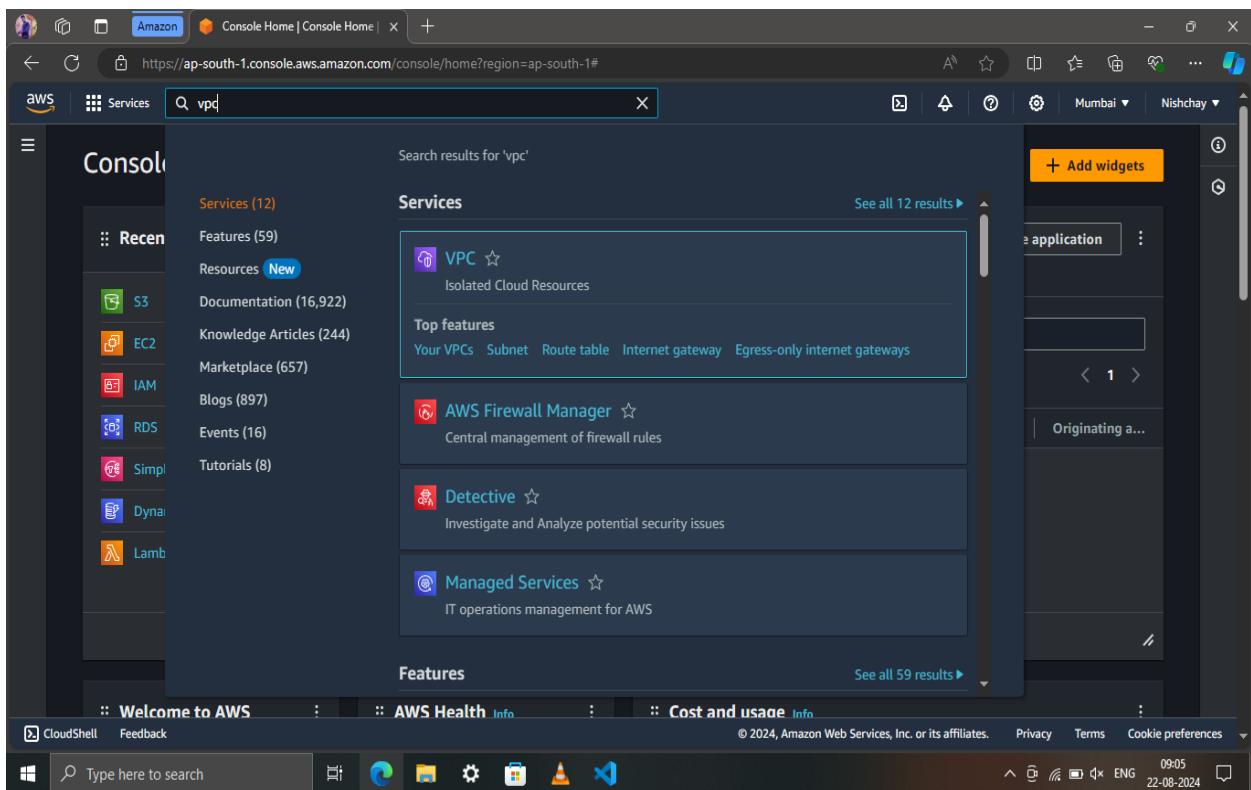
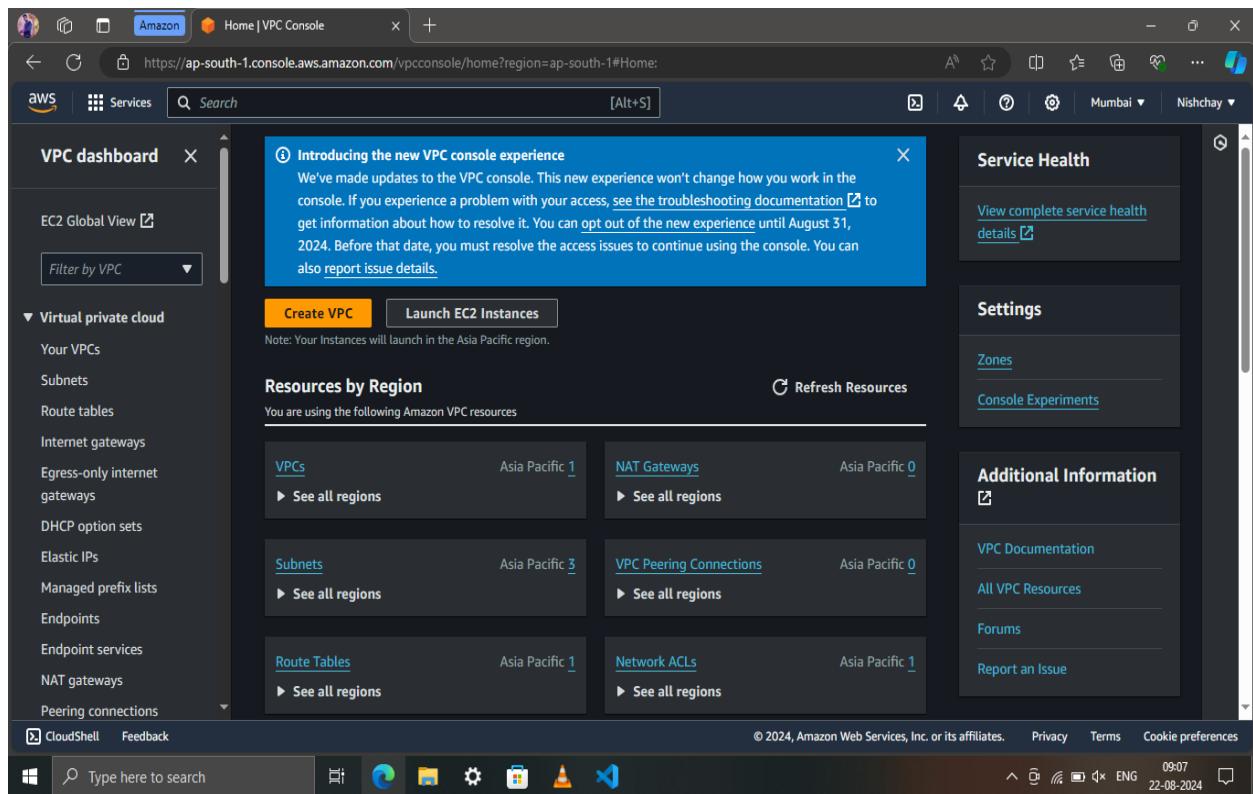


PROJECT

STEP 1: Create VPC



- Go to VPC Dashboard in AWS Management console.
- Click Create VPC



- Name the VPC and set the IPv4 CIDR block (e.g., 10.0.0.0/16)

Amazon CreateVpc | VPC Console https://ap-south-1.console.aws.amazon.com/vpcconsole/home?region=ap-south-1#CreateVpc:createMode=vpcOnly

VPC settings

Resources to create [Info](#)
Create only the VPC resource or the VPC and other networking resources.

VPC only VPC and more

Name tag - optional
Creates a tag with a key of 'Name' and a value that you specify.
vpc1

IPv4 CIDR block [Info](#)
 IPv4 CIDR manual input IPAM-allocated IPv4 CIDR block

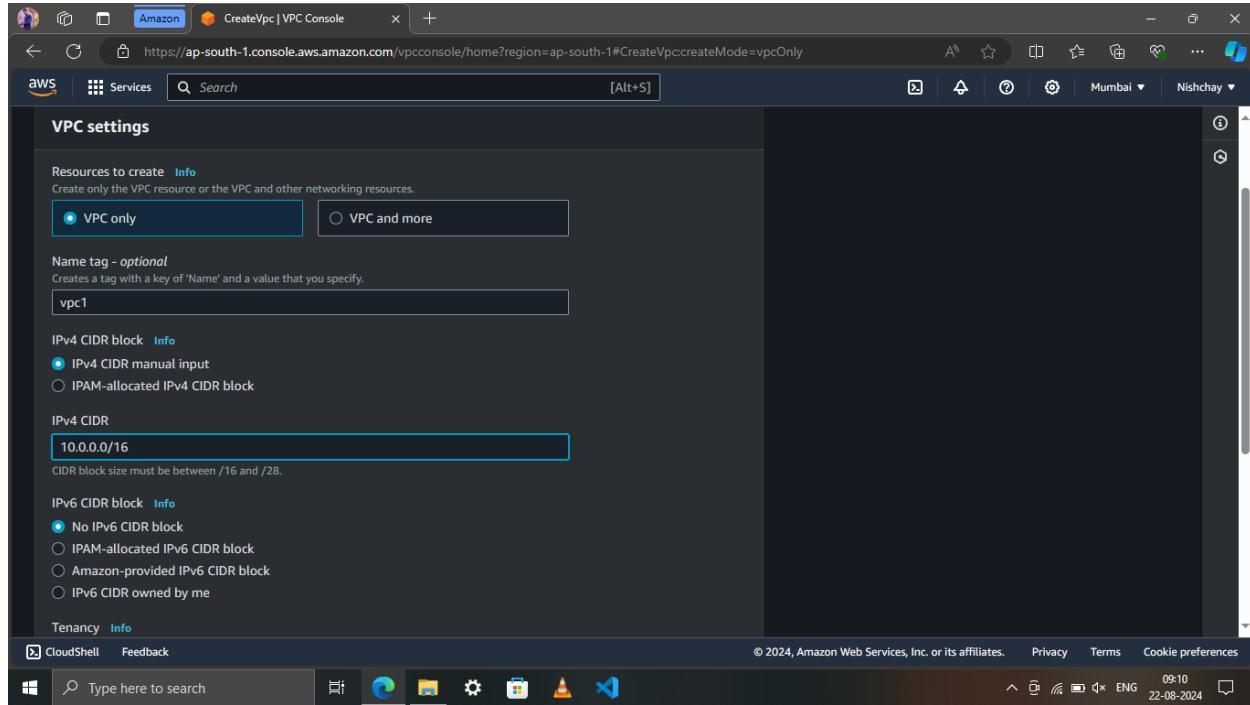
IPv4 CIDR
10.0.0.0/16

IPv6 CIDR block [Info](#)
 No IPv6 CIDR block IPAM-allocated IPv6 CIDR block Amazon-provided IPv6 CIDR block IPv6 CIDR owned by me

Tenancy [Info](#)

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Type here to search 09:10 22-08-2024



Amazon CreateVpc | VPC Console https://ap-south-1.console.aws.amazon.com/vpcconsole/home?region=ap-south-1#CreateVpc:createMode=vpcOnly

10.0.0.0/16

CIDR block size must be between /16 and /28.

IPv6 CIDR block [Info](#)
 No IPv6 CIDR block IPAM-allocated IPv6 CIDR block Amazon-provided IPv6 CIDR block IPv6 CIDR owned by me

