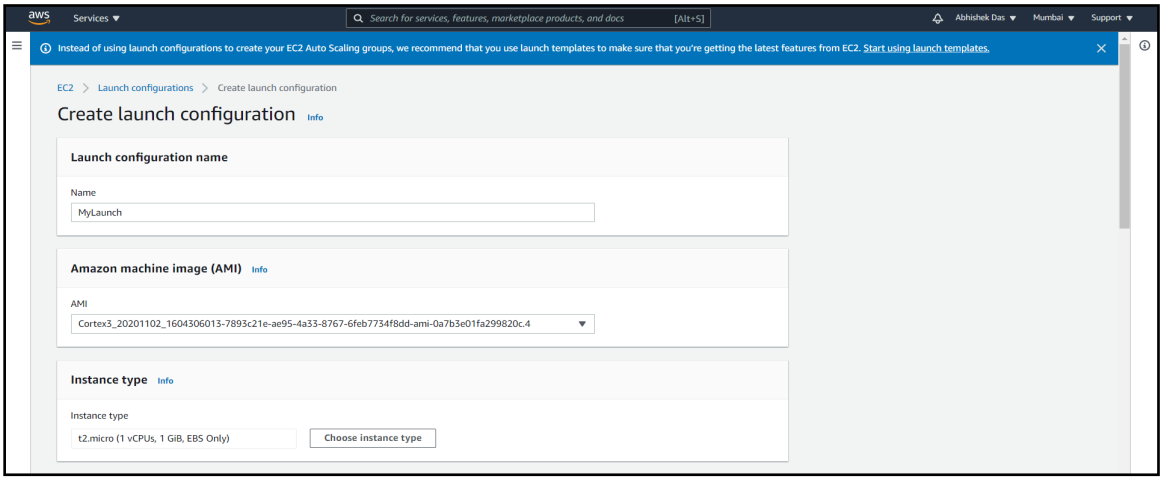
8. Click on launch Instance.



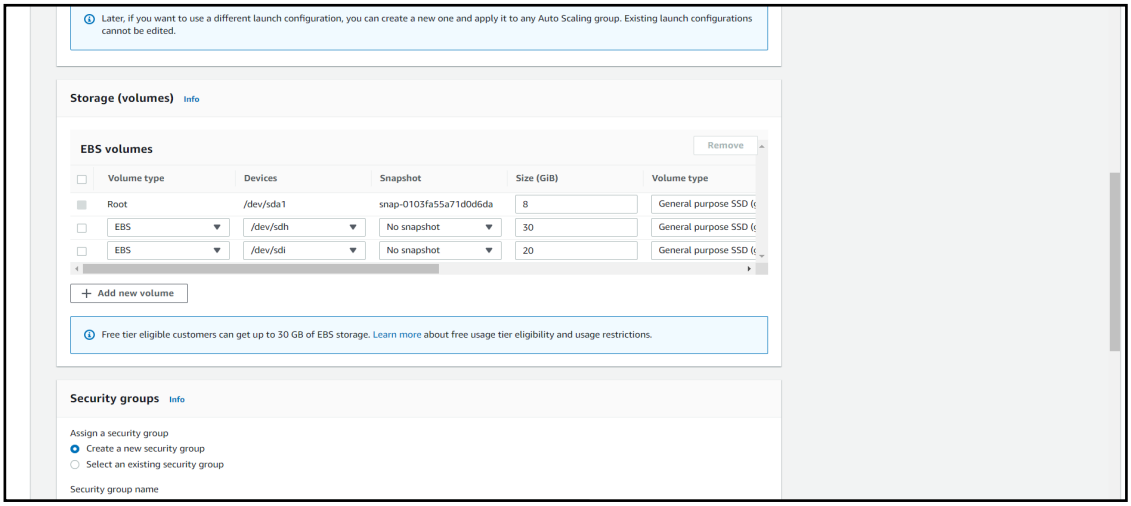
9. Now click on Launch Configuration under Auto Scaling and create Launch Configuration.



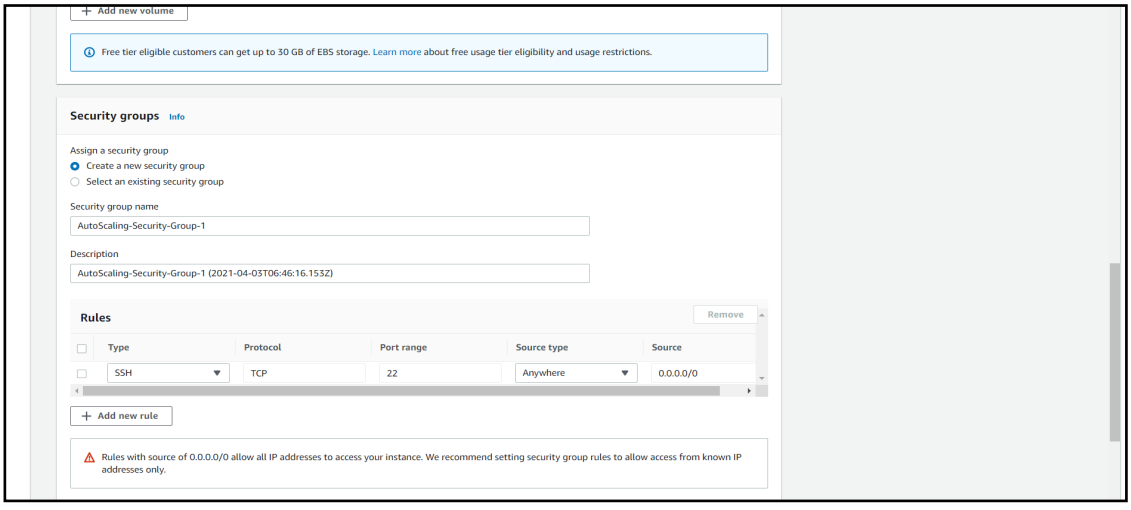
10. Then provide Name, AMI, Instance Type.



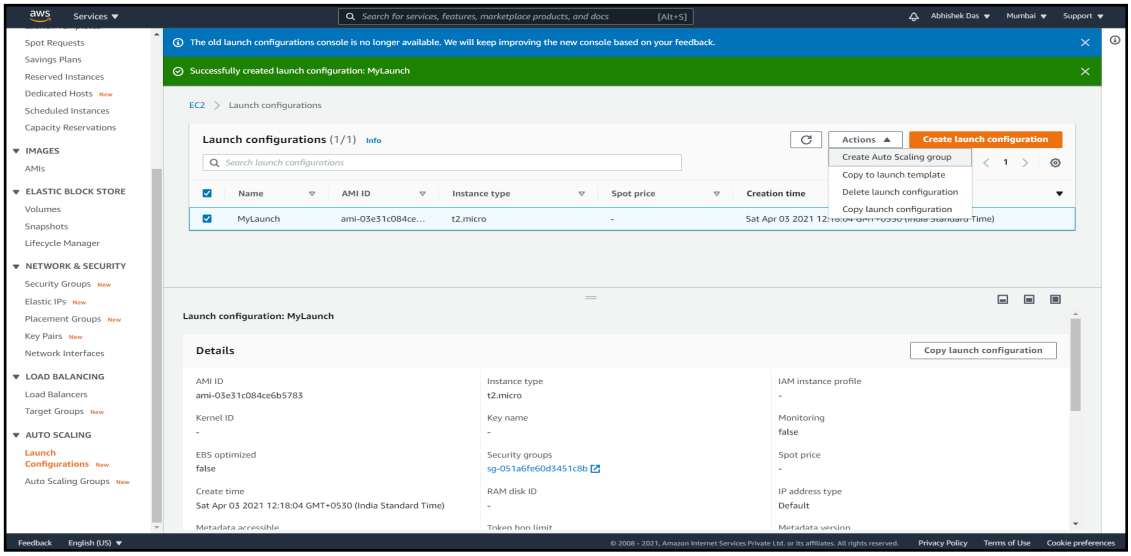
11. We can extend volumes (EBS).



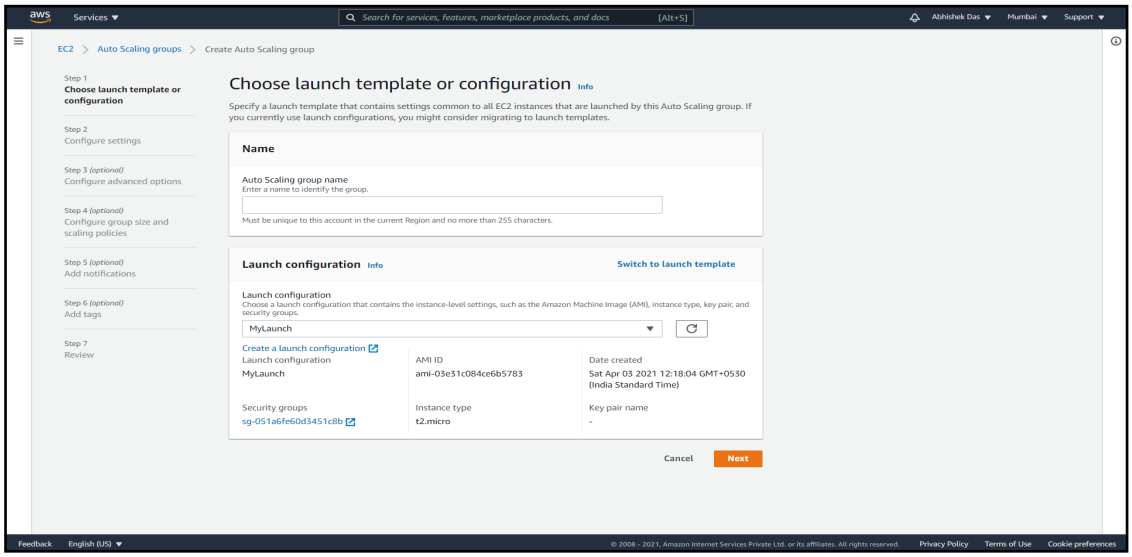
12. Now select Security Groups and click on Create Launch Configuration.



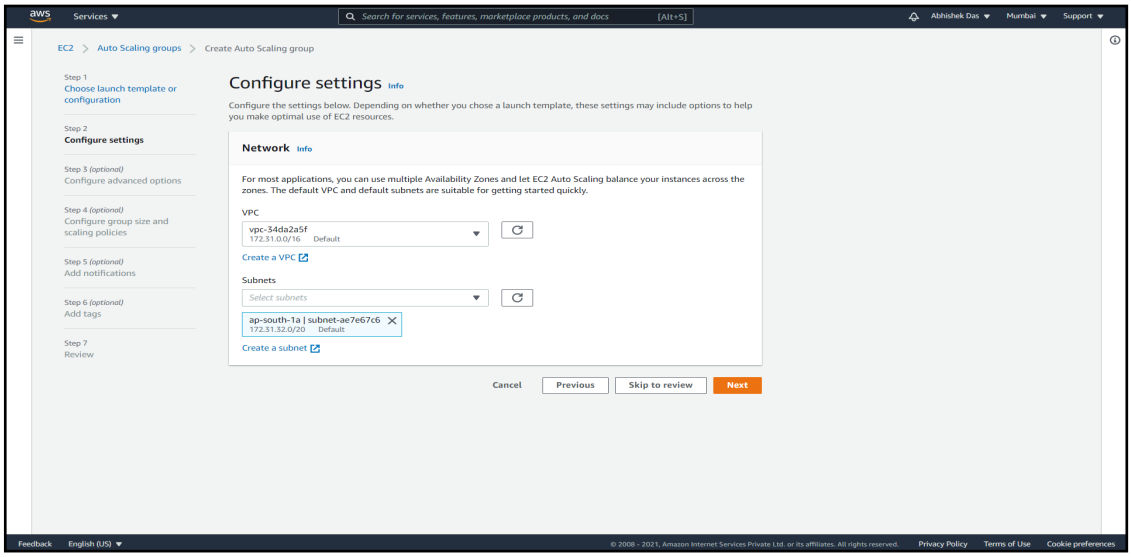
13. Then select that configuration and click on Action and select create auto scaling group.



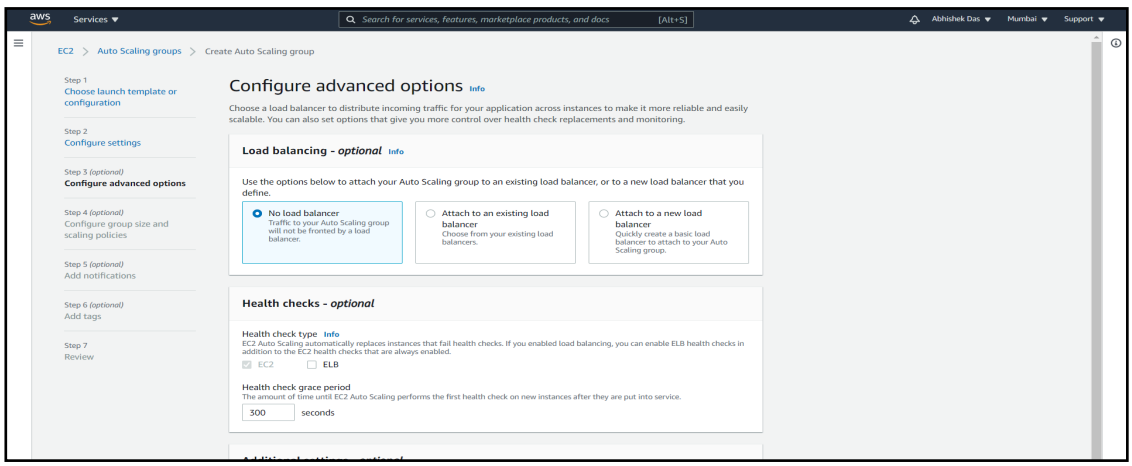
14. Provide Security group name and click next.