Tenancy [Info](#)
Default

Tags
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

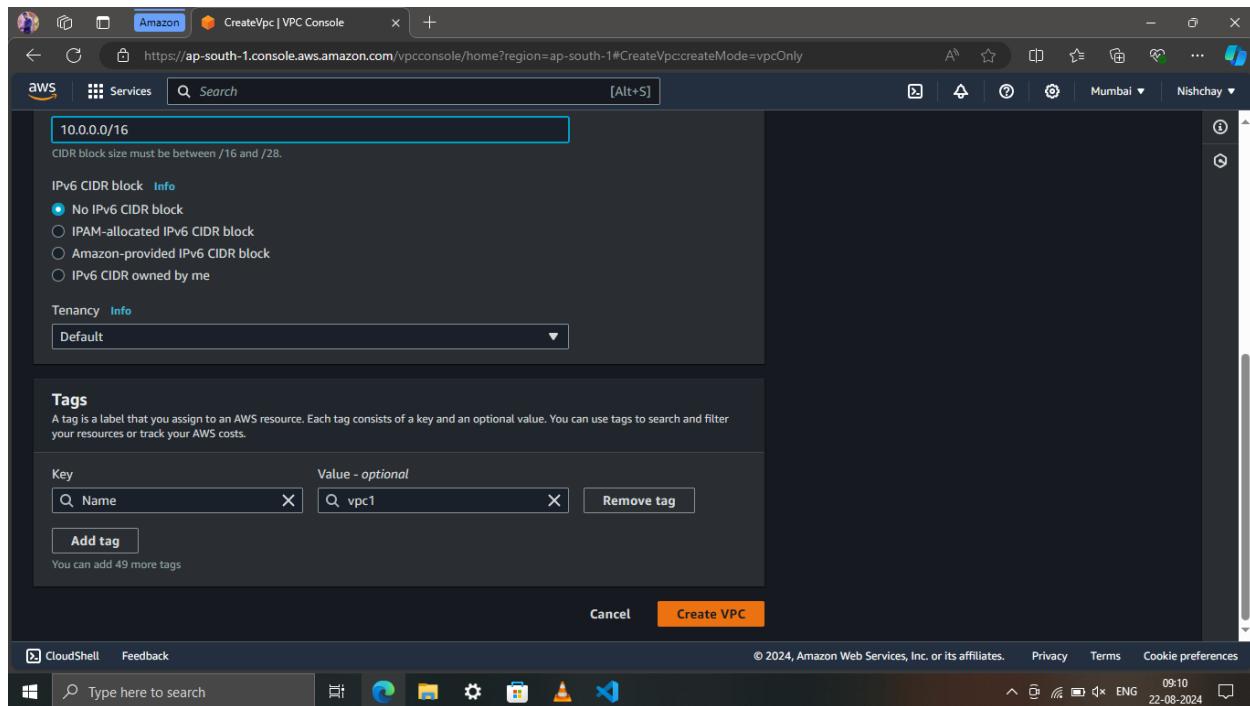
Key	Value - optional
Q Name	Q vpc1

Add tag
You can add 49 more tags

Cancel **Create VPC**

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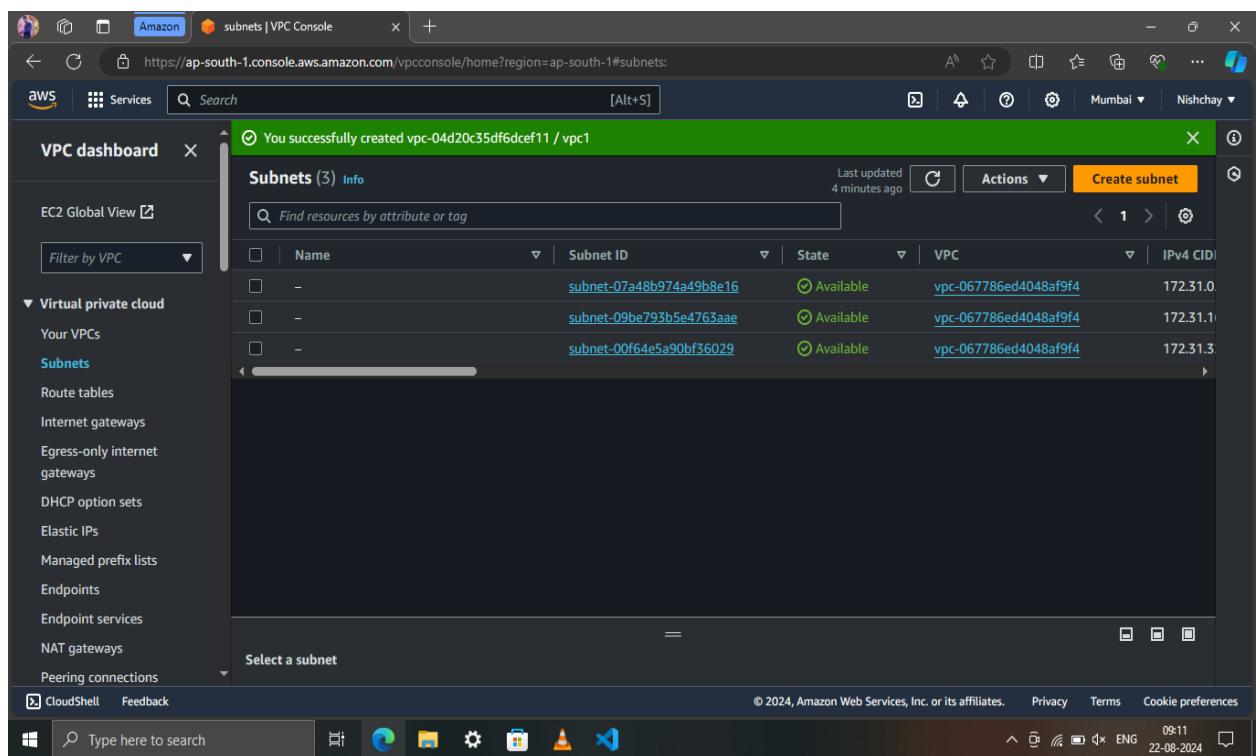
Type here to search 09:10 22-08-2024



- Leave the other settings as default or modify as needed. Click on Create VPC.

STEP 2: Create 3 Subnets

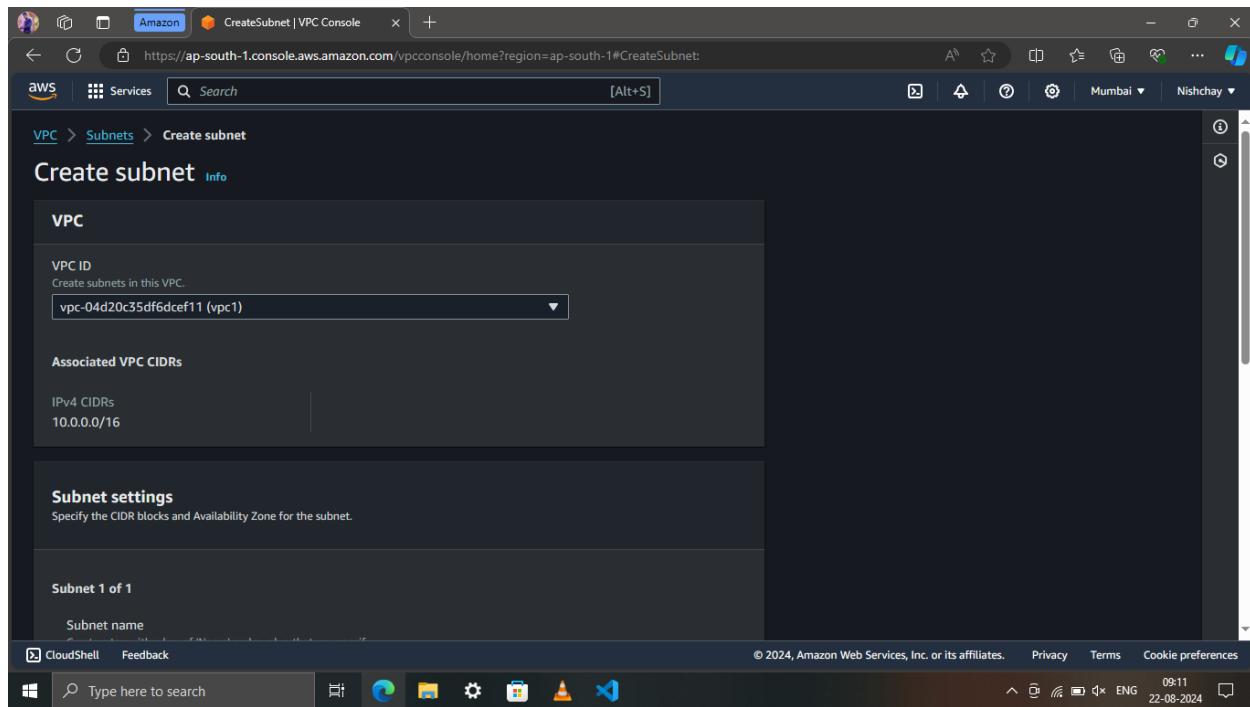
- Click Create Subnet



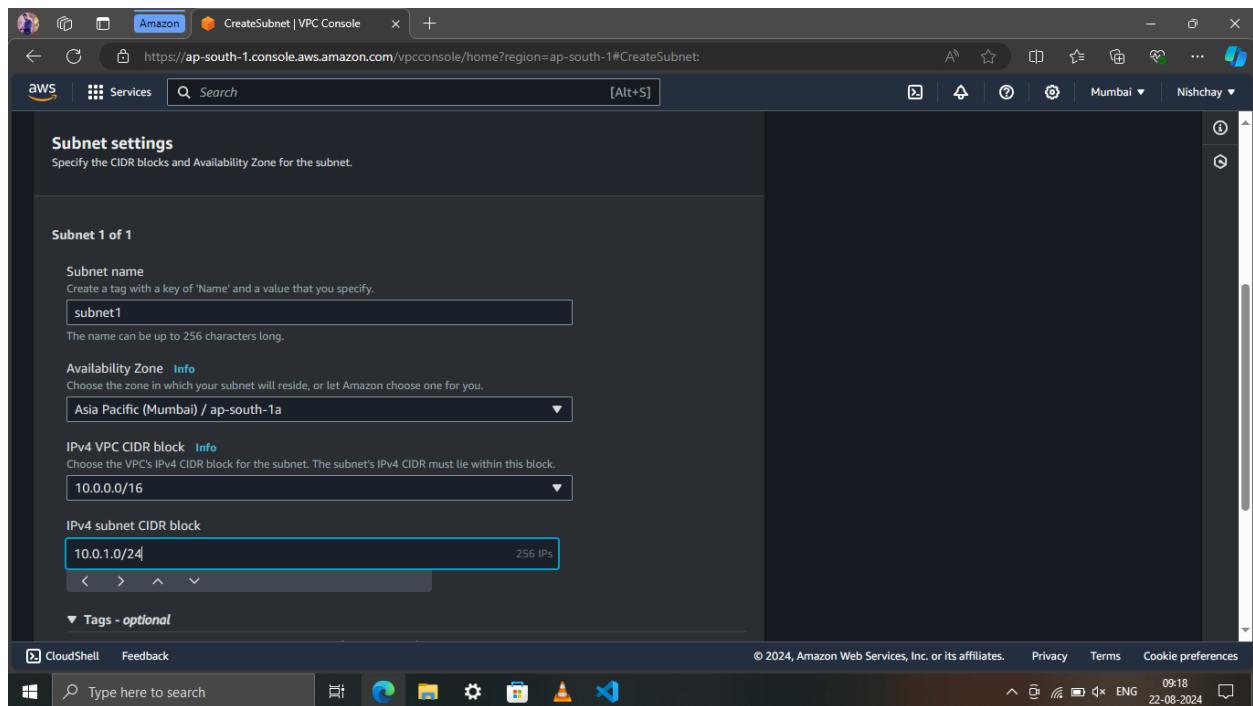
The screenshot shows the AWS VPC Subnets page. At the top, a green banner displays the message: "You successfully created vpc-04d20c35df6dcef11 / vpc1". Below this, the "Subnets (3) Info" section is visible. A table lists three subnets:

Name	Subnet ID	State	VPC	IPv4 CIDR
-	subnet-07a48b974a49b8e16	Available	vpc-067786ed4048af9f4	172.31.0.0/16
-	subnet-09be793b5e4763aae	Available	vpc-067786ed4048af9f4	172.31.1.0/16
-	subnet-00f64e5a90bf36029	Available	vpc-067786ed4048af9f4	172.31.3.0/16

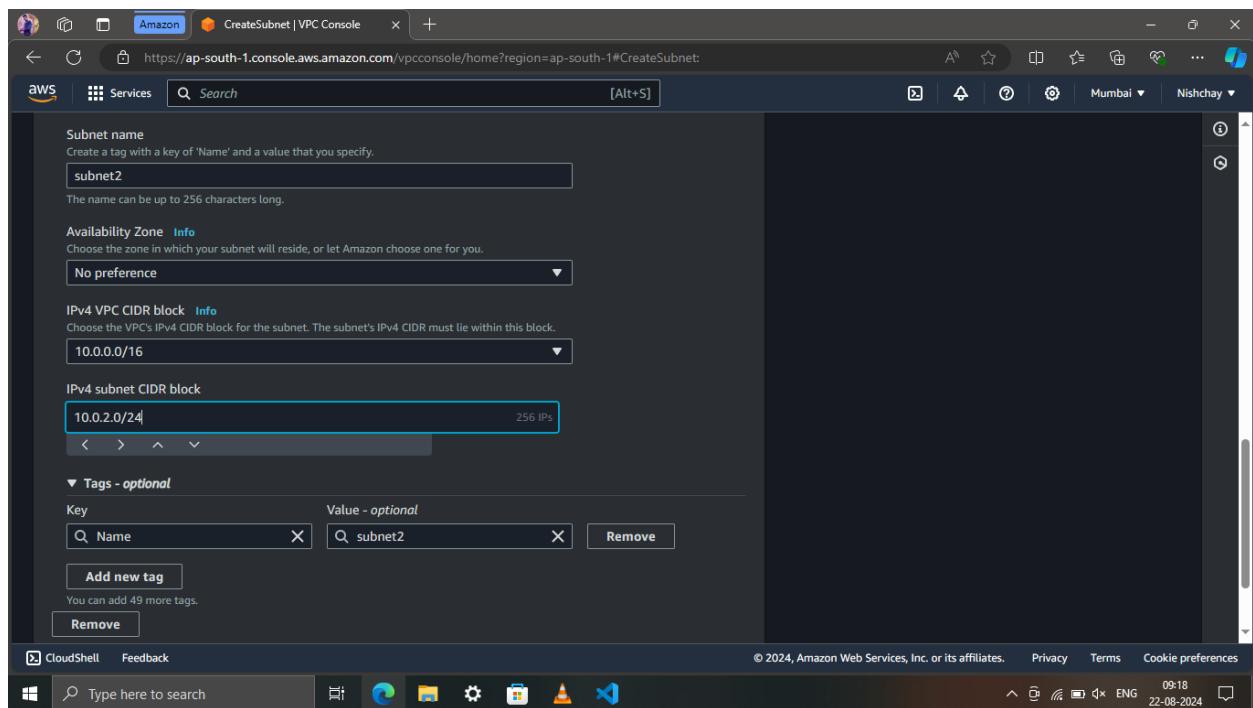
The left sidebar shows the navigation menu for the VPC dashboard, including options like EC2 Global View, Filter by VPC, Virtual private cloud, Your VPCs, Subnets, Route tables, Internet gateways, Egress-only internet gateways, DHCP option sets, Elastic IPs, Managed prefix lists, Endpoints, Endpoint services, NAT gateways, and Peering connections. The "Subnets" option is currently selected.



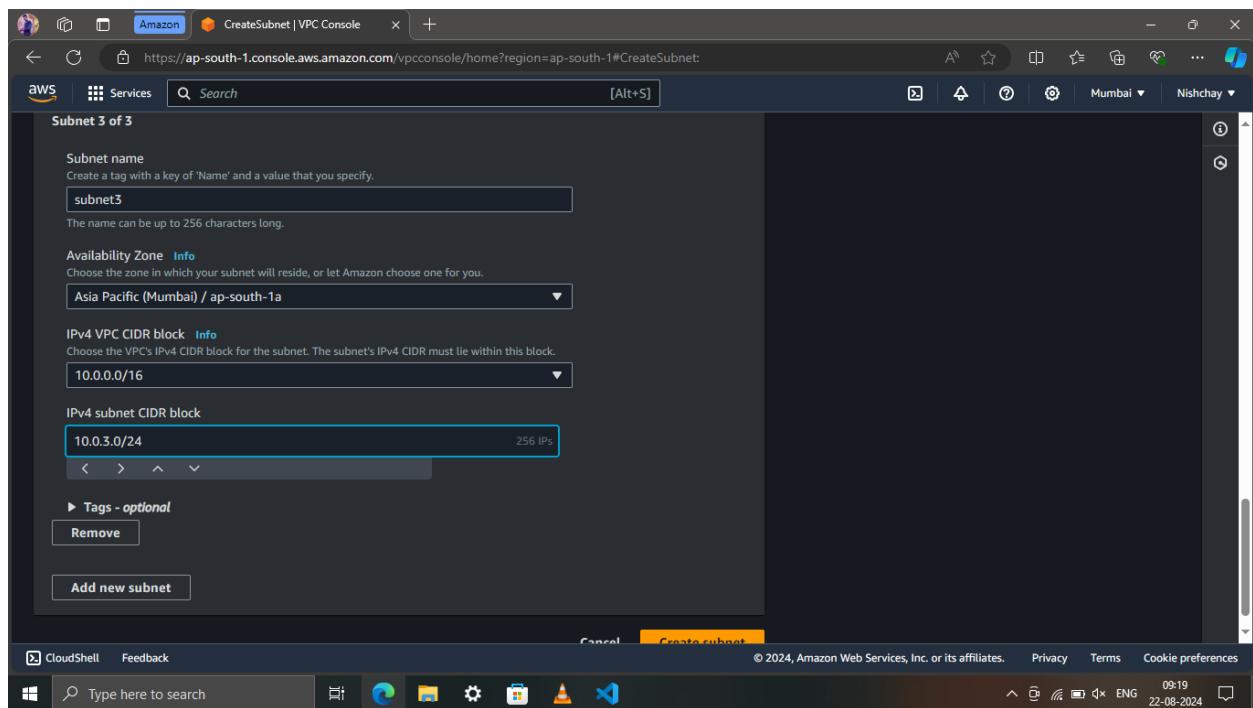
- Select the VPC you created earlier.
- Create three subnets with the following details:
- Subnet 1: 10.0.1.0/24(Public Subnet)



- **Subnet 2: 10.0.2.0/24(Public subnet)**

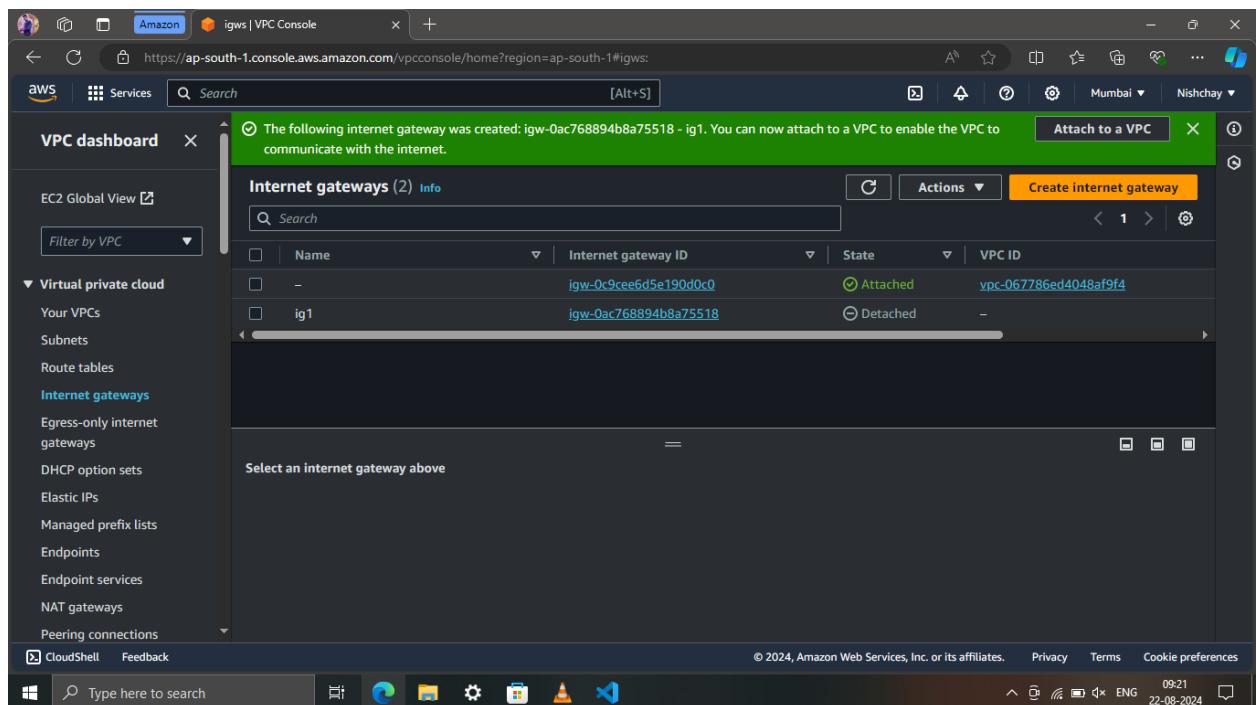


- Subnet 3: 10.0.3.0/24

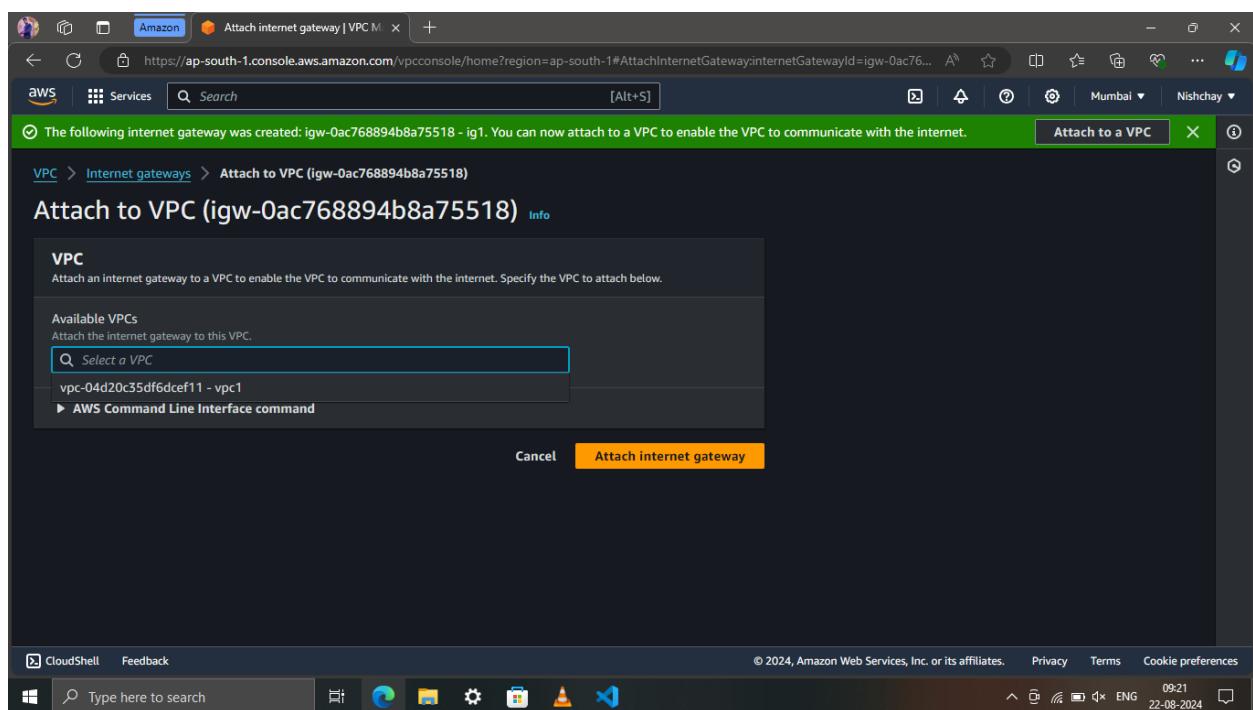


STEP 3: Create and attach an internet gateway

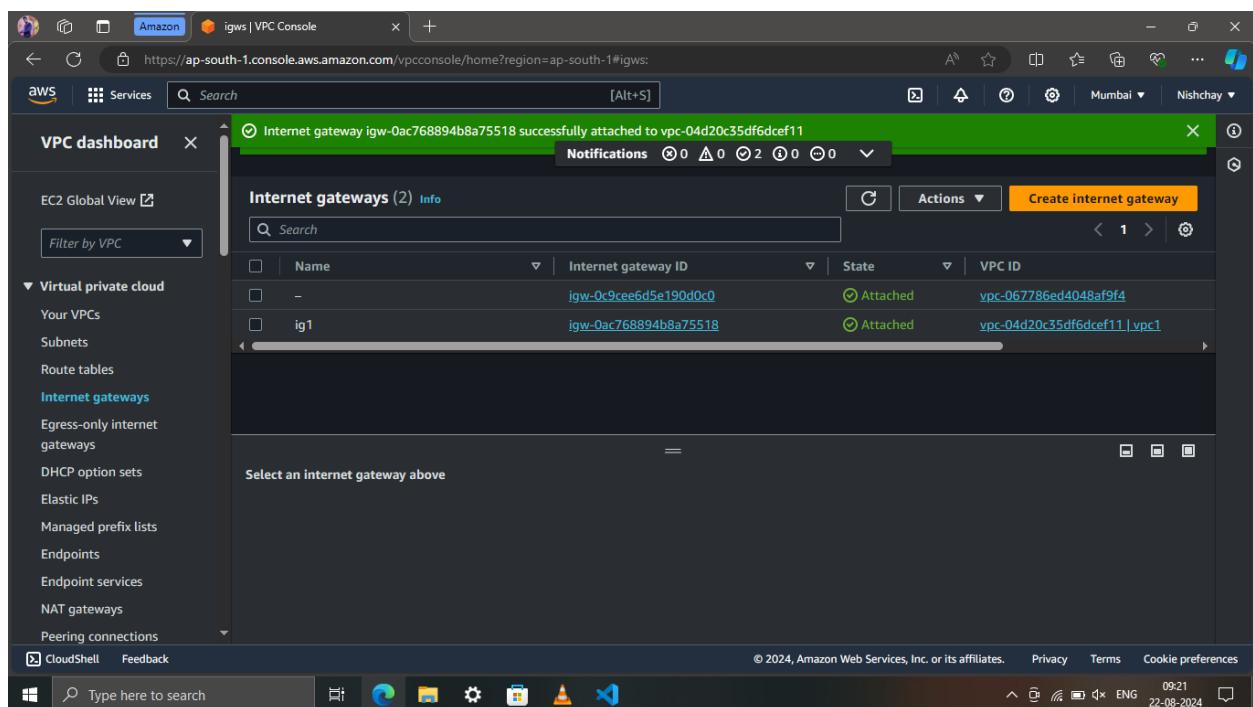
- Go to the internet gateway section in the VPC Dashboard.



- Click create internet gateway, name it, and click create

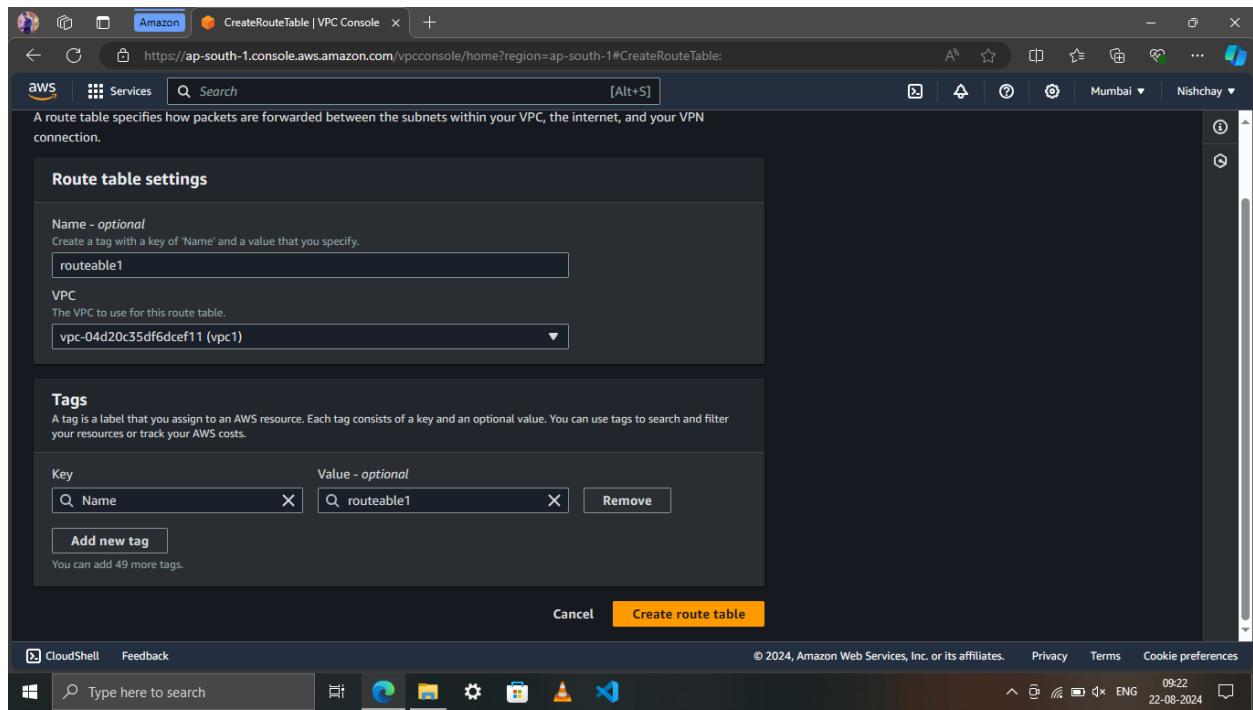


- Select the newly created internet gateway.
- Click Actions, and choose attach VPC.
- Select your VPC.