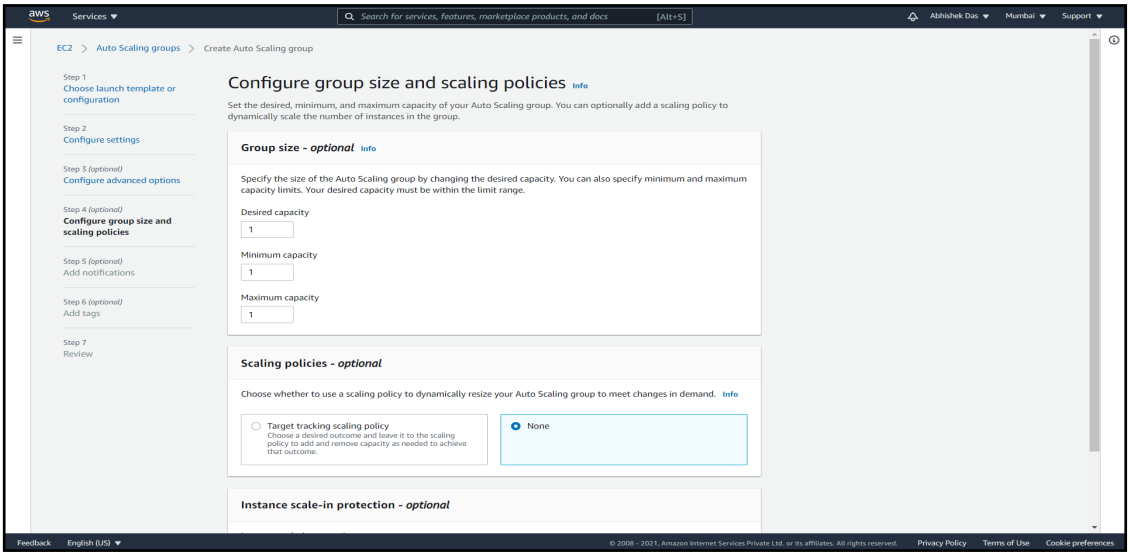
15. Select VPC and Subnet and click next.



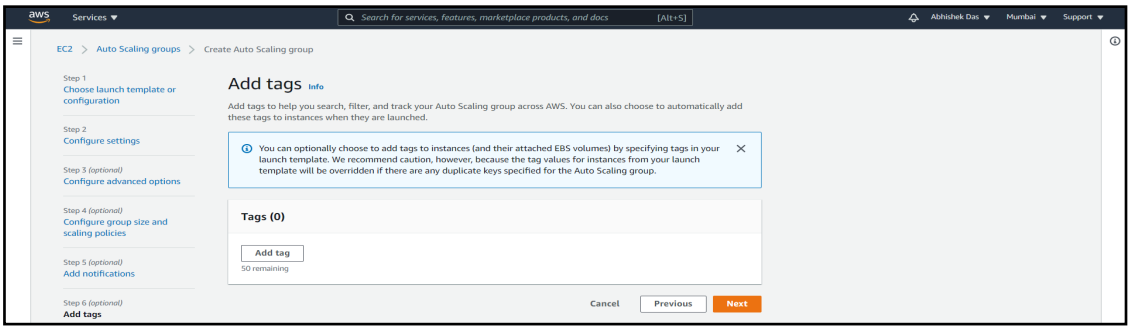
16. Then select Load Balancing and click next.



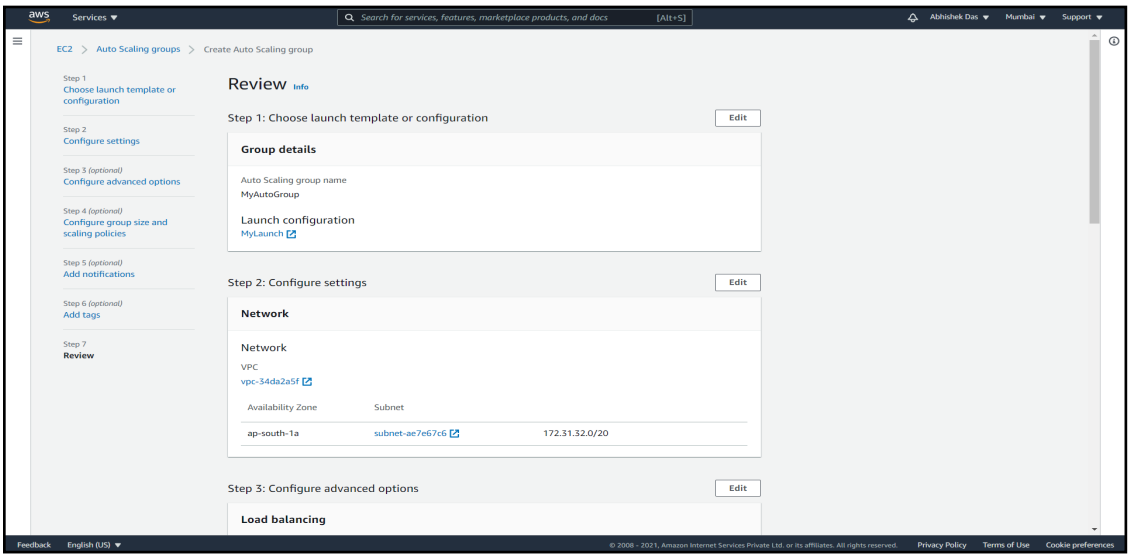
17. In configure group size and autoscaling policies set Maximum capacity as 2 and click next.



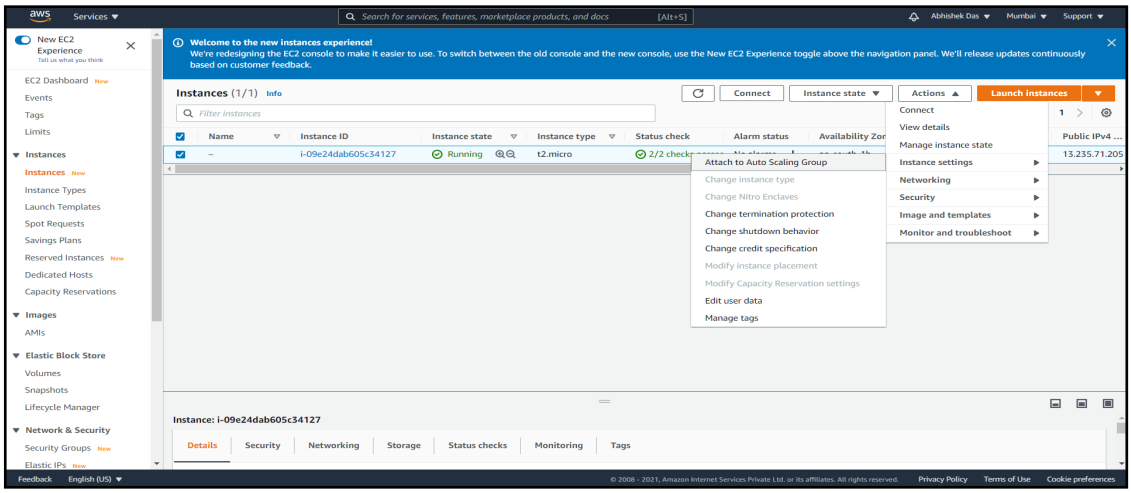
18. Now add tags and click next.



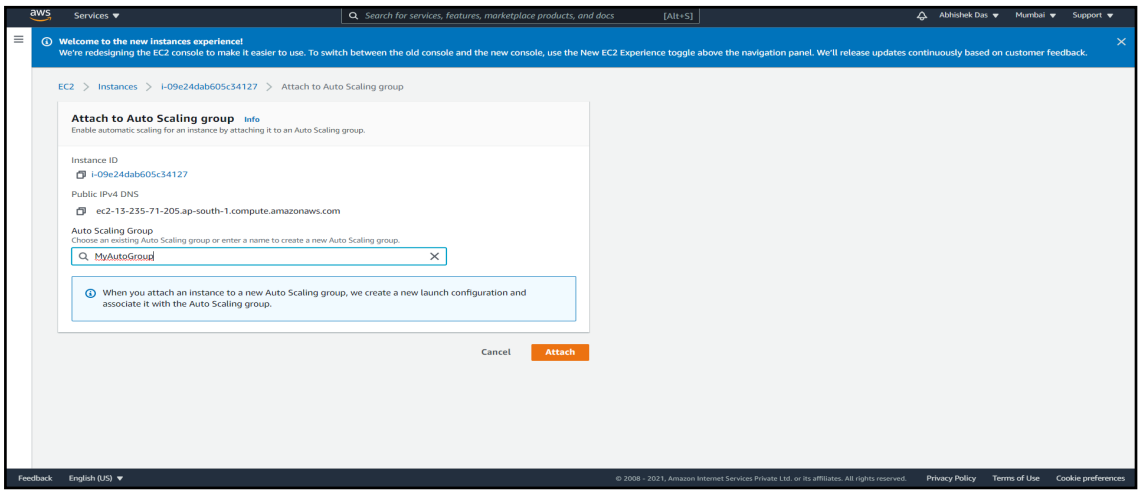
19. Review your settings and click on finish.

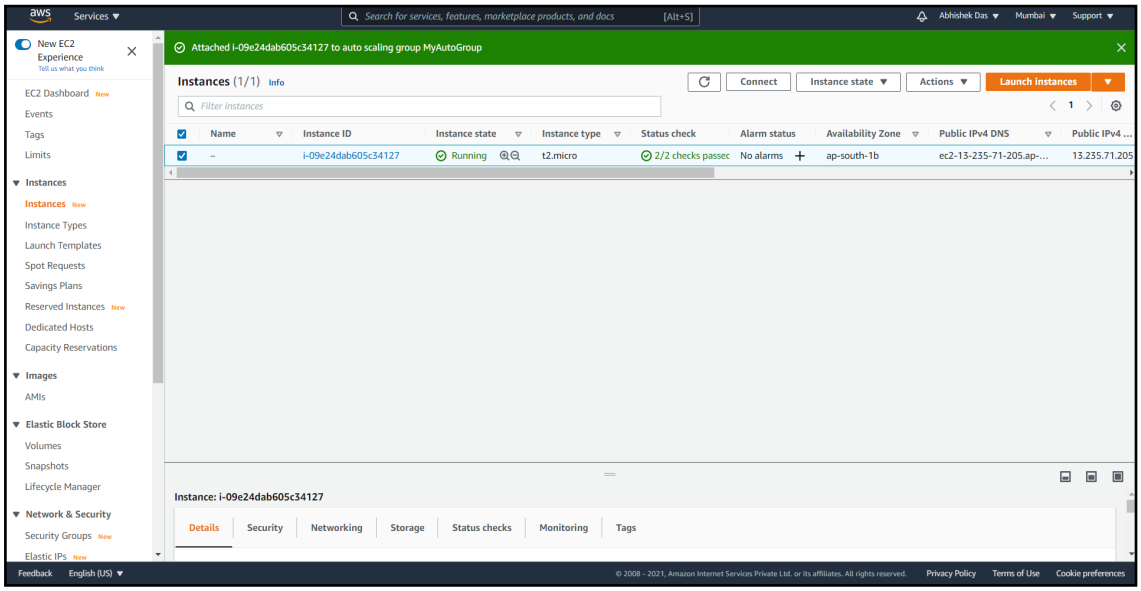


20. Then go to EC2 Dashboard and click on the instance and click on Action >> Instance Settings >> Attach auto scaling group.



21. Provide Security group name and click on Attach.



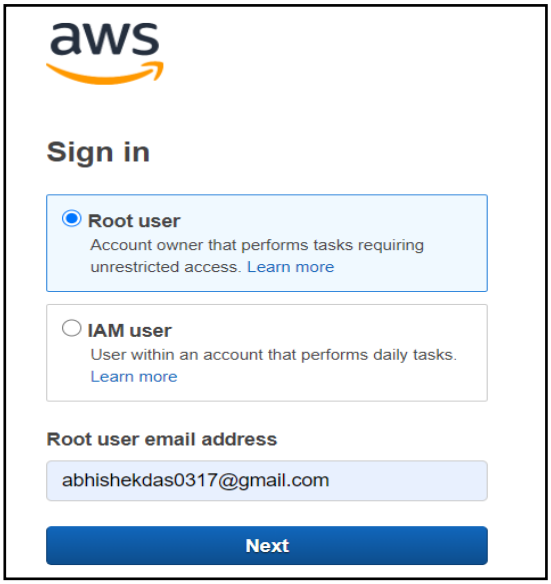


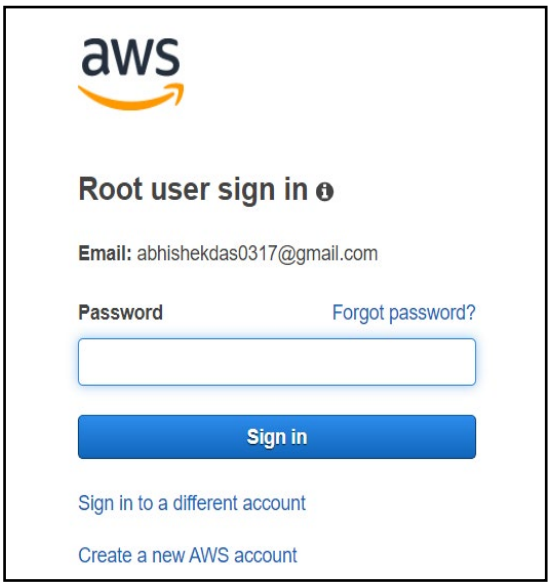
08: Cloud Watch

About Cloud Watch: Amazon CloudWatch is a monitoring and management service that provides data and actionable insights for AWS, hybrid, and on-premises applications and infrastructure resources. With CloudWatch, you can collect and access all your performance and operational data in form of logs and metrics from a single platform.

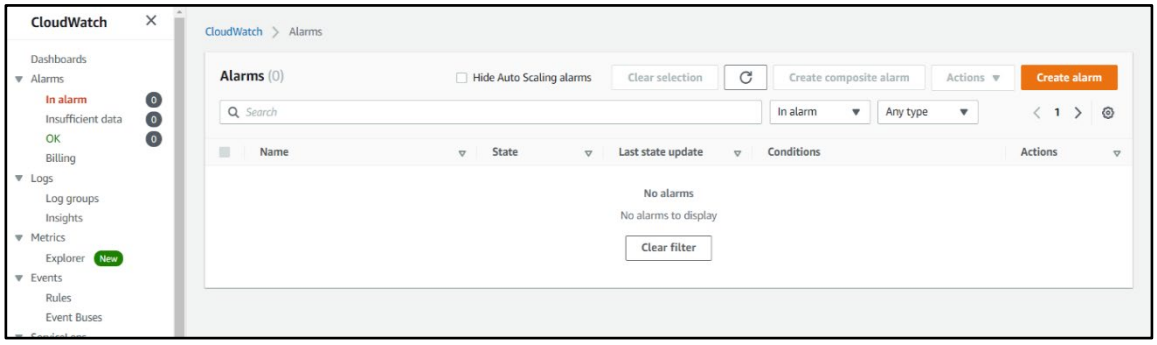
Process to Configure Cloud Watch:

1. Sign in to the AWS Management Console.

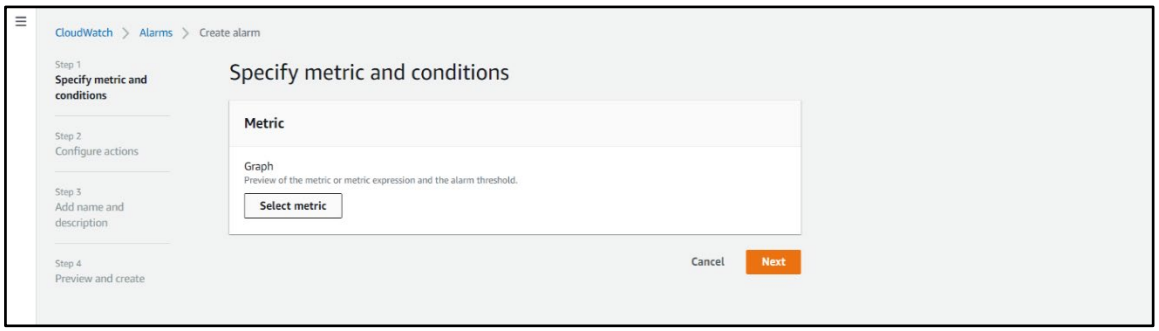




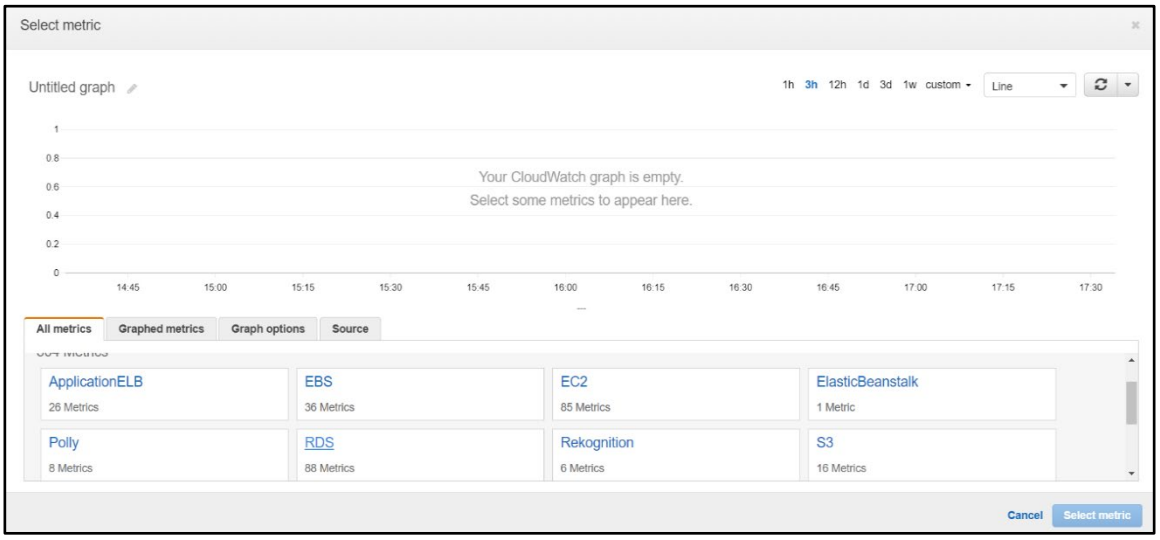
2. Click on CloudWatch from service and then click on “In alarm”.

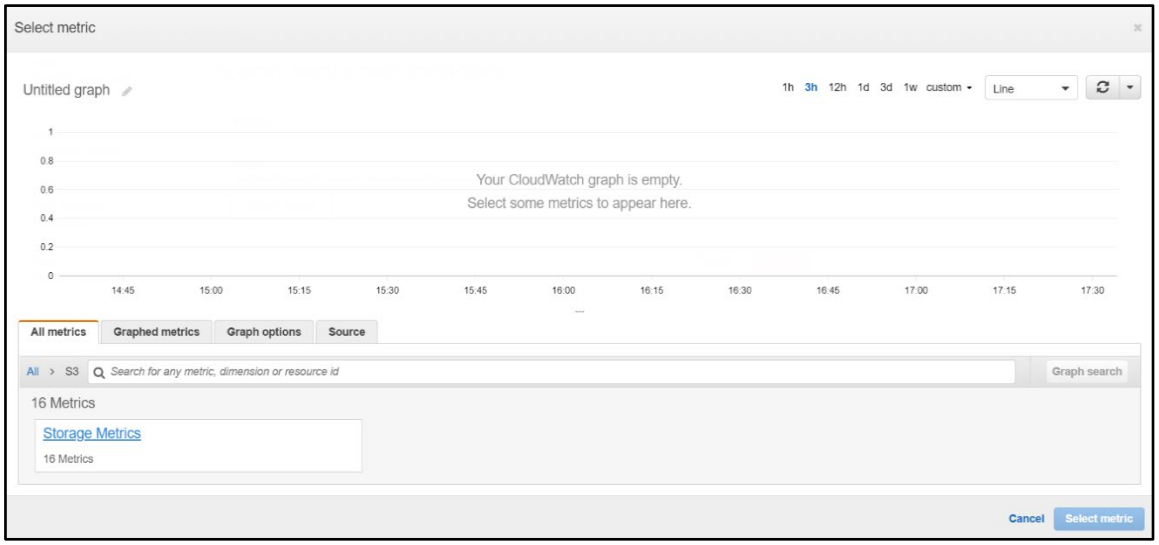


3. Now click on Create alarm and do configuration.

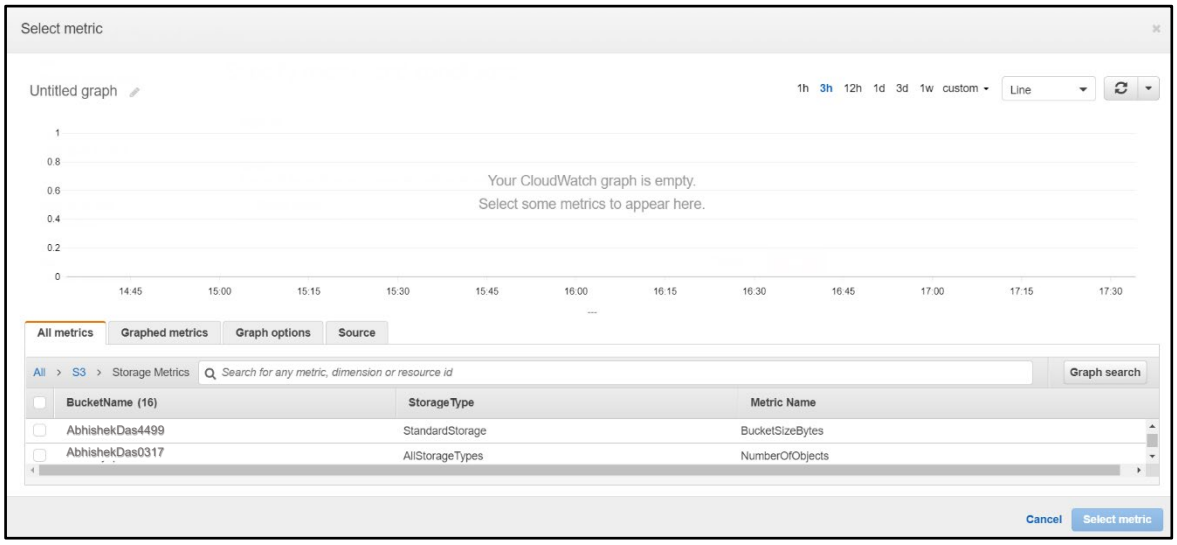


4. Then select matrix by setting for S3. So, select S3.

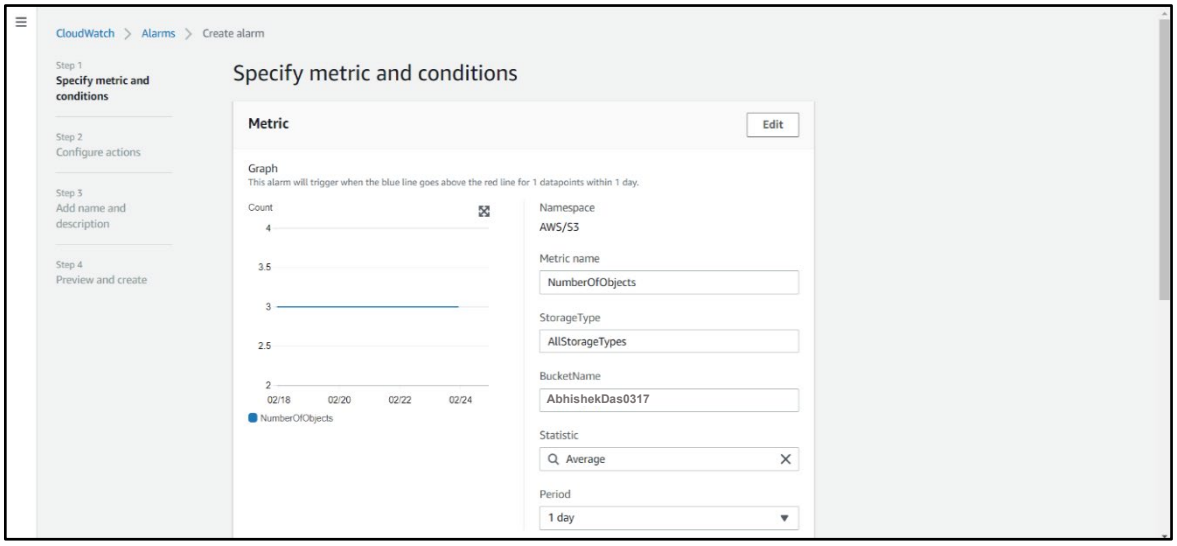


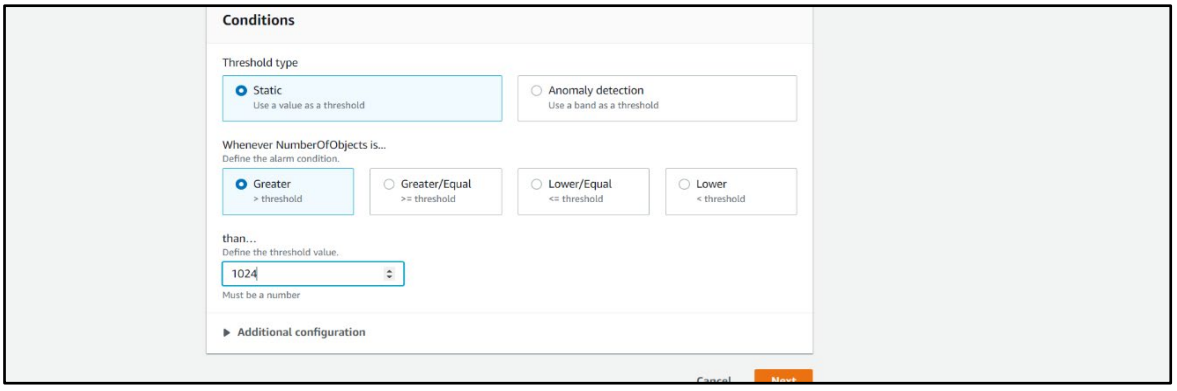


5. Now select storage matrix as well as bucket.

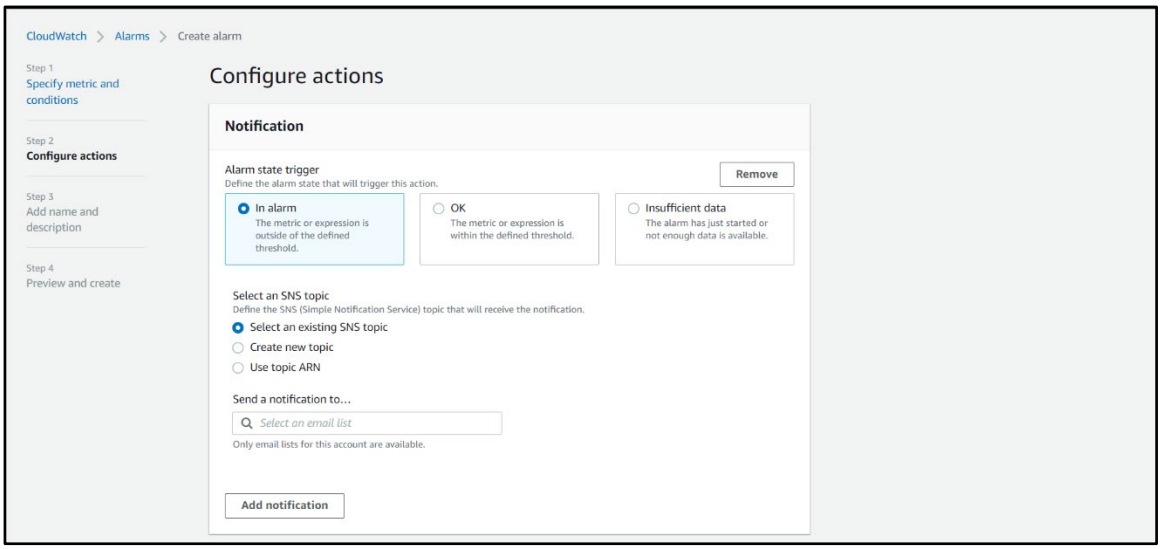


6. Then edit matrix condition and configure threshold type, alarm condition and threshold value.

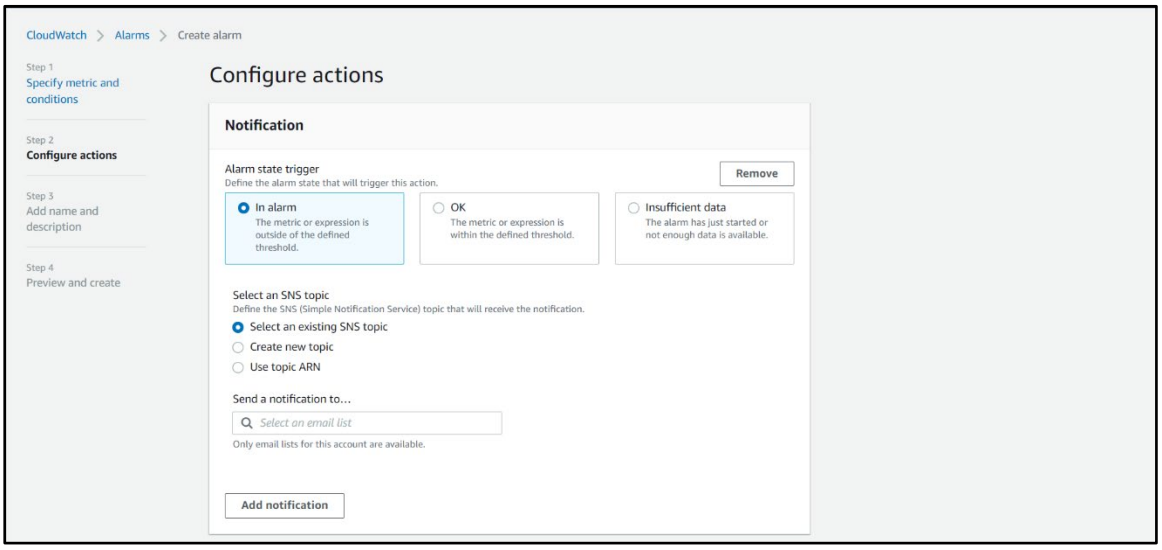




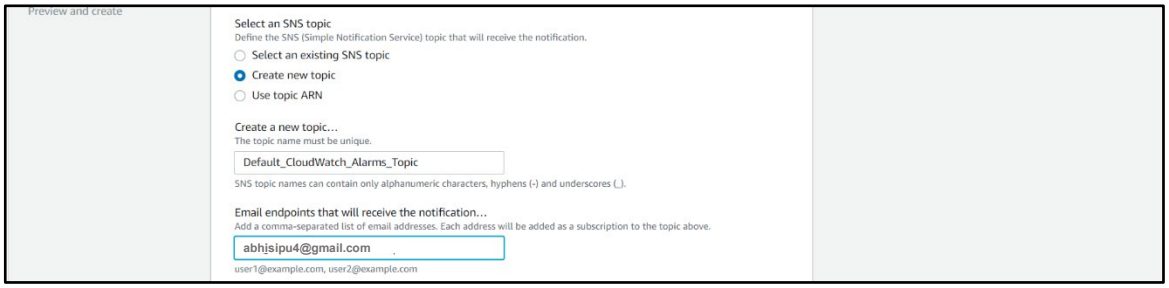
7. Click on next and select alarm trigger.