STEP 4: Create a route table and associate subnets

- Go to route table in the VPC dashboard.



- Click create route table.
- Name it
- Associate it with your VPC.

The screenshot shows the AWS VPC Route Tables console. A success message at the top states: "Route table rtb-0444bb4a444845778 | routeable1 was created successfully." Below this, a table lists three route tables:

Name	Route table ID	Explicit subnet associations	Main
-	rtb-0705bba23cccd155c4	-	Yes
-	rtb-024de9707ad6e66b9	-	Yes
routeable1	rtb-0444bb4a444845778	-	No

The "routeable1" row is selected. Below the table, the details for "rtb-0444bb4a444845778 / routeable1" are shown. The "Details" tab is selected, displaying the following information:

Route table ID	Main	Explicit subnet associations	Edge associations
rtb-0444bb4a444845778	No	-	-

At the bottom of the page, there are links for CloudShell, Feedback, and a search bar. The status bar at the bottom right shows the date and time: 09:22 22-08-2024.

- Associate subnets: go to the subnet associations tab
- Click edit subnet Associations
- Associate the public subnet.

The screenshot shows the 'Edit subnet associations' page in the AWS VPC console. The URL is <https://ap-south-1.console.aws.amazon.com/vpcconsole/home?region=ap-south-1#EditRouteTableSubnetAssociations:RouteTableId=rtb-0444bb4a444845778>.

Available subnets (3/3)

<input checked="" type="checkbox"/>	Name	Subnet ID	IPv4 CIDR	IPv6 CIDR	Route table ID
<input checked="" type="checkbox"/>	subnet3	subnet-0809cce009d584966	10.0.3.0/24	-	Main (rtb-024de9707ad6e66b9)
<input checked="" type="checkbox"/>	subnet2	subnet-02a72983575fe48c7	10.0.2.0/24	-	Main (rtb-024de9707ad6e66b9)
<input checked="" type="checkbox"/>	subnet1	subnet-0ea92e4a55e22e79a	10.0.1.0/24	-	Main (rtb-024de9707ad6e66b9)

Selected subnets

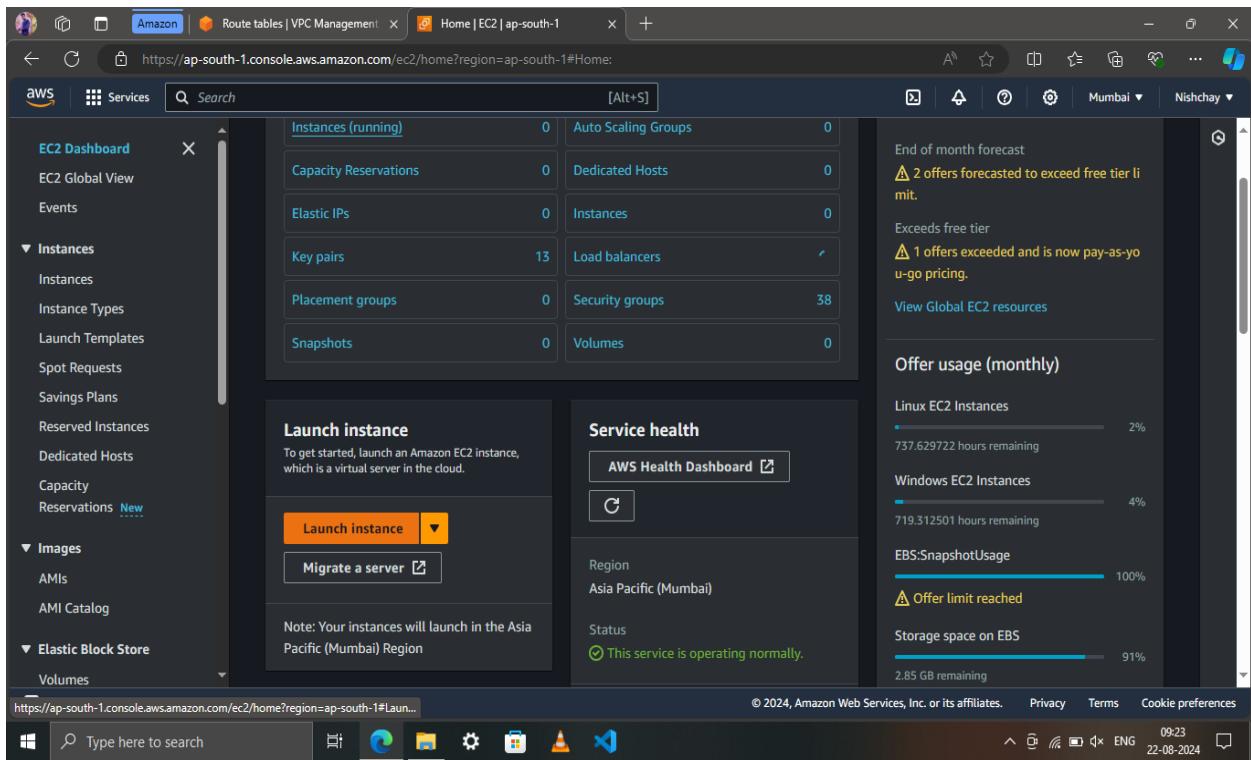
- subnet-0809cce009d584966 / subnet3
- subnet-02a72983575fe48c7 / subnet2
- subnet-0ea92e4a55e22e79a / subnet1

Buttons: Cancel, Save associations

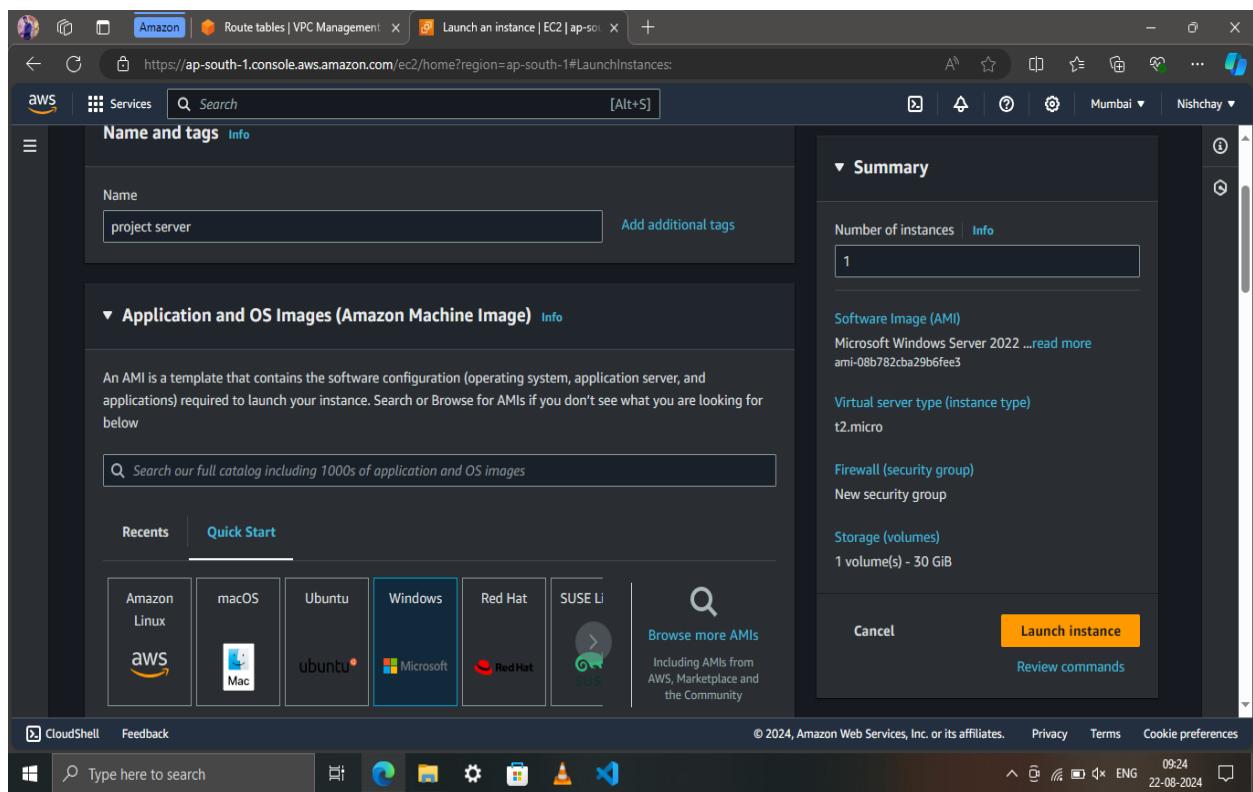
System tray icons: CloudShell, Feedback, Type here to search, Taskbar icons (File Explorer, Settings, Google Chrome, VLC Media Player, Visual Studio Code), Network status (Wi-Fi, Cellular, Battery), Date and time (09:23, 22-08-2024).

STEP 5: Launch a Windows EC2 Instance

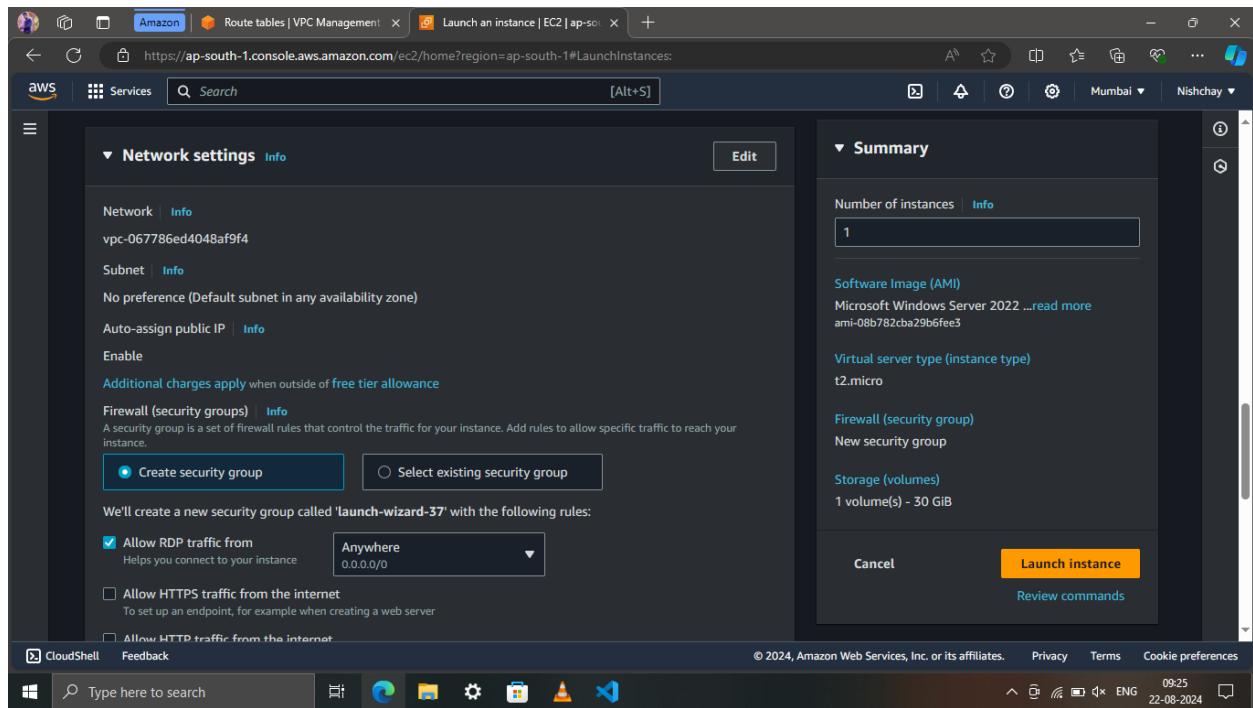
- Go to the EC2 dashboard and click Launch instance.



- Choose AMI: Select a Windows Server AMI (for example Windows).



- **Instance Type:** Choose an instance type (e.g., t2.micro).