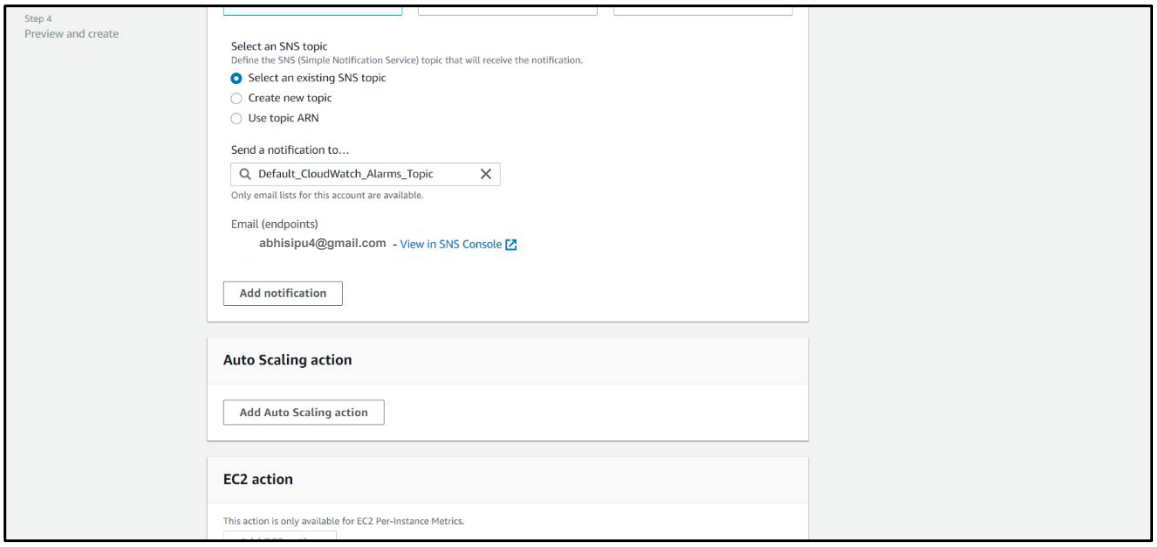


8. Create SNS for notification and write the topic name.

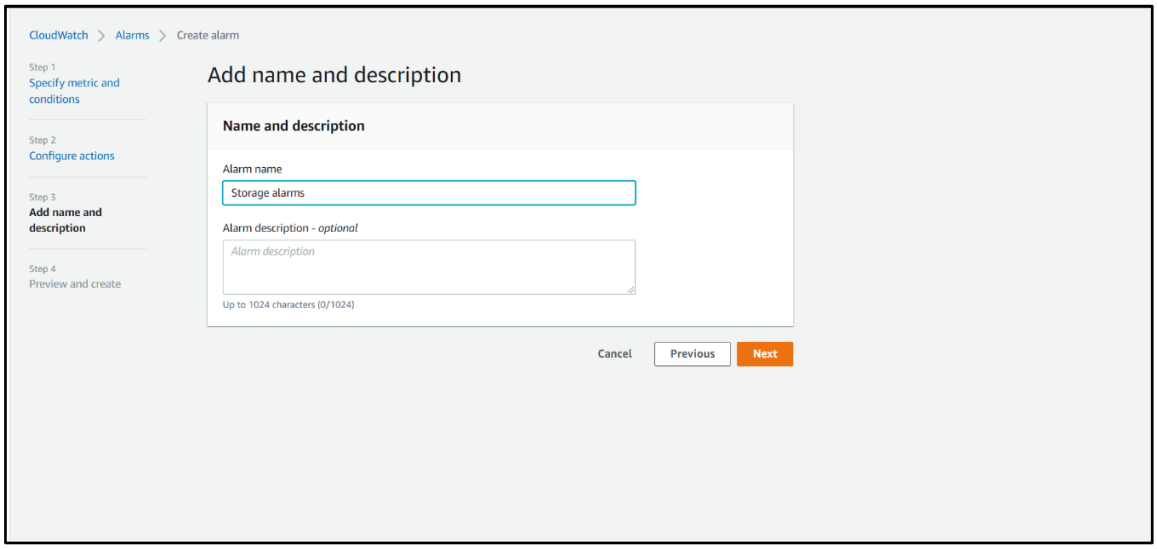


9. For email notification provide email id and then click on create topic.





10. Click on next and write alarm name.



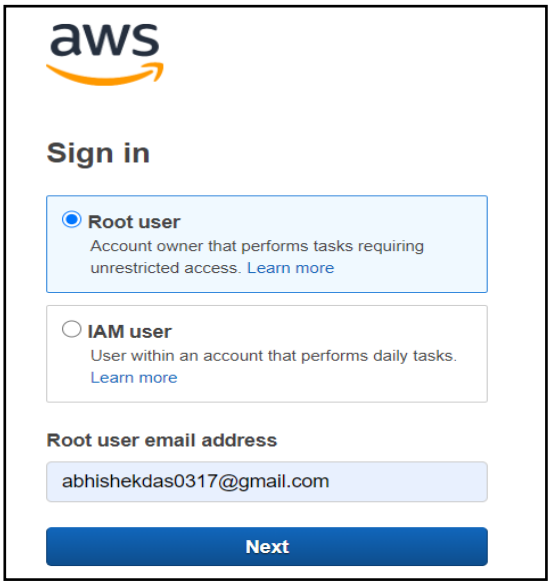
11. Again, click on next and create alarm.
12. Our alarm in successfully created for conformation we have to go to our email and conform its subscription.
13. Then CloudWatch created successfully.
14. In case your bucket size increase then threshold size will also change correspondingly and notify in your email.

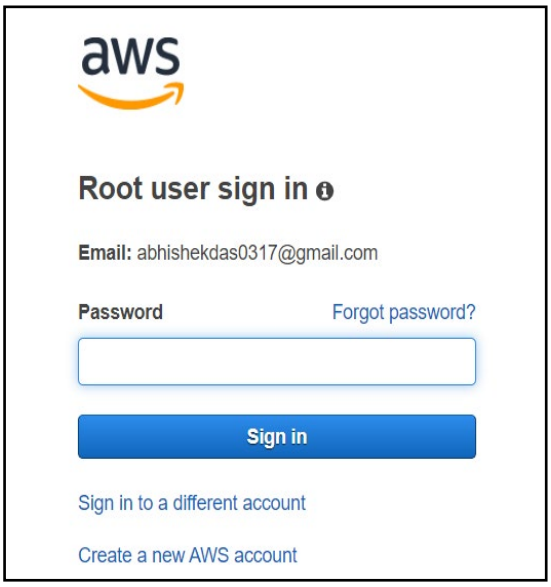
09: Amazon RDS

About Amazon RDS: Amazon Relational Database Service (Amazon RDS) makes it easy to set up, operate, and scale a relational database in the cloud. It provides cost-efficient and resizable capacity while automating time-consuming administration tasks such as hardware provisioning, database setup, patching and backups.

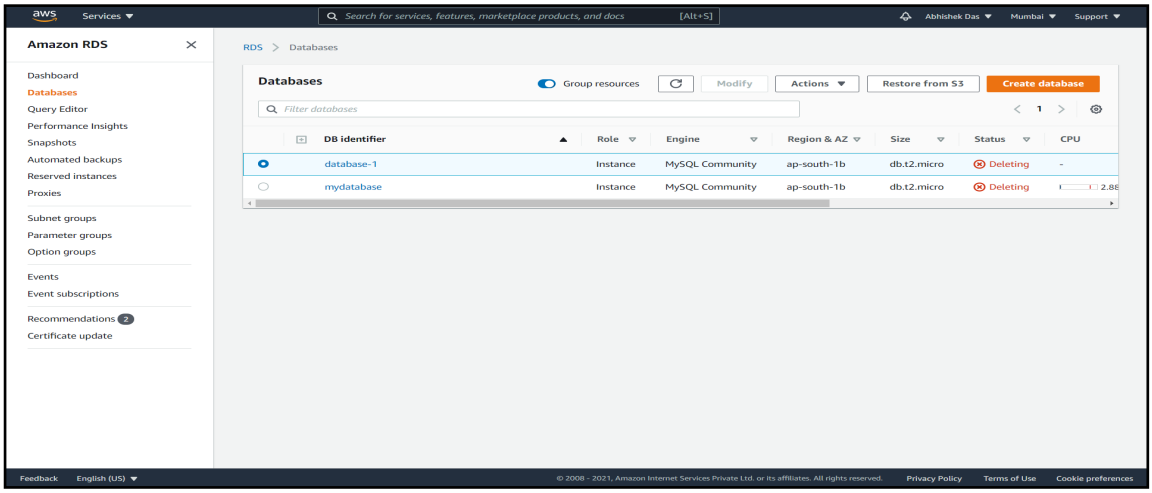
Process to Configure Amazon RDS:

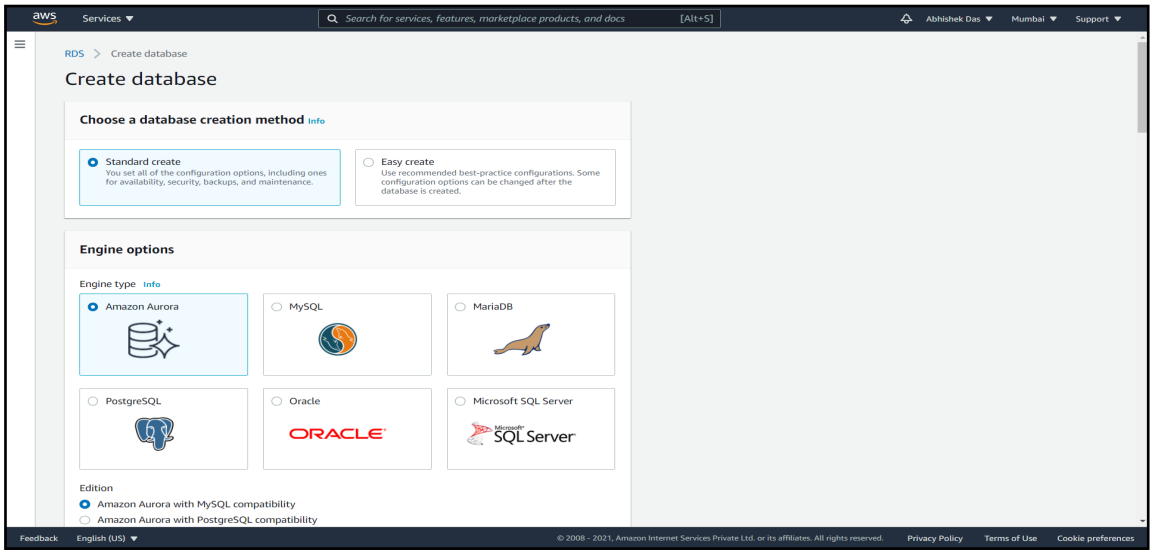
1. Sign in to the AWS Management Console.