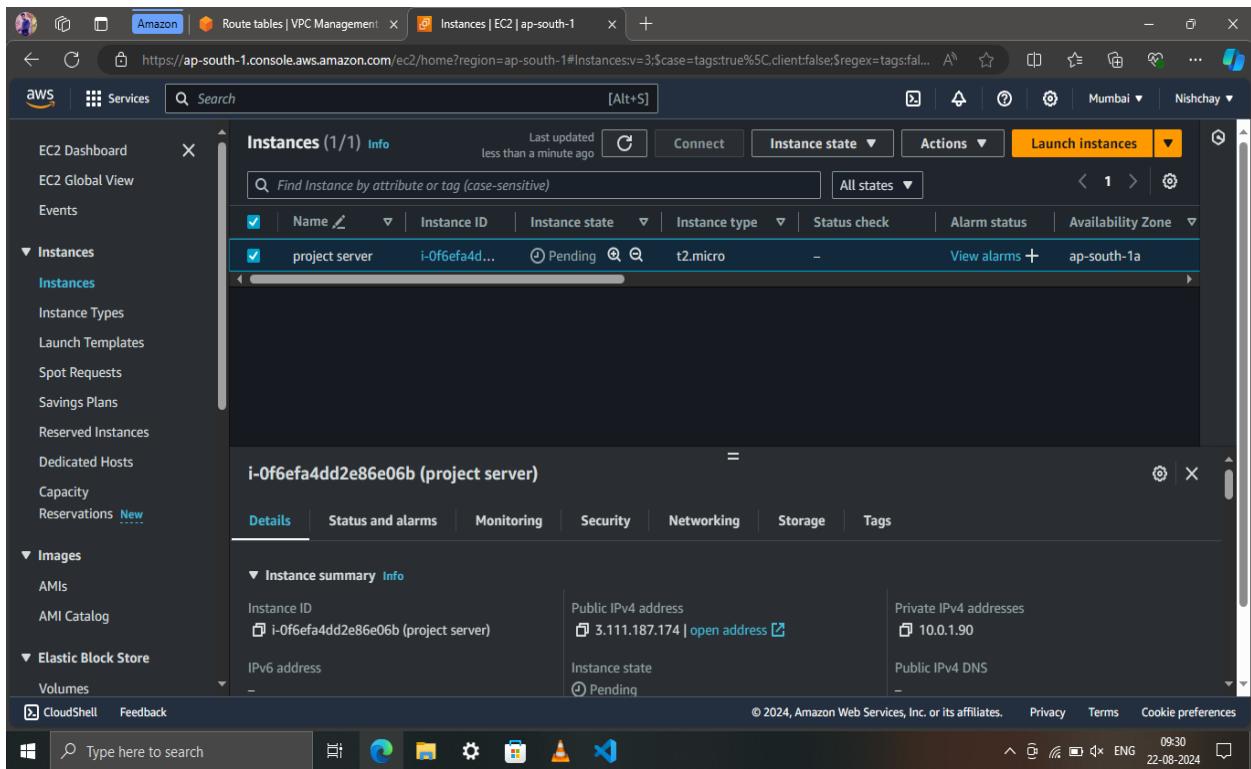
Configure instance Details:

- **Network:** Select your VPC.
- **Subnet:** Select subnet.
- **Auto-assign Public IP:** Enable it.

The screenshot shows the 'Network settings' step of the EC2 instance launch wizard. On the left, there's a 'VPC - required' section with a dropdown set to 'vpc-04d20c35df6dcef11 (vpc1) 10.0.0.0/16'. Below it is a 'Subnet' section with a dropdown for 'subnet1' (subnet-0ea92e4a55e22e79a), showing details like VPC ID, owner, availability zone, and CIDR. An 'Auto-assign public IP' dropdown is set to 'Enable'. A note about additional charges applies when outside of free tier allowance. A 'Firewall (security groups)' section allows creating a new security group ('Create security group') or selecting an existing one ('Select existing security group'). The security group name is 'launch-wizard-37'. A note states that this group will be added to all network interfaces. On the right, the 'Summary' panel shows 1 instance, the Microsoft Windows Server 2022 AMI, t2.micro instance type, a new security group, and 1 volume (30 GiB). At the bottom are 'Cancel', 'Launch instance' (highlighted in orange), and 'Review commands' buttons.

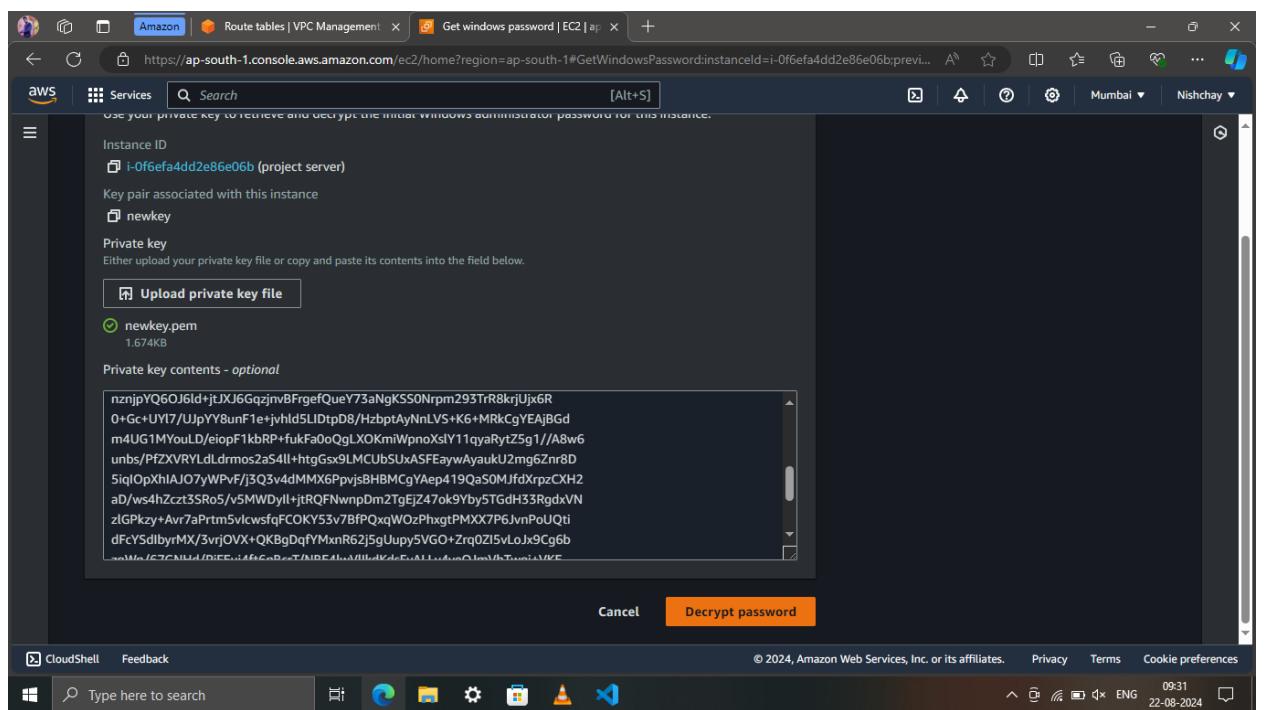
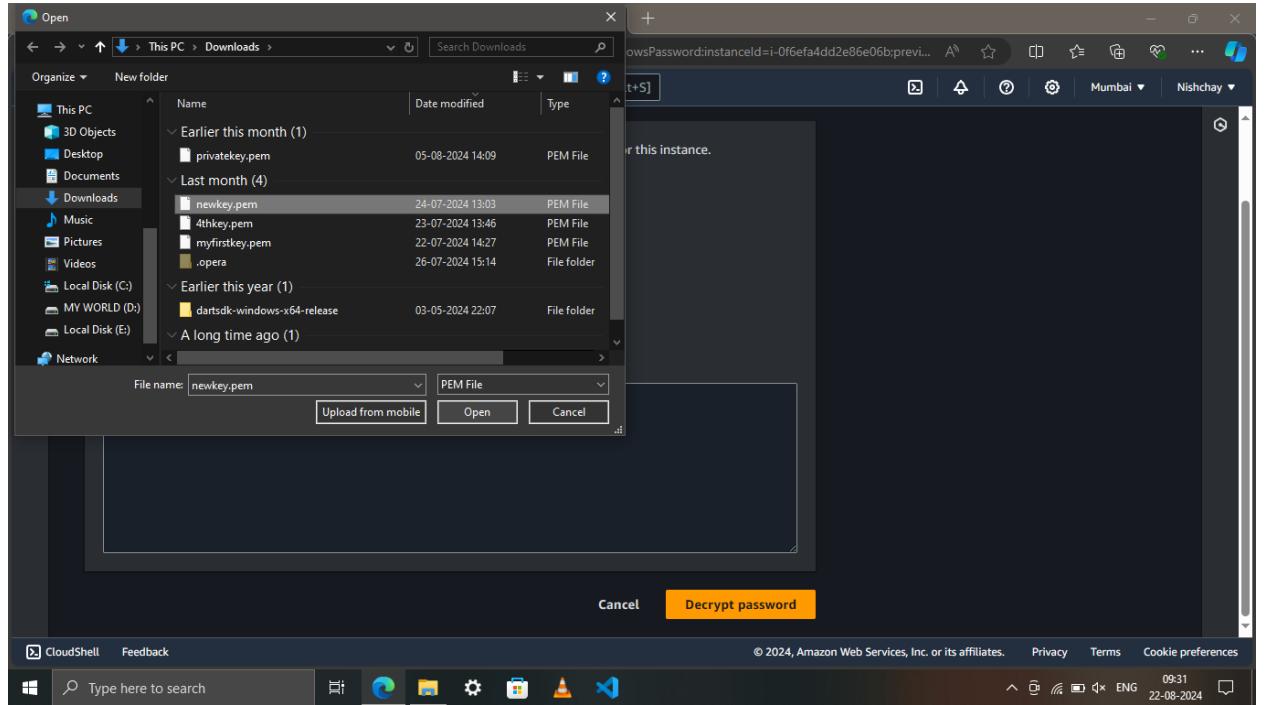
The screenshot shows the 'Security group rules' step of the EC2 instance launch wizard. It lists two rules: 'Security group rule 2 (All, All, 0.0.0.0/0)' and 'Security group rule 3 (ICMP, All, 0.0.0.0/0)'. Rule 2 is for 'All traffic' with 'Anywhere' source. Rule 3 is for 'Custom ICMP - IPv4' with 'Anywhere' source. A warning message at the bottom states: '⚠️ Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.' The right side of the screen shows the same summary as the previous step: 1 instance, Microsoft Windows Server 2022 AMI, t2.micro instance type, a new security group, and 1 volume (30 GiB). The 'Launch instance' button is highlighted in orange.

1.launch: Review and launch the instance using a new or existing key pair.

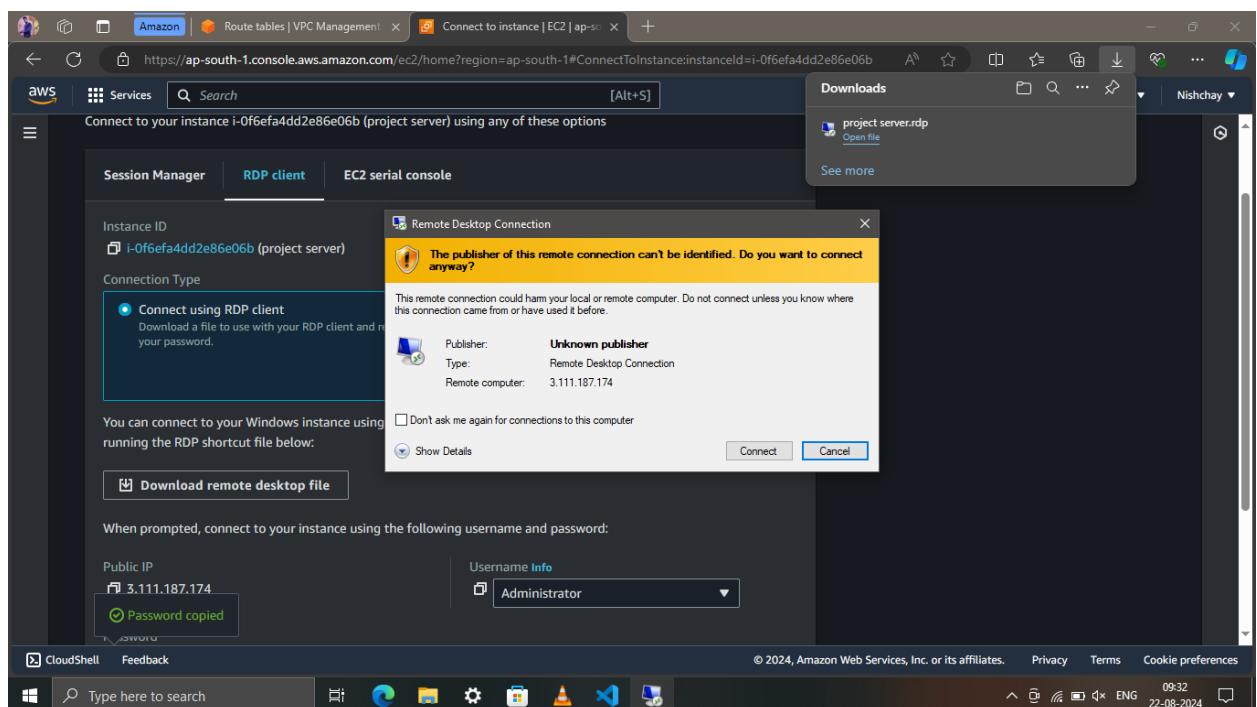


The screenshot shows the AWS EC2 'Connect to instance' page for an instance with ID i-0f6efa4dd2e86e06b. The 'Session Manager' tab is selected. A prominent error message states: 'SSM Agent is not online. The SSM Agent was unable to connect to a Systems Manager endpoint to register itself with the service.' Below this, under 'Session Manager usage:', there is a bulleted list of instructions. At the bottom right are 'Cancel' and 'Connect' buttons. The browser's address bar shows the URL https://ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#ConnectToInstance:instanceId=i-0f6efa4dd2e86e06b.