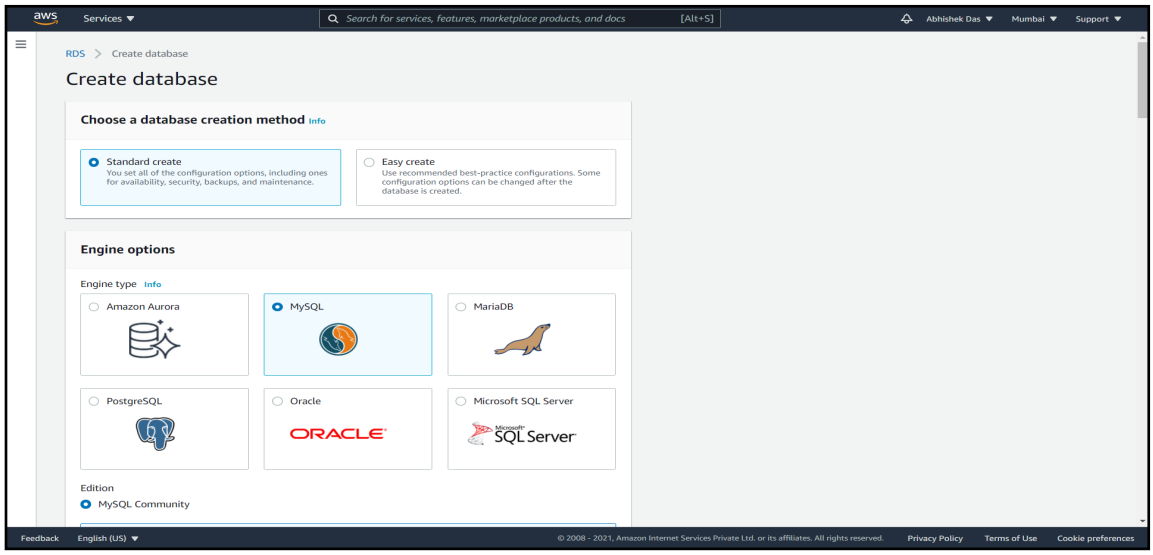


2. Open RDS from services and click on create Database.

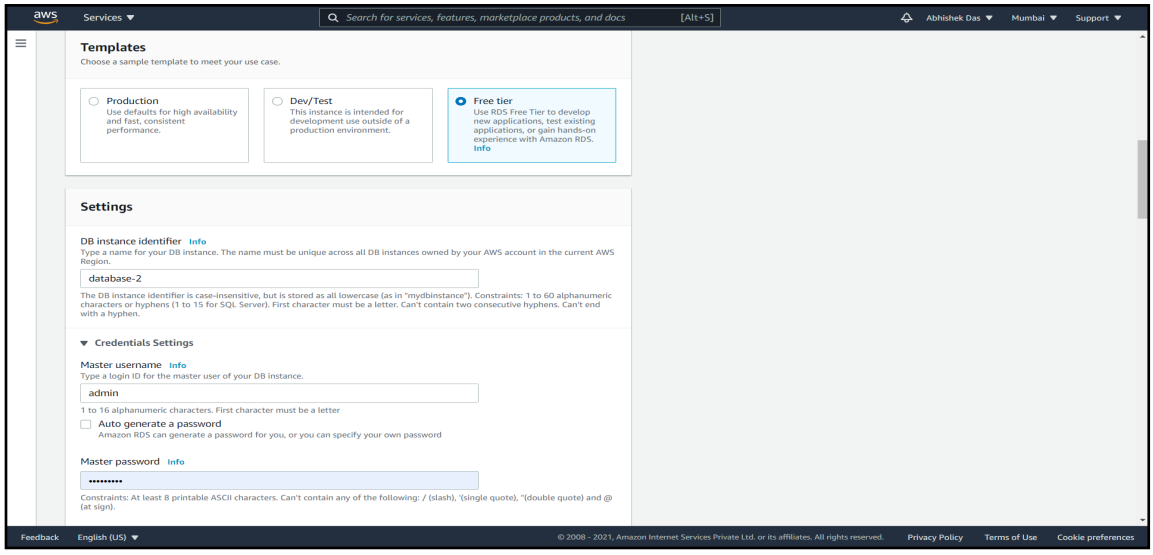




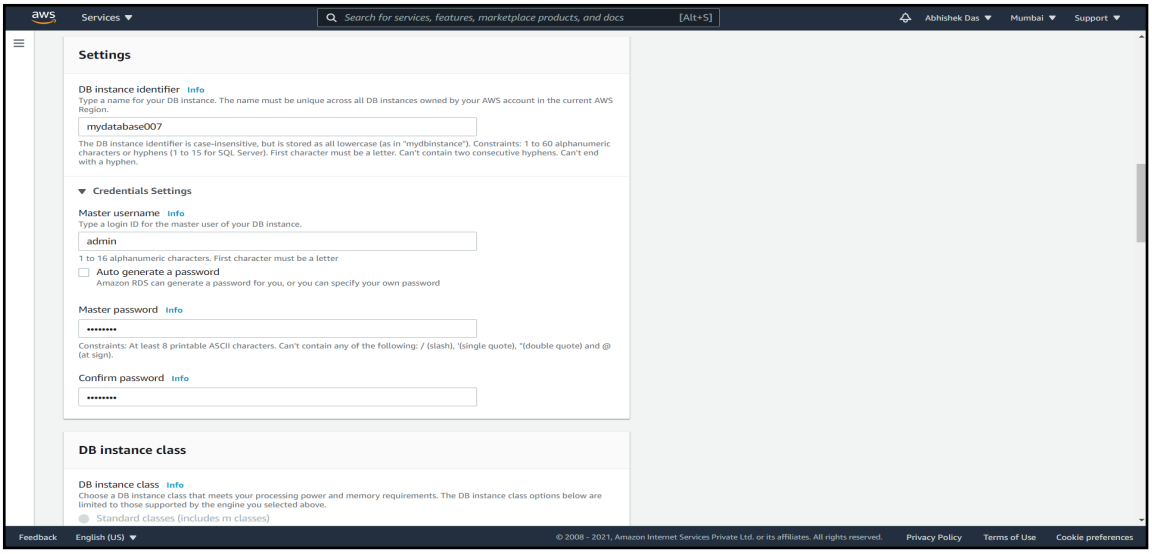
3. Then select MySQL database and select its version.



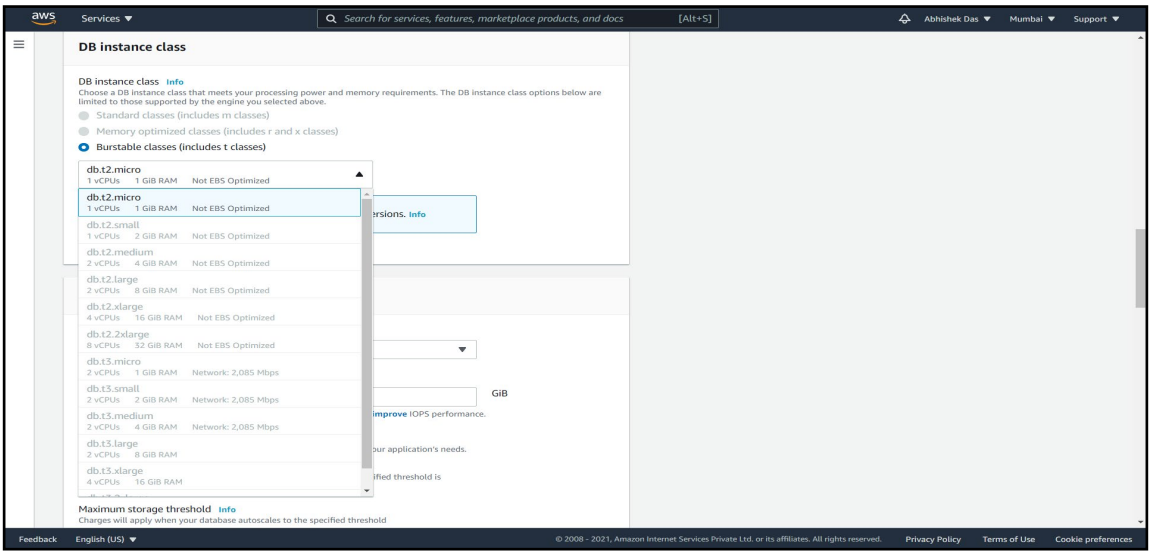
4. Now select Free Tier Template.