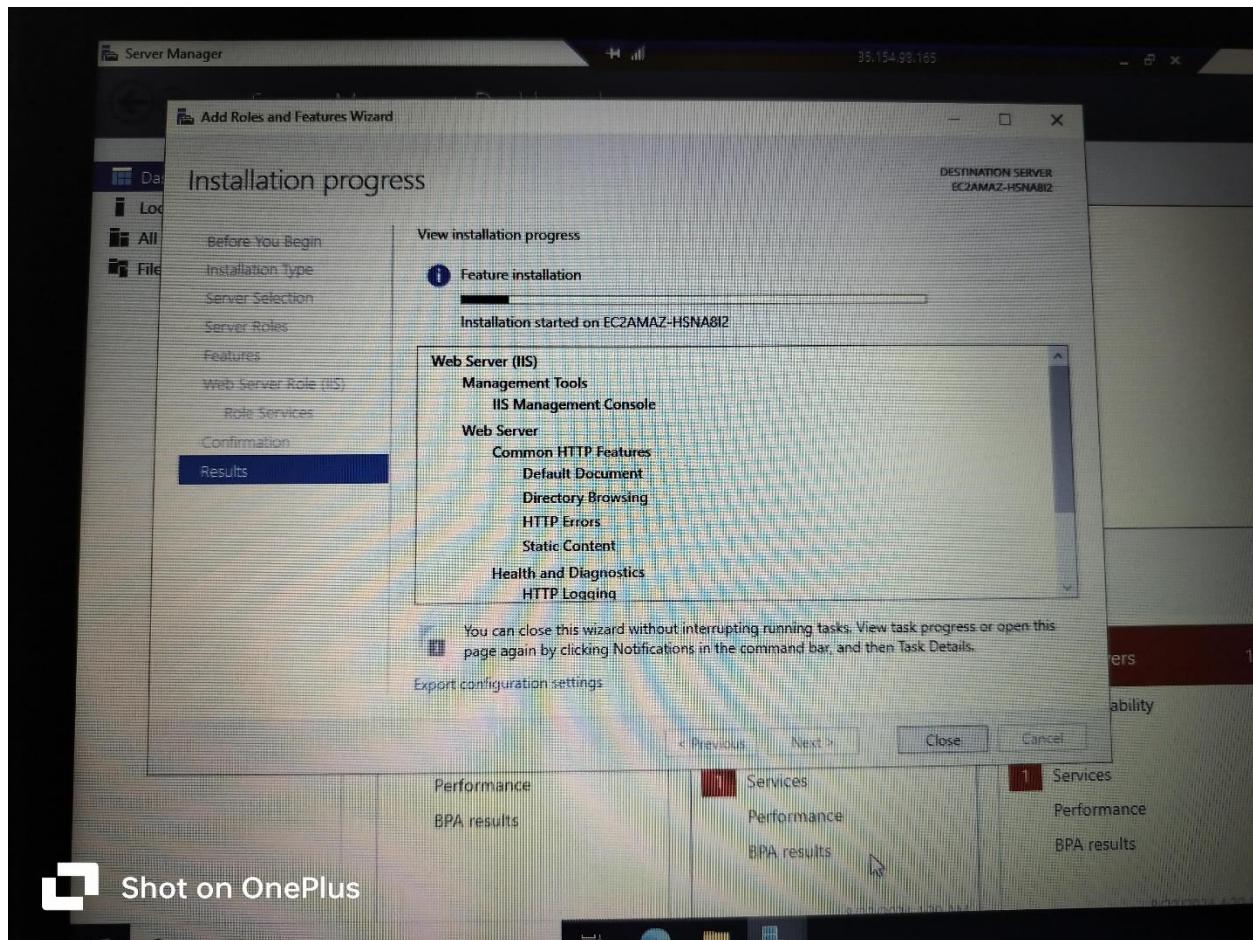
The screenshot shows the same AWS EC2 'Connect to instance' page for the same instance. The 'RDP client' tab is now selected. It displays two connection options: 'Connect using RDP client' (selected) and 'Connect using Fleet Manager'. Below these options, a note says: 'You can connect to your Windows instance using a remote desktop client of your choice, and by downloading and running the RDP shortcut file below.' A 'Download remote desktop file' button is shown. At the bottom, it asks for a 'Public IP' (3.111.187.174) and 'Username Info' (Administrator). The browser's address bar shows the URL https://ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#ConnectToInstance:instanceId=i-0f6efa4dd2e86e06b.



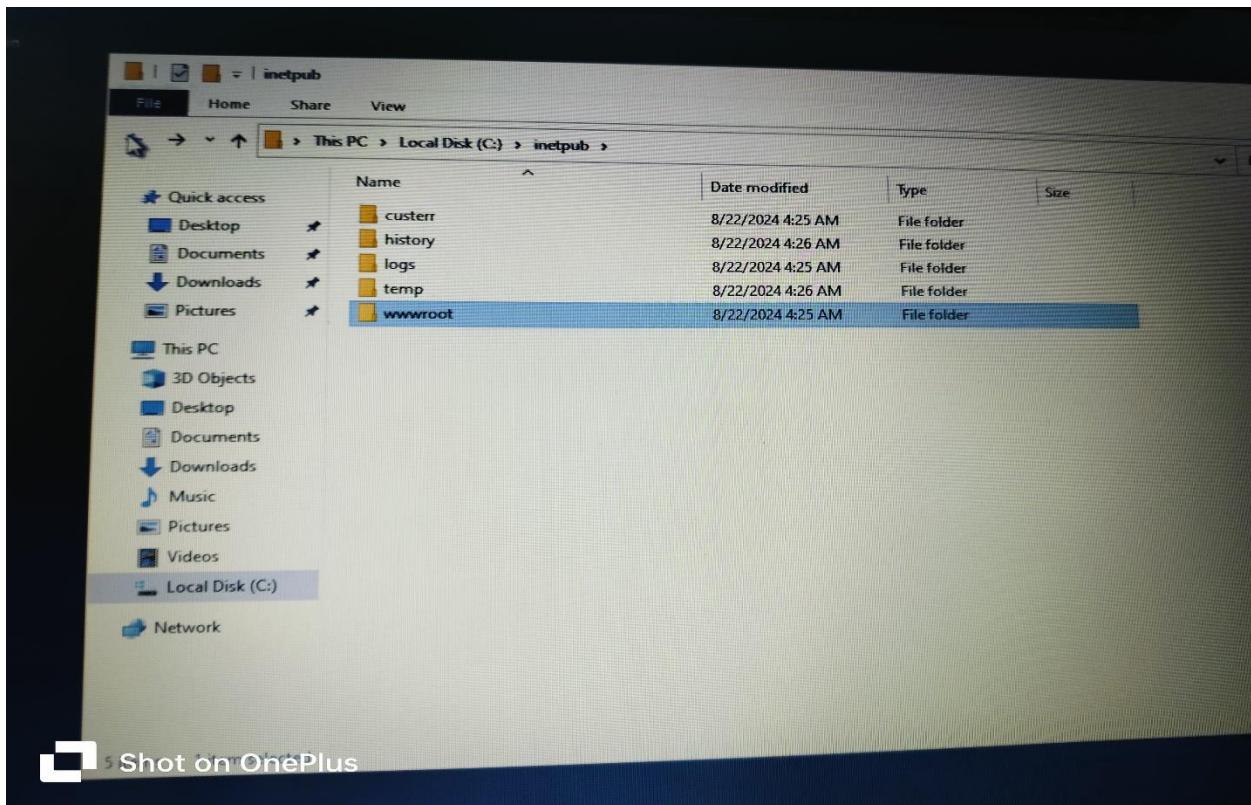
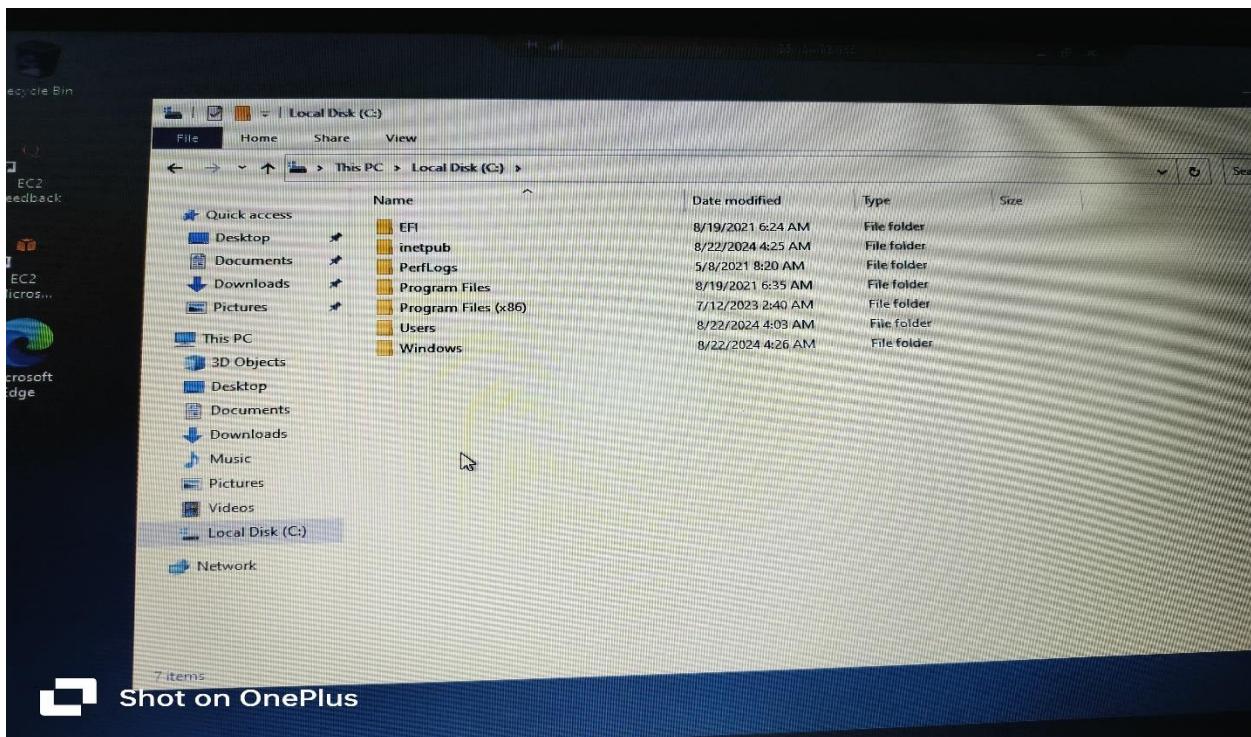
STEP 6: Set up IIS for web Hosting



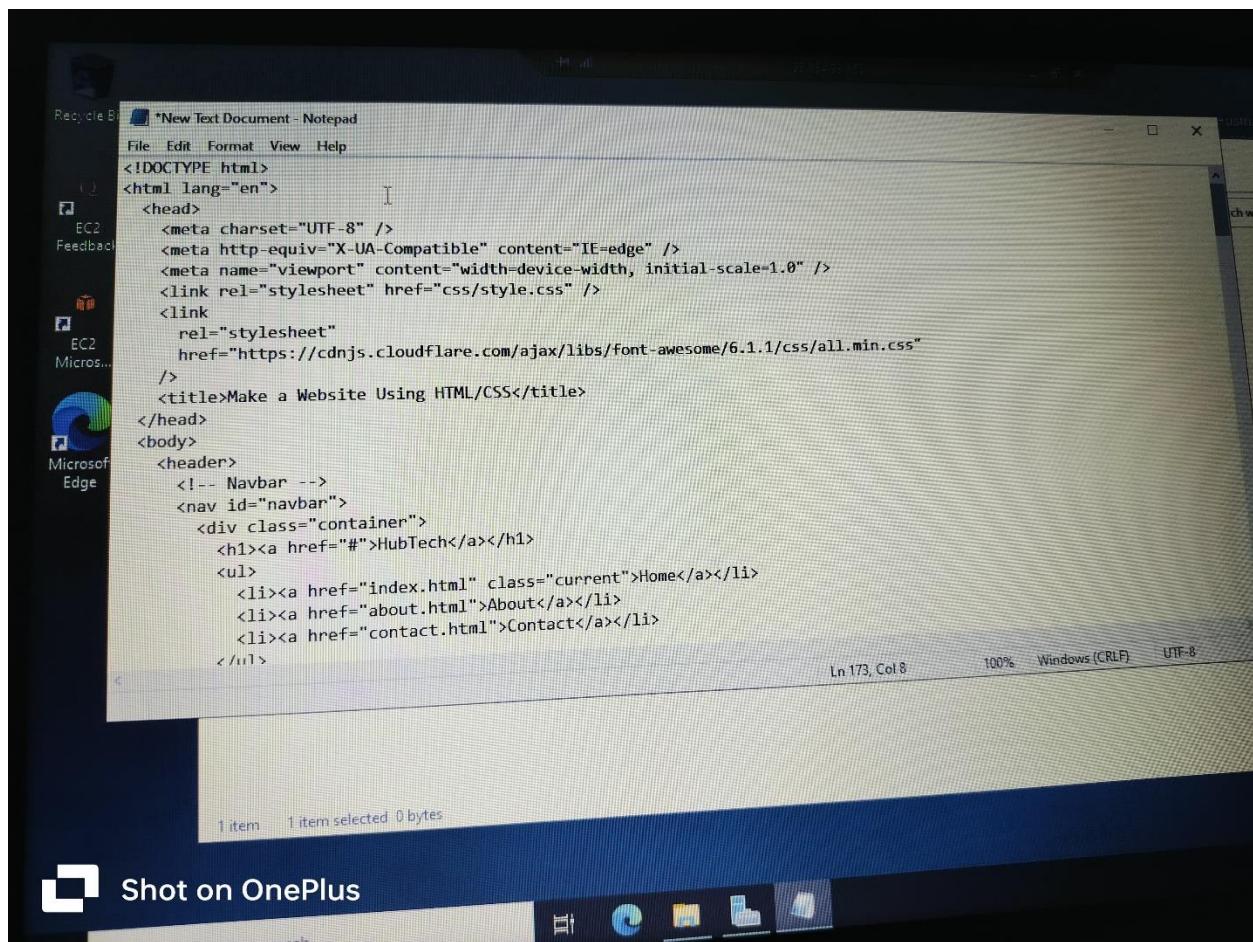
- **Install IIS (Internet Information Services):**
- **Open server manager.**
- **Add Roles and features > Select Web server (IIS)**
- **Complete the wizard**

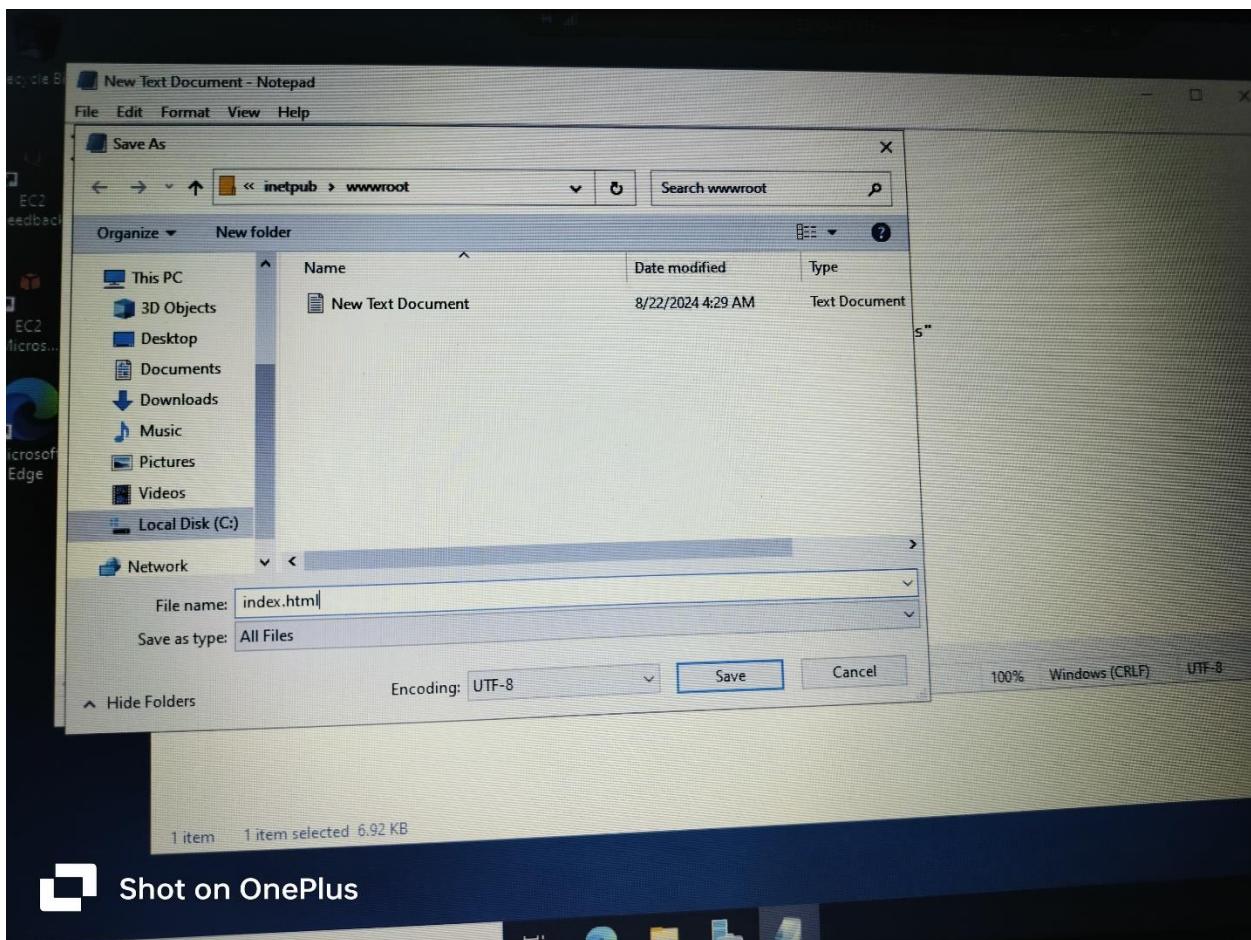


Shot on OnePlus

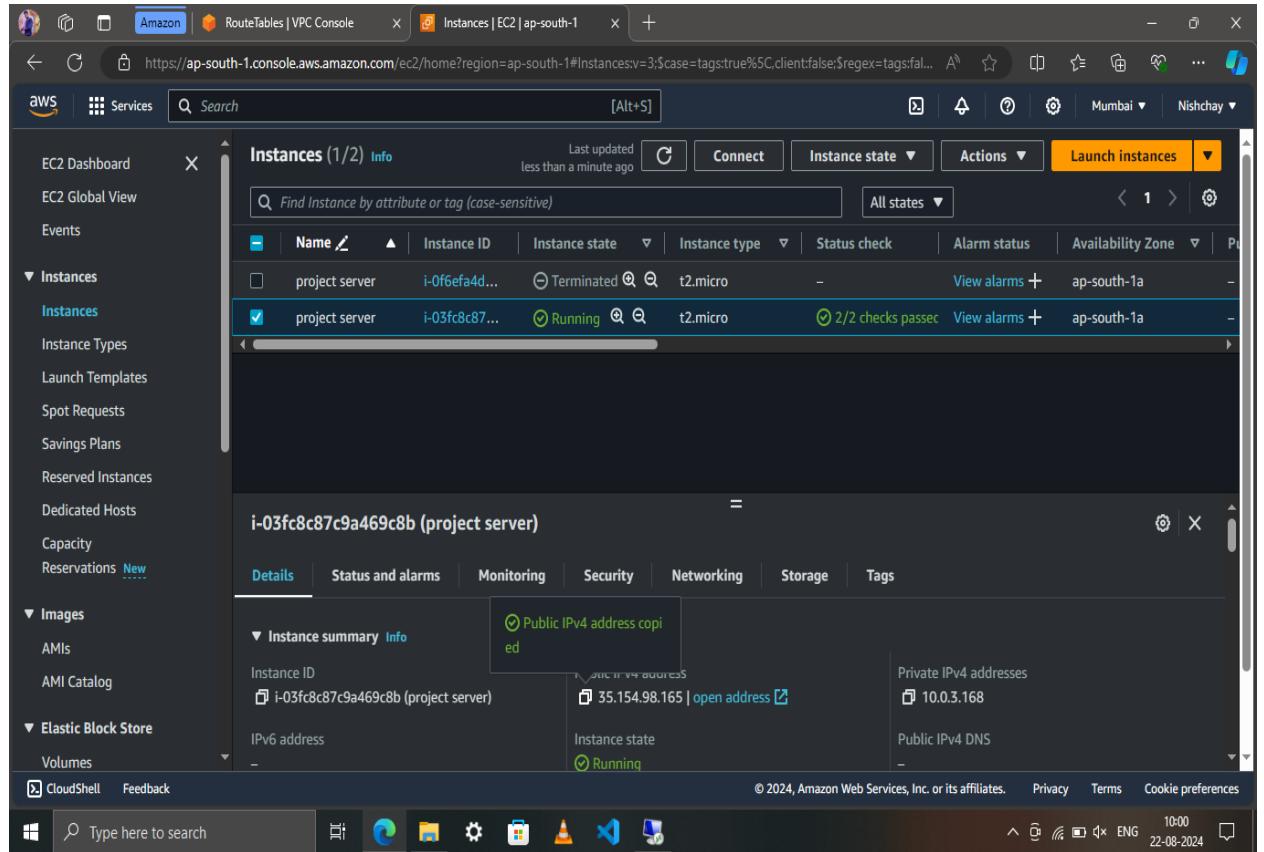


- Place your web content in **C:\inetpub\wwwroot**.
- You can test it by accessing the instances public IP in a browser.
- Now delete all the contents from wwwroot.
- Copy the website and paste in the wwwroot.
- Copy the Public IP address and paste in the text tab of the browser.





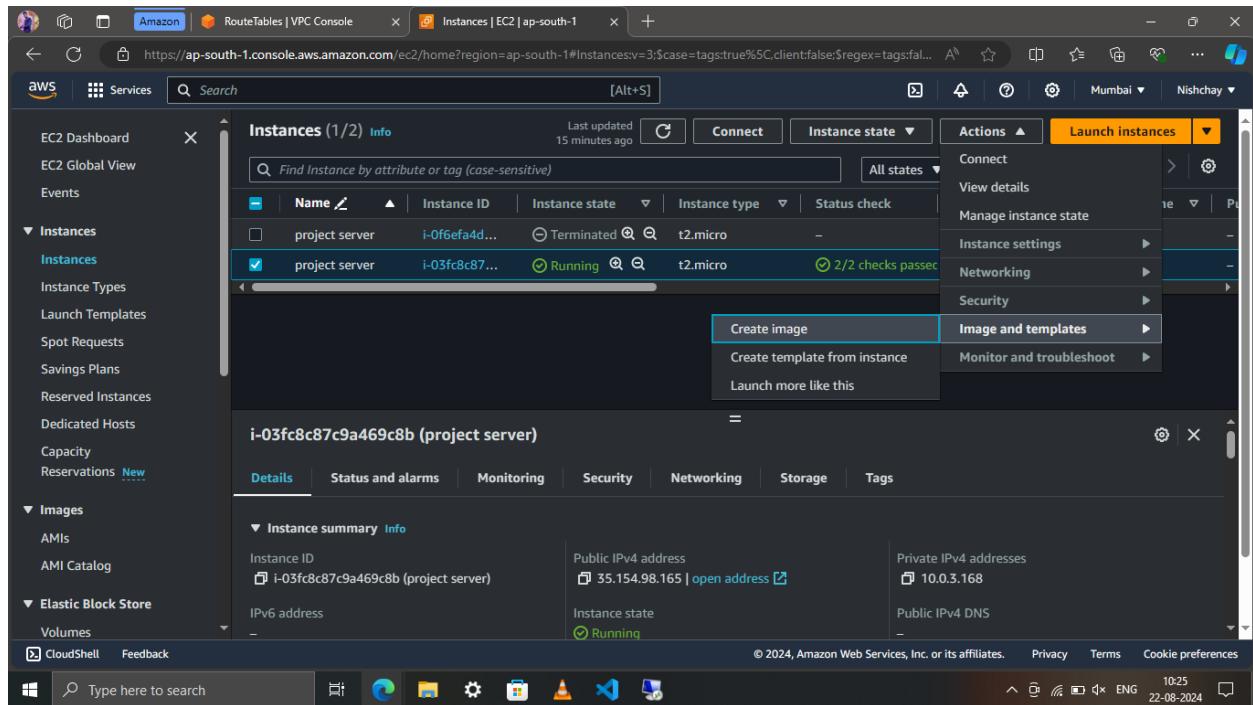
- Save file using index.html

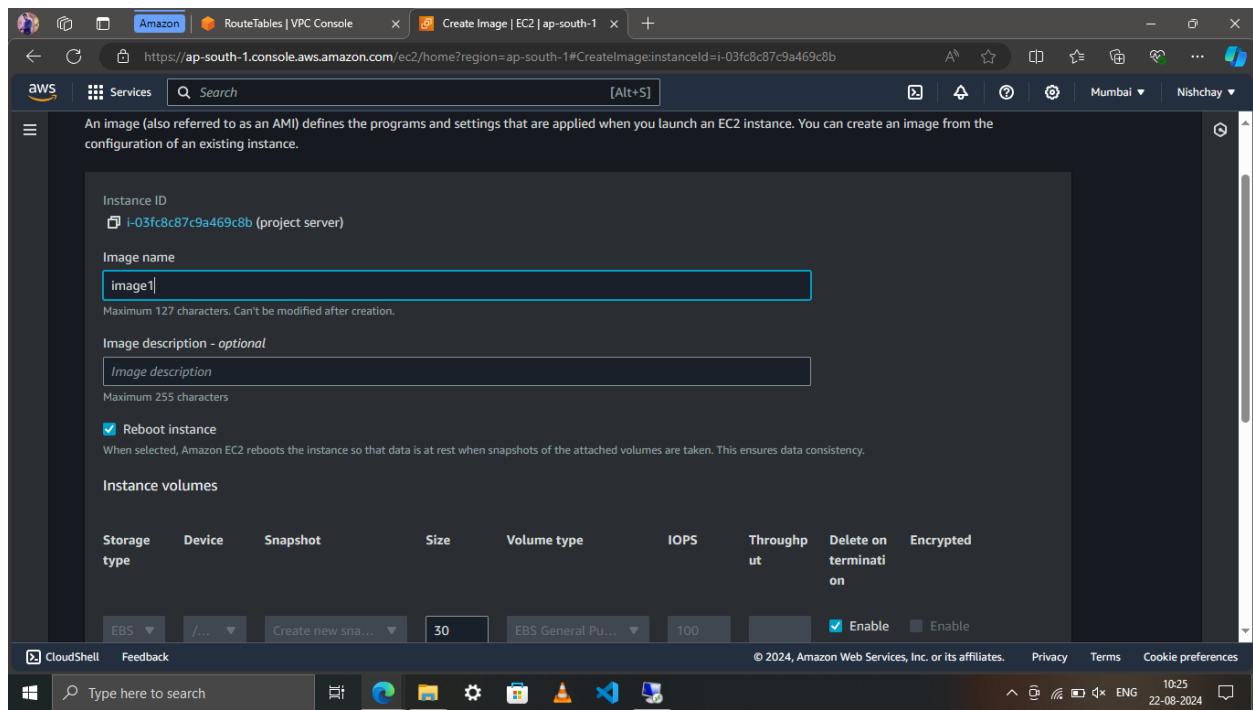


- Now open new tab and paste the IP address.