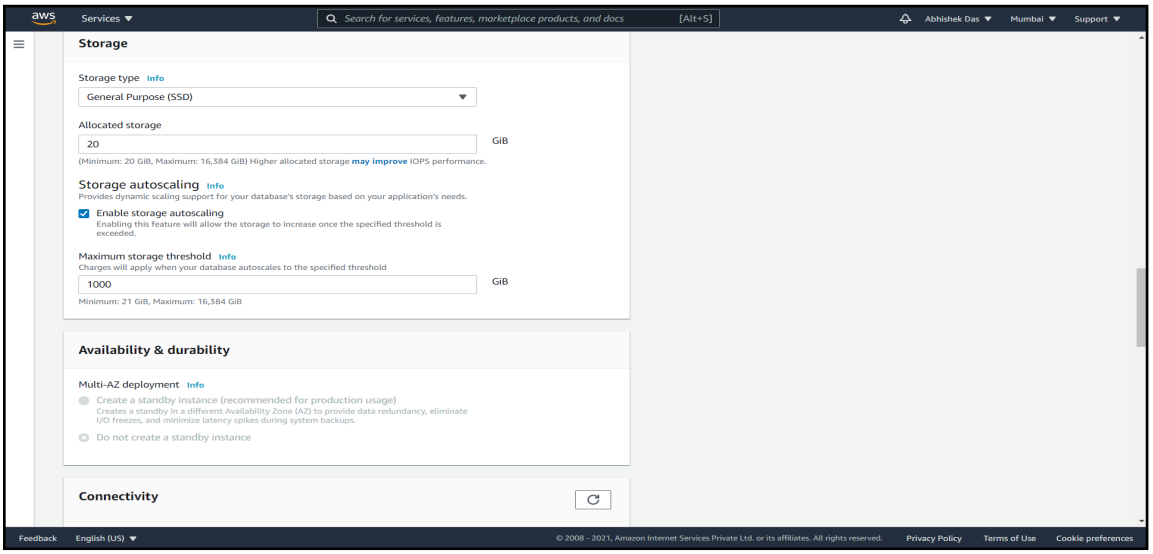


5. And in settings provide its name, master username, password.

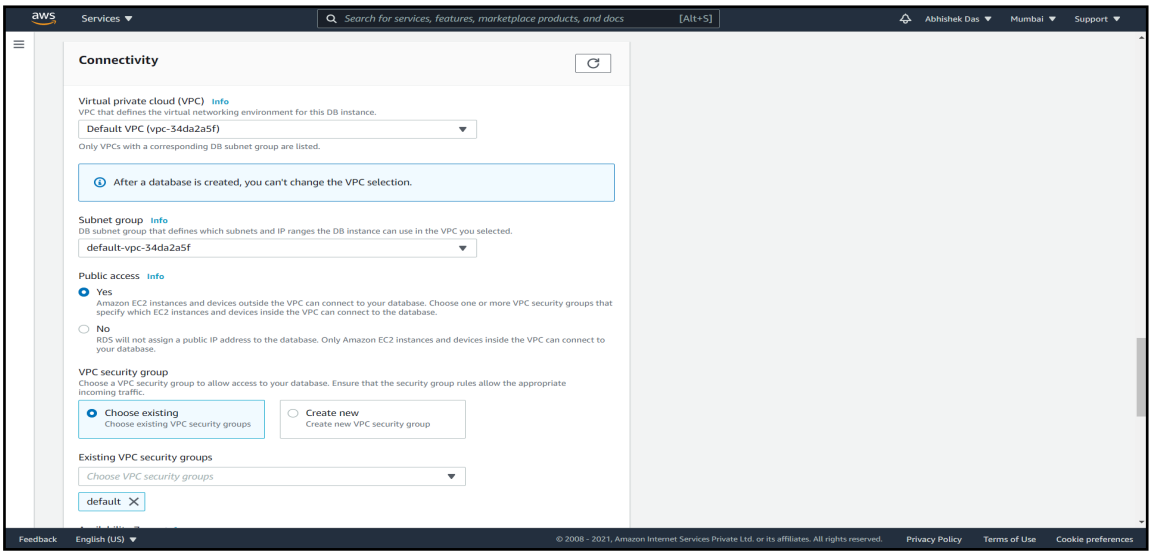


6. Select instance type and Storage.

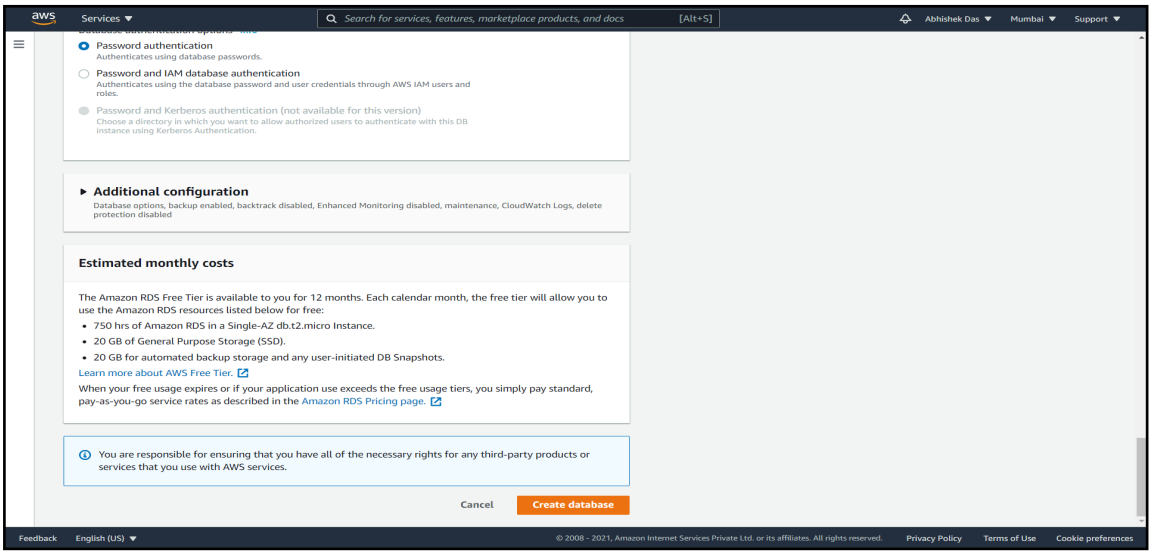


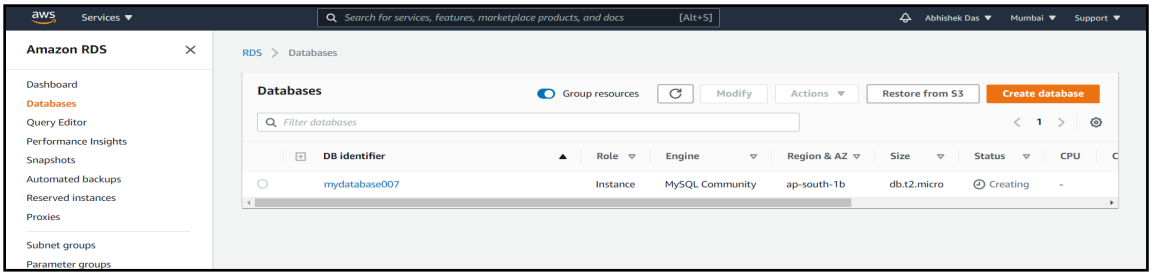


7. In Connectivity, allow public access and also choose subnet group and VPC security group.

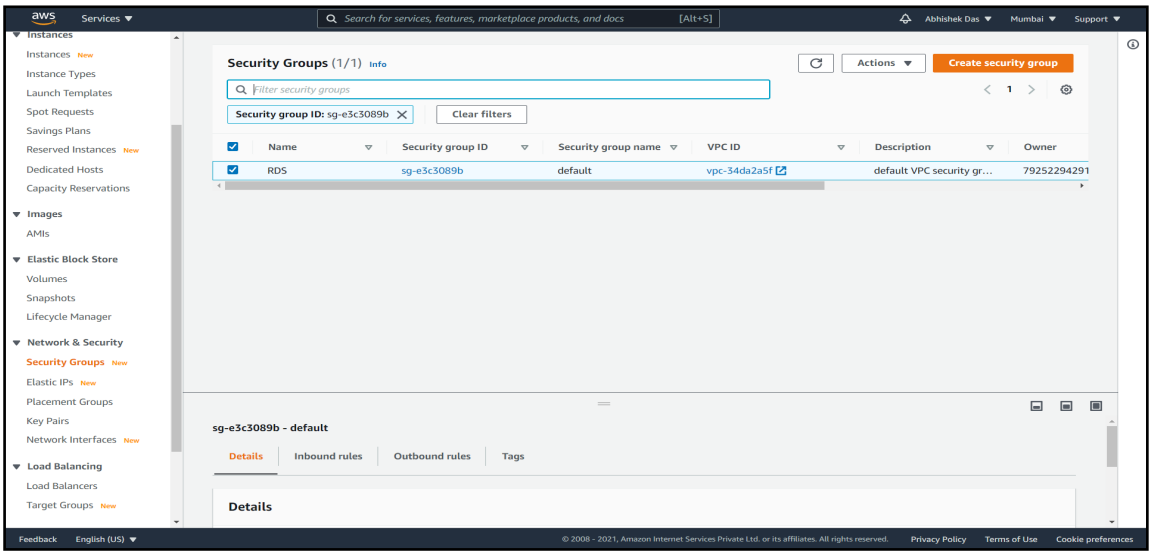


8. After complete review, click on Create database.

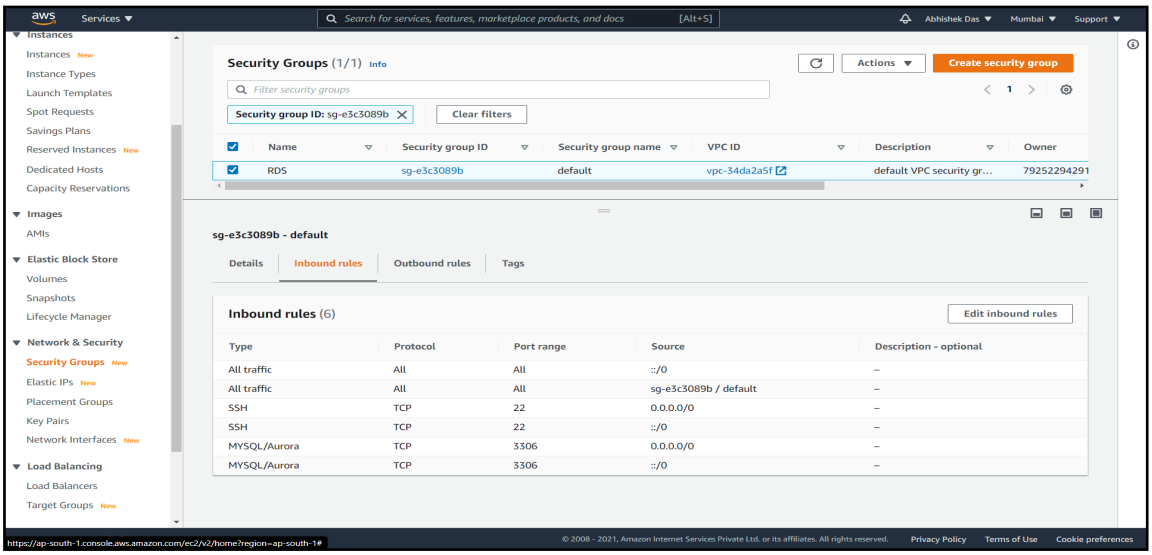




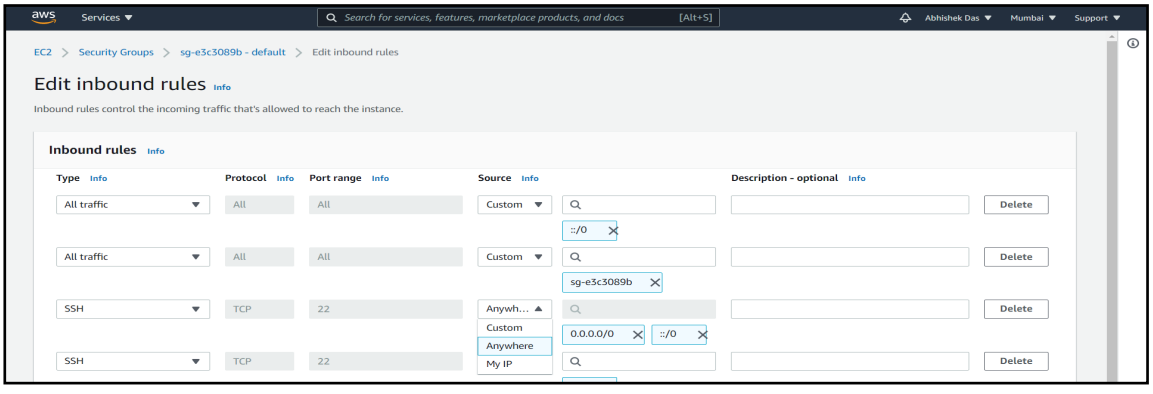
9. Then go to EC2 and click on security group.



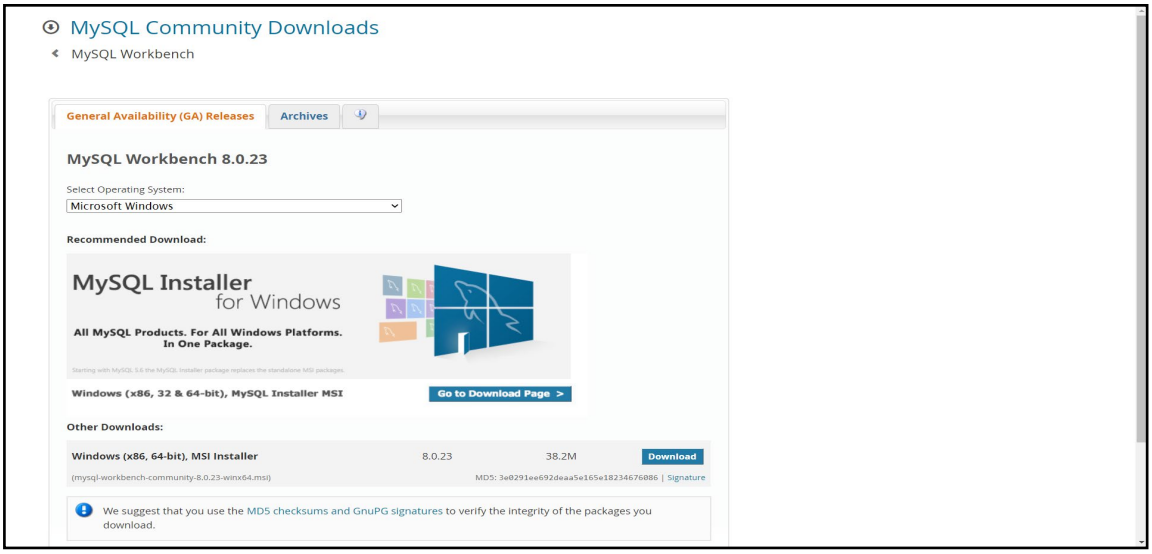
10. Now select Inbound rules and click on Edit Inbound rules.



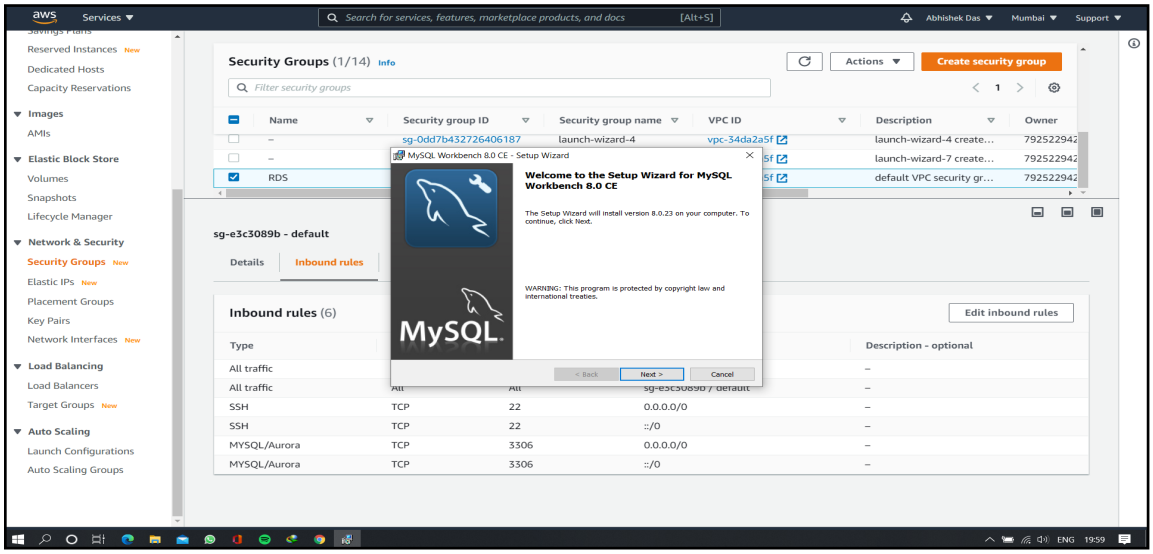
11. Add SSH and edit source to Anywhere.

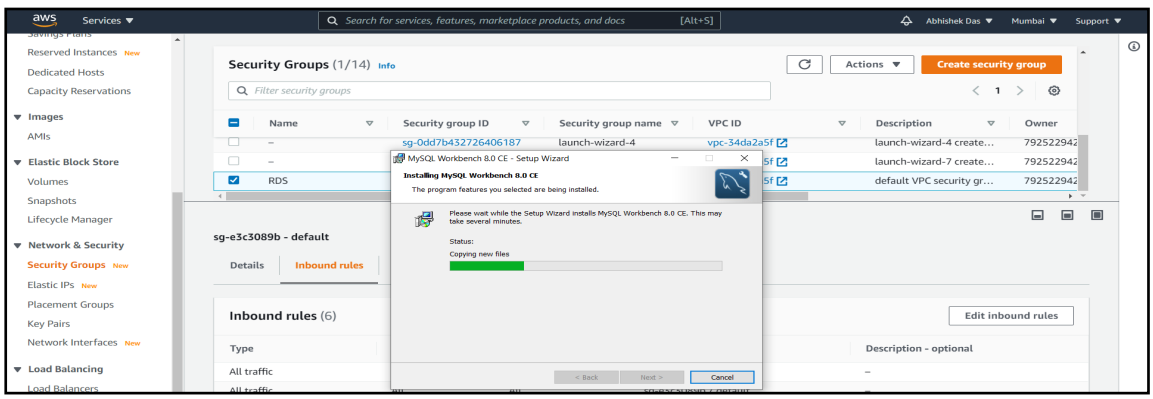


12. Now browse this site https://dev.mysql.com/downloads/workbench/ “and download MySQL installer.

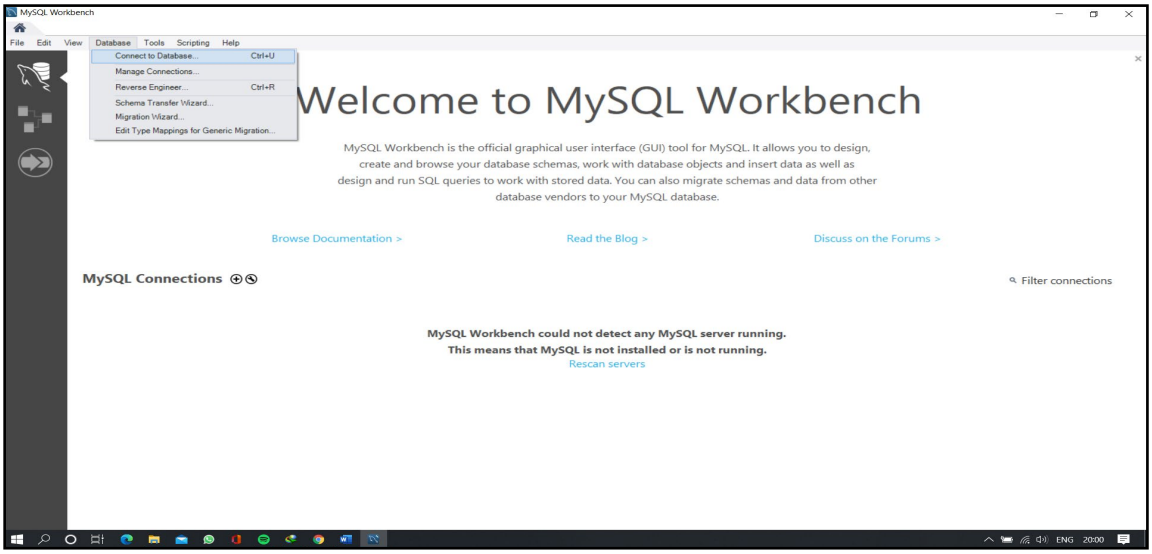


13. Then install MySQL and launch it.

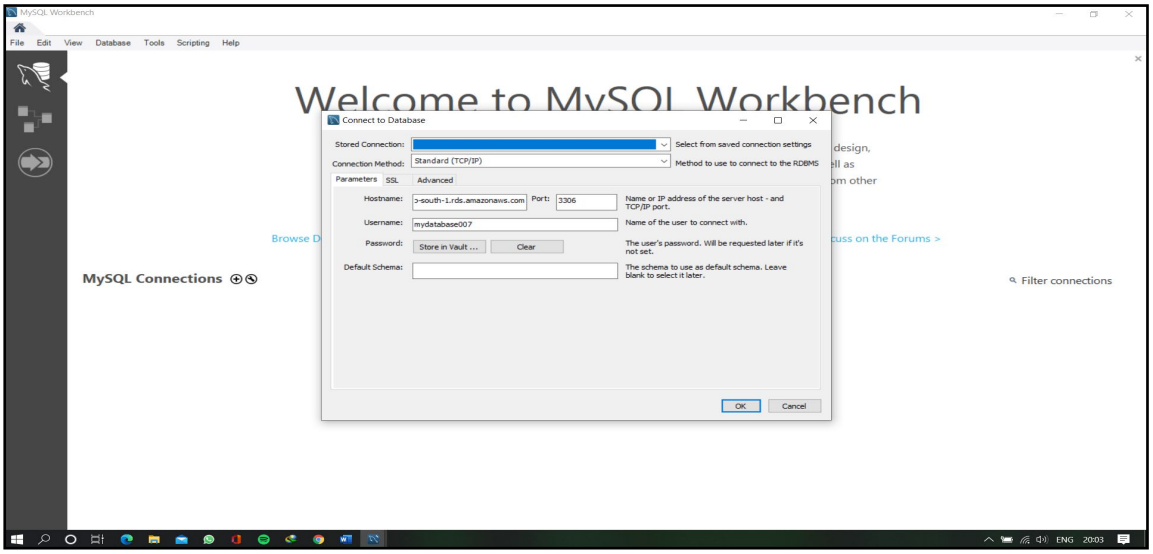




14. Then click on database >> connect database.

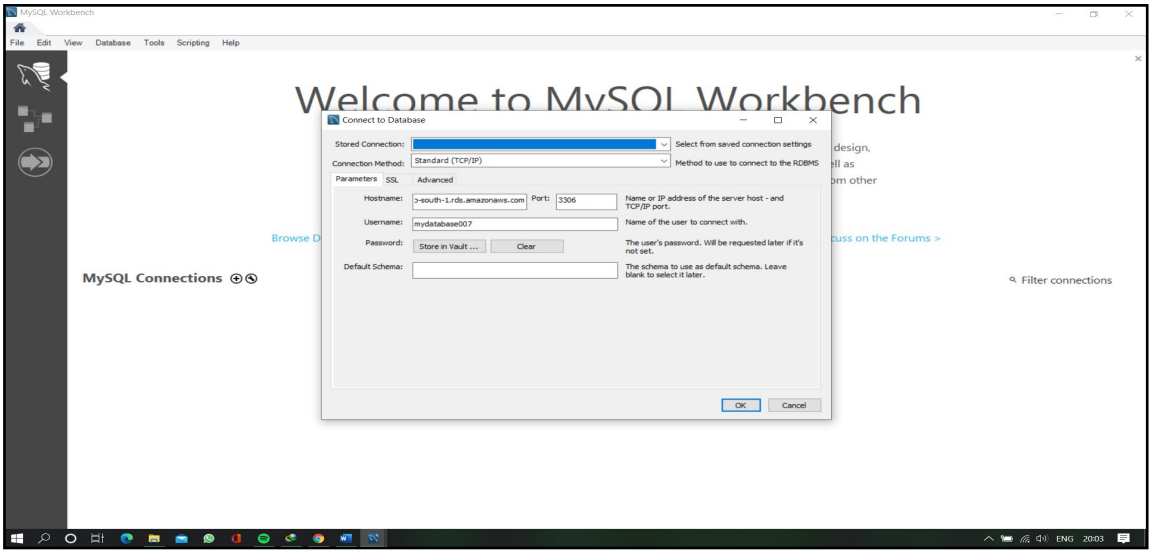


15. Now enter end point and password.



16. Then click on connect.

17. After successful connection we can create database.



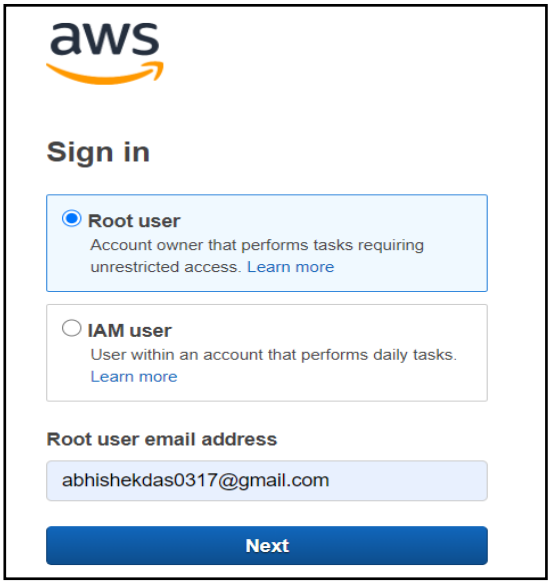
10: AWS CLI

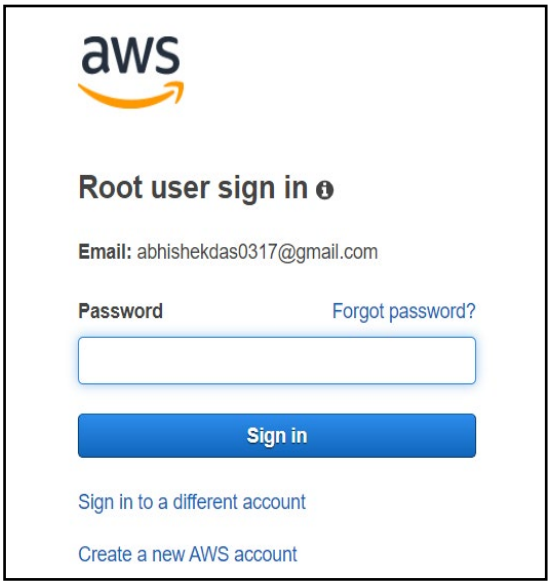
About AWS CLI (Command Line Interface):

AWS Command Line Interface (CLI) is a unified tool to manage your AWS services. With just one tool to download and configure, you can control multiple AWS services from the command line and automate them through scripts.

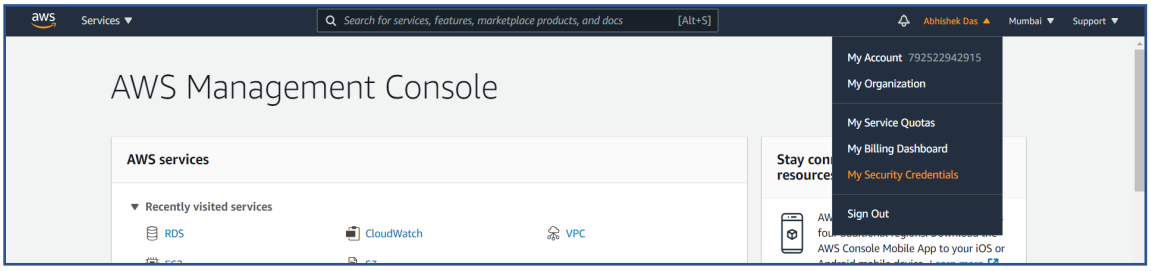
Process to Configure Amazon CLI:

1. Sign in to the AWS Management Console.

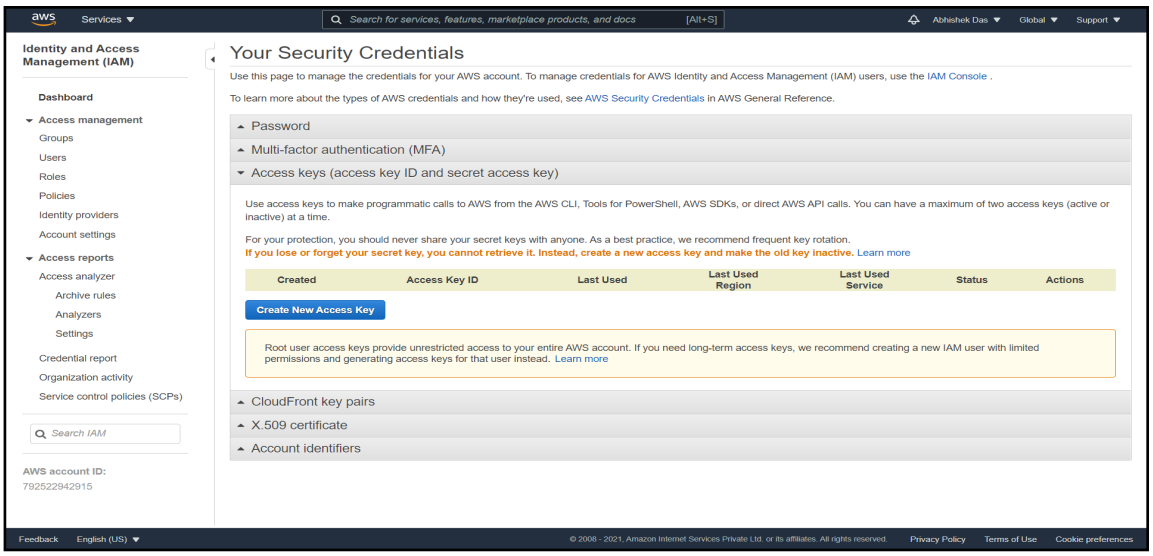




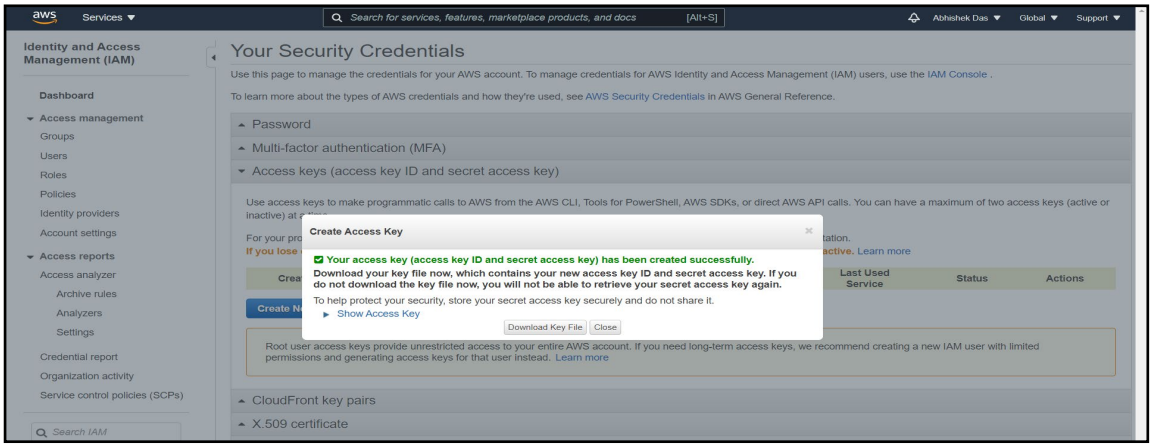
2. In Dashboard, go to My Security Credential.

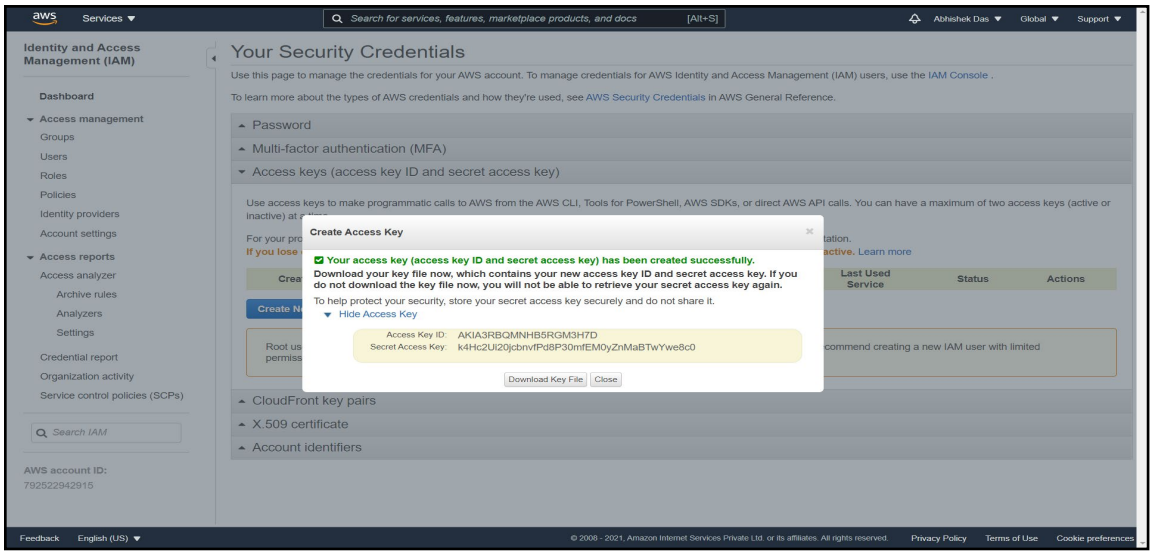


3. Then click on Access Key and Create New Access Key.

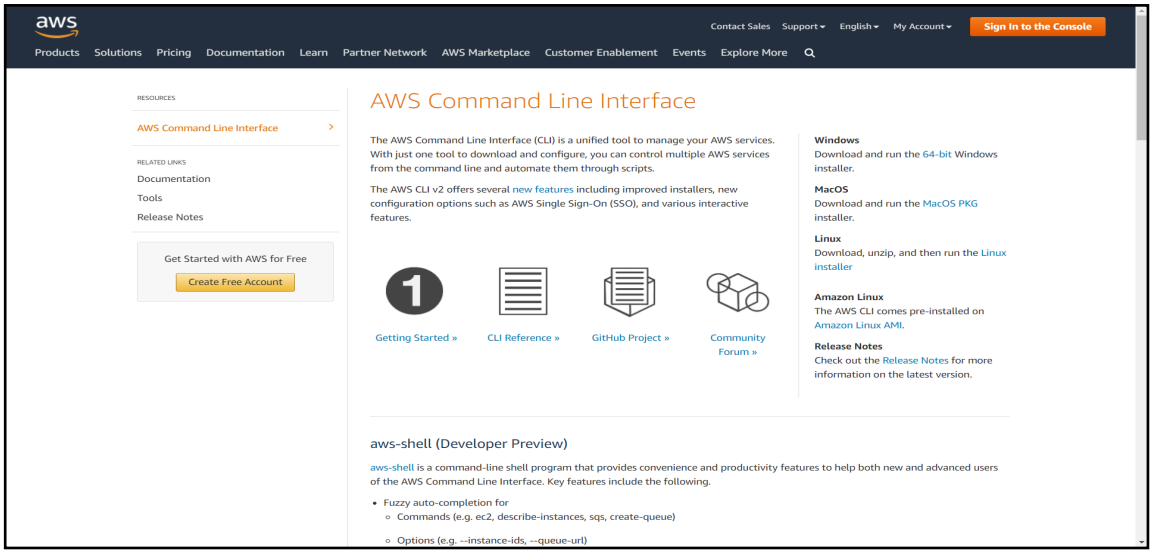


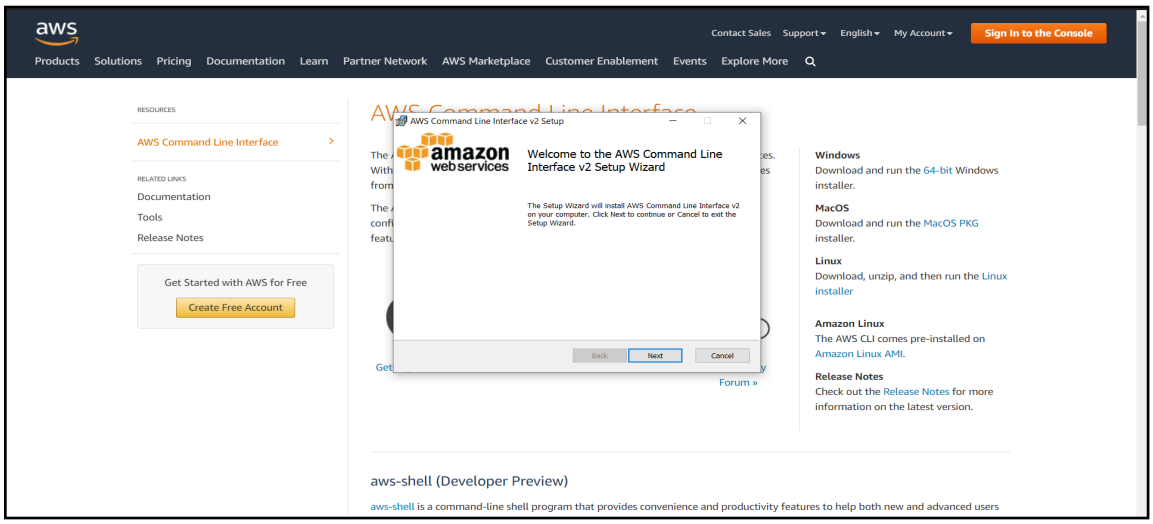
4. Now click Show Access Key, then it will show Access key ID as well as Secret Access Key.



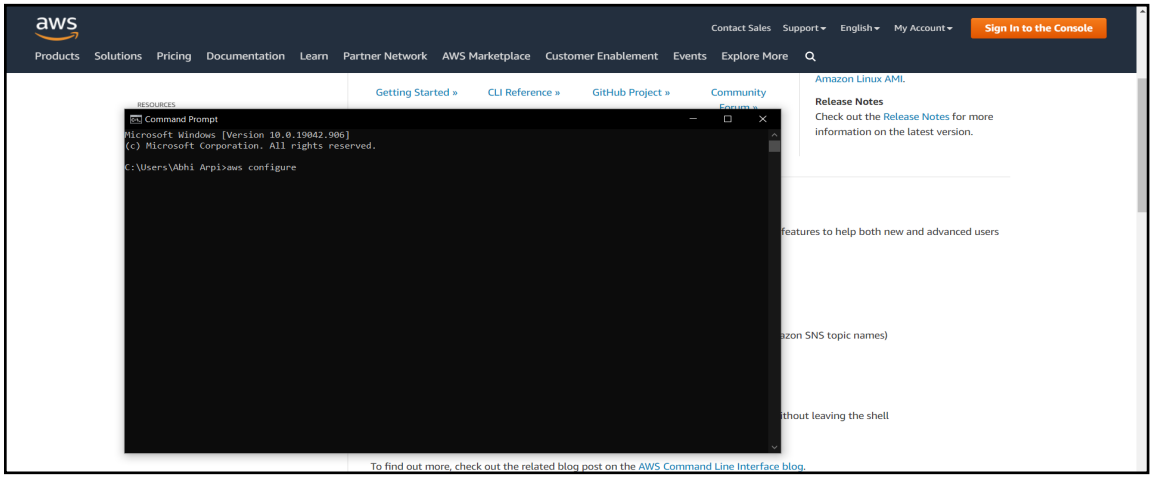


5. Now search for Aws Command Line Interface, Download and install it.

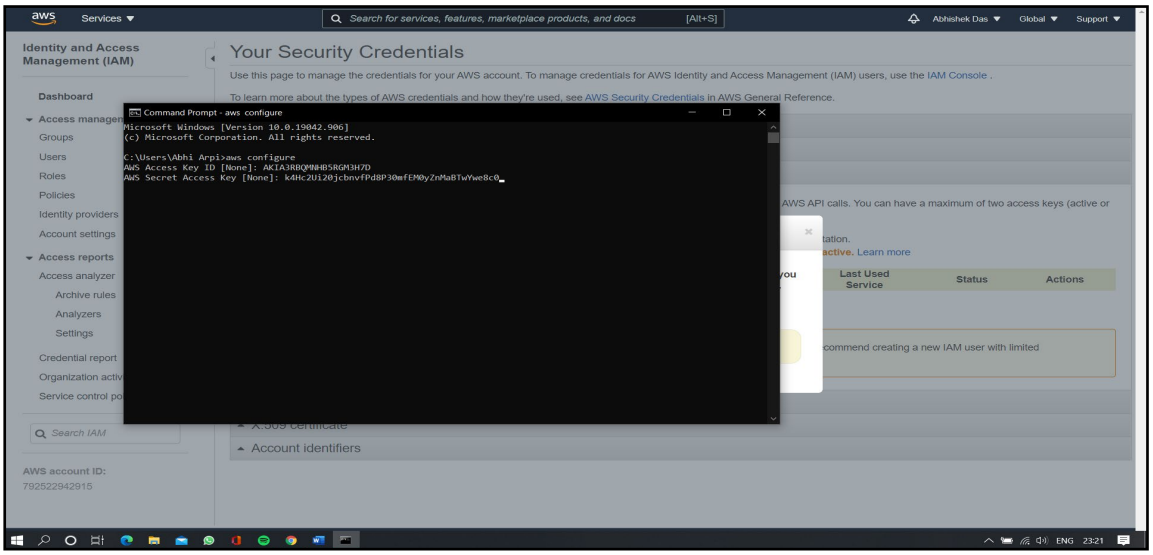




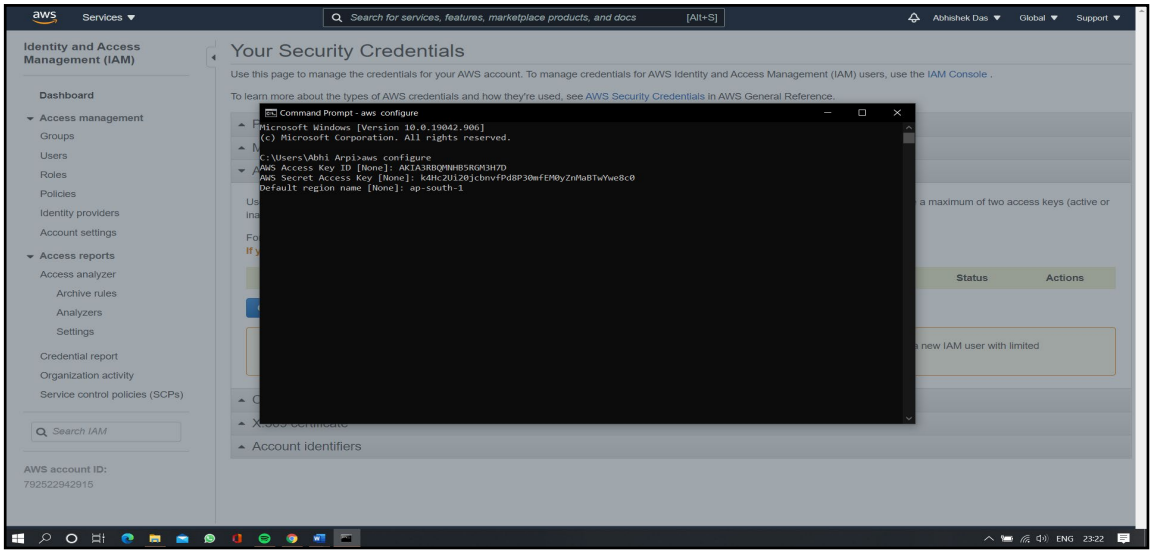
6. Then Open Command Line and type “aws configuration”.

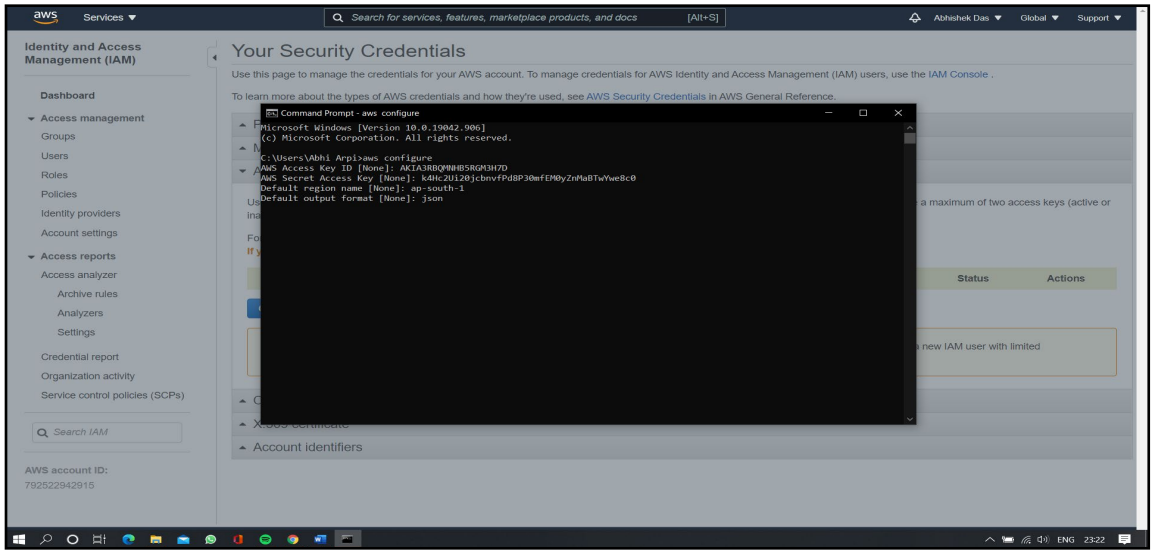


7. Then Provide Access key ID and Secret Access key.

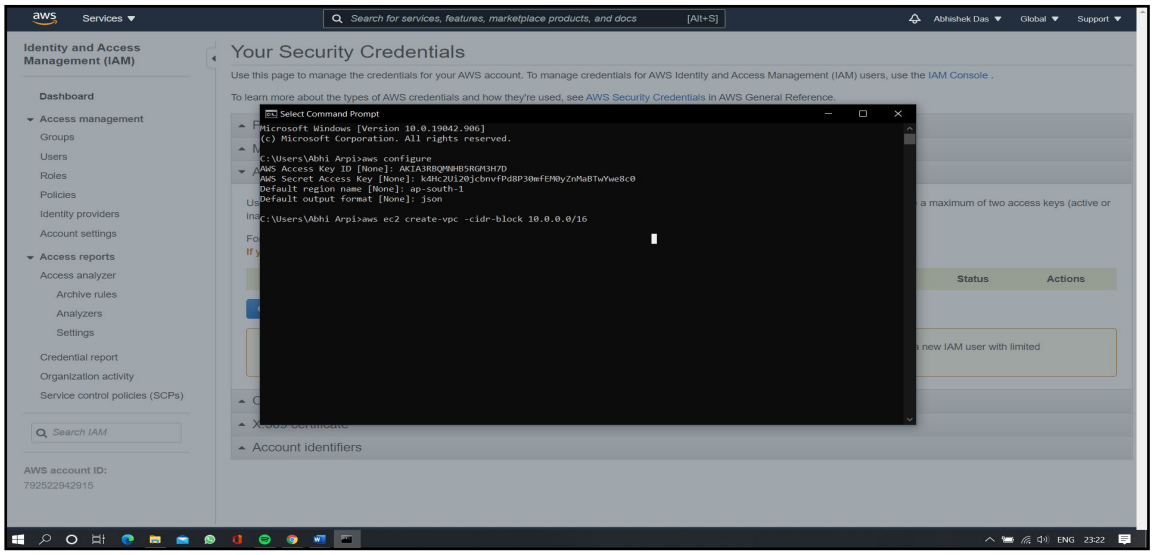


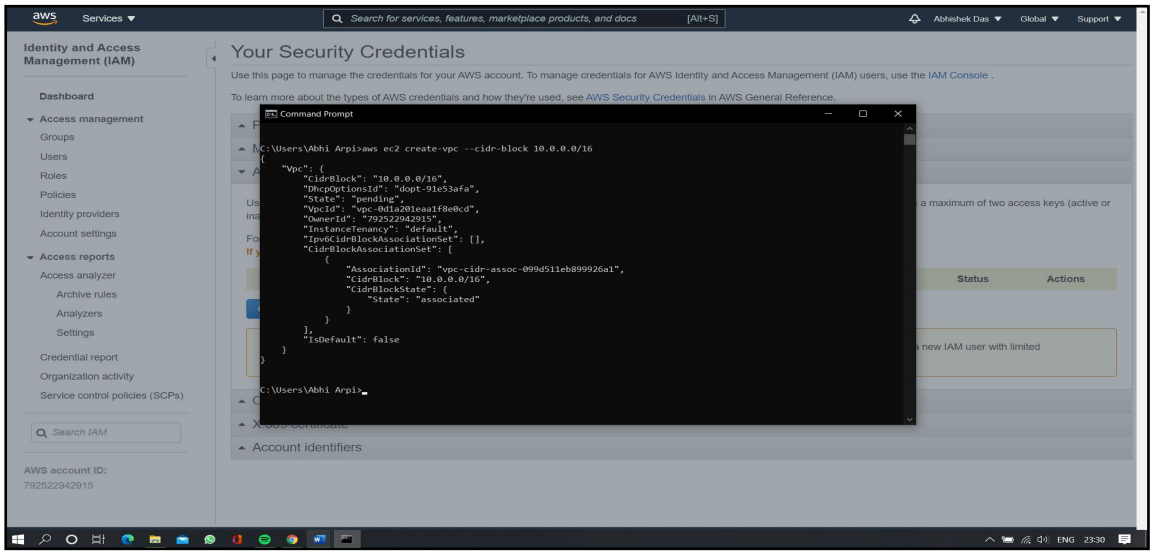
8. Provide Region Name and output format.





9. Then type “aws ec2 create-vpc –cidr-block 10.0.0.0/16”.





10. Successfully your VPC has been created through command line.