STEP 7: Create an AMI

- Go to the EC2 dashboard.
- Go to the instance
- Click Actions>image and templates
- Create image
- Name the image and provide a description.
- Click Create image.





STEP 8: Create SNS for notification and monitoring.

- Search SNS
- Go to Create topic
- Create topic

The screenshot shows the AWS Management Console search results for the term 'sns'. The search bar at the top contains 'sns'. Below it, the 'Services' section is expanded, showing a list of services including EC2, Route 53, and Simple Notification Service (SNS). The SNS entry is highlighted with a blue border. To the right, a sidebar displays various application-related cards, such as 'application' and 'Originating a...'. At the bottom of the screen, the Windows taskbar is visible with several pinned icons.

The screenshot shows the Amazon Simple Notification Service (SNS) homepage. A prominent banner at the top announces a new feature: 'Amazon SNS now supports in-place message archiving and replay for FIFO topics.' Below this, the main heading reads 'Amazon Simple Notification Service' and 'Pub/sub messaging for microservices and serverless applications.' To the right, there's a 'Create topic' form with a 'Topic name' field containing 'topic1'. Further down, there's a 'Pricing' section. The bottom of the page includes a navigation bar with links like 'CloudShell', 'Feedback', and 'Type here to search', along with the standard Windows taskbar.

The screenshot shows the AWS SNS Topics page. On the left, there's a sidebar with options like Dashboard, Topics (which is selected), Subscriptions, and Mobile (Push notifications, Text messaging (SMS), Origination numbers). The main content area displays a topic named 'topic1'. Its ARN is listed as 'arn:aws:sns:ap-south-1:533267079036:topic1' and its Type is 'Standard'. Below this, there's a 'Subscriptions' tab which is currently active, showing a table with one row: 'Subscriptions (0)'. A large button labeled 'Create subscription' is visible. At the bottom of the page, there are links for CloudShell, Feedback, and a search bar.

- Go to Subscription and attach your email.

The screenshot shows the AWS SNS Topic details page for 'topic1'. The top navigation bar includes links for RouteTables | VPC Console, Instances | EC2 | ap-south-1, topic1 | Topics | Simple Notifications, and a search bar. A green banner at the top states 'Topic topic1 created successfully. You can create subscriptions and send messages to them from this topic.' Below this, there are buttons for 'Publish message' and 'Edit'. The main content area is titled 'topic1' and contains a 'Details' section. It lists the Name as 'topic1', ARN as 'arn:aws:sns:ap-south-1:533267079036:topic1', and Type as 'Standard'. There are also fields for 'Display name' and 'Topic owner' (with the value '533267079036'). At the bottom, there are links for CloudShell, Feedback, and a search bar.

Amazon | RouteTables | VPC Console | Instances | EC2 | ap-south-1 | Create subscription | Subscription | +

aws Services Search [Alt+S] Mumbai Nishchay

Details

Topic ARN: arn:aws:sns:ap-south-1:533267079036:topic1

Protocol: Select protocol

- Amazon Kinesis Data Firehose
- Amazon SQS
- AWS Lambda
- Email
- Email-JSON
- HTTP
- HTTPS
- Platform application endpoint
- SMS

Cancel **Create subscription**

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Amazon | RouteTables | VPC Console | Instances | EC2 | ap-south-1 | Subscriptions | Simple Notification | +

aws Services Search [Alt+S] Mumbai Nishchay

Amazon SNS

New Feature: Amazon SNS now supports in-place message archiving and replay for FIFO topics. [Learn more](#)

Amazon SNS > Subscriptions

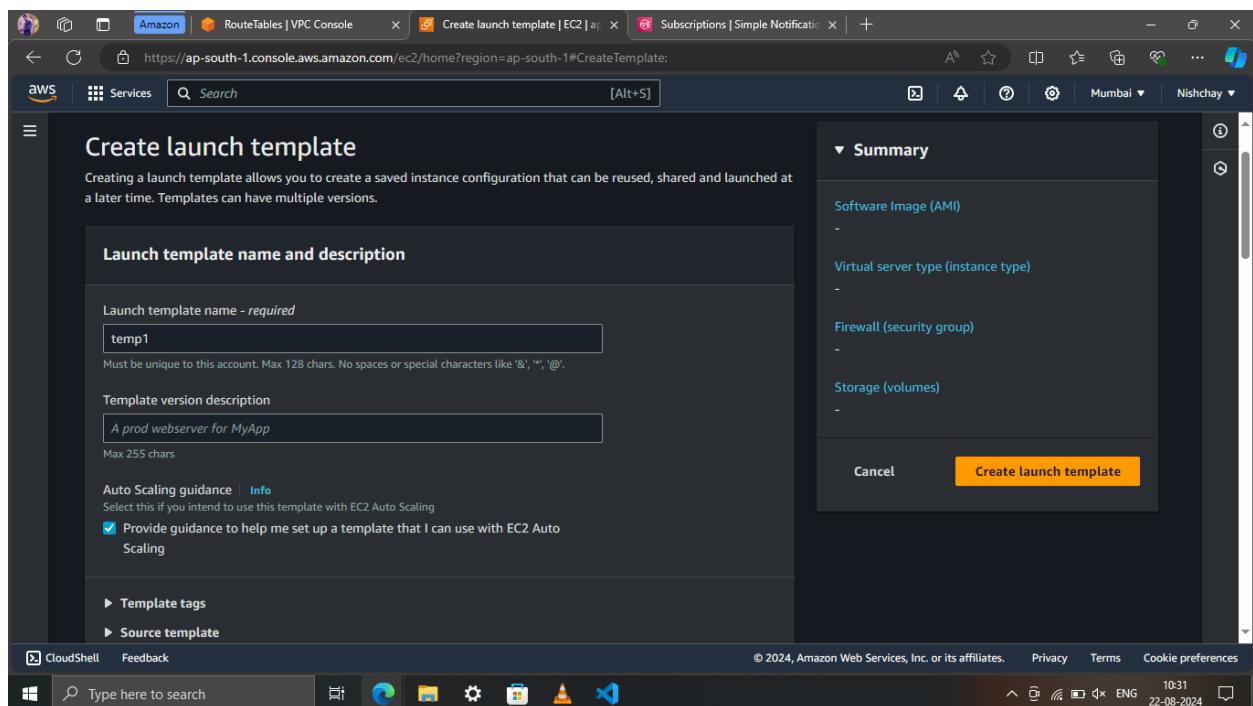
Subscriptions (1) Edit Delete Request confirmation Confirm subscription **Create subscription**

ID	Endpoint	Status	Protocol	Topic
Deleted	rt876043@gmail.c...	Confirmed	EMAIL	topic1

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences 10:29 22-08-2024

STEP 9: Create a Launch template

- Go to launch template section under in the EC2 dashboard.
- Click Create launch template
- Name the template choose AMI you created.
- Configure all settings
- Create launch template.



Amazon Machine Image (AMI)

image1
ami-056b5ef9dee509737
2024-08-22T04:55:54.000Z Virtualization: hvm ENA enabled: true Root device type: ebs

Description

-

Architecture AMI ID
x86_64 ami-056b5ef9dee509737

▼ Instance type [Info](#) | [Get advice](#)

Advanced

Cancel **Create launch template**

EC2 > Launch templates > Create launch template

Success
Successfully created [temp1\(lt-07d6f69ea82946f68\)](#).

Actions log

Next Steps

Launch an instance
With On-Demand Instances, you pay for compute capacity by the second (for Linux, with a minimum of 60 seconds) or by the hour (for all other operating systems) with no long-term commitments or upfront payments. Launch an On-Demand Instance from your launch template.

Launch Instance from this template

Create an Auto Scaling group from your template
Amazon EC2 Auto Scaling helps you maintain application availability and allows you to scale your Amazon EC2 capacity up or down automatically according to conditions you define. You can use Auto Scaling to help ensure that you are running your desired number of Amazon EC2 instances during demand spikes to maintain performance and decrease capacity during lulls to reduce costs.

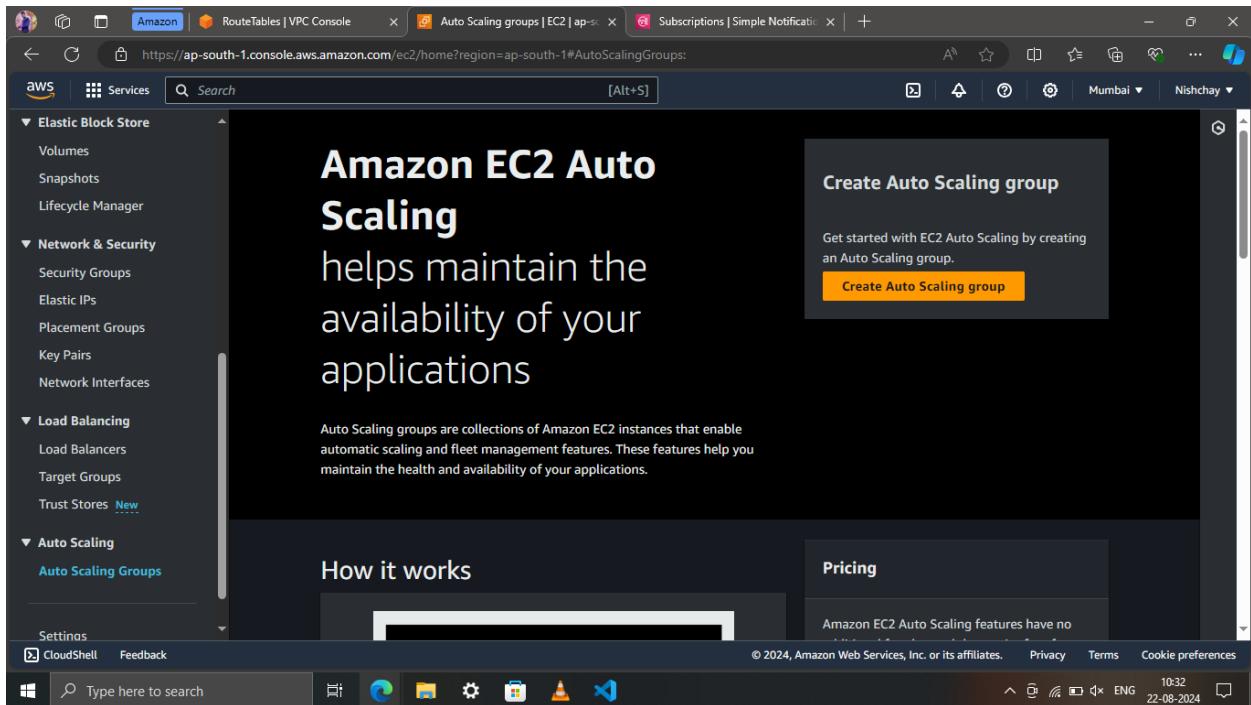
[Create Auto Scaling group](#)

Create Spot Fleet

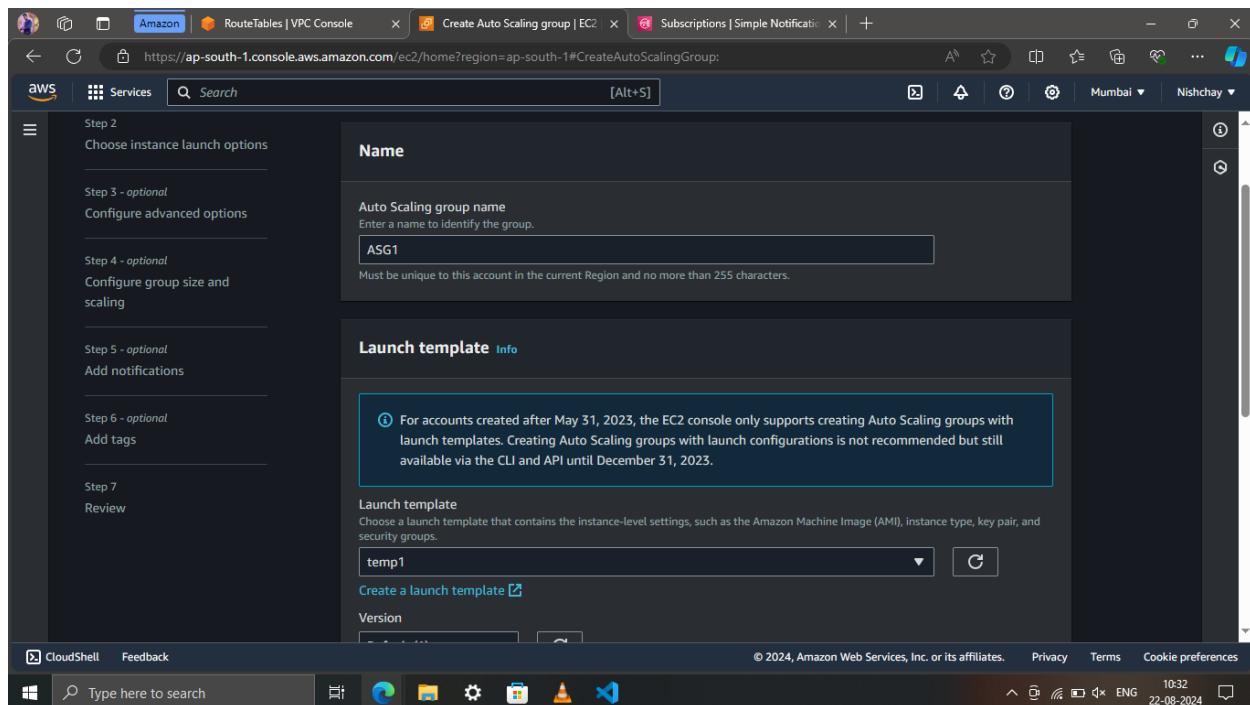
CloudShell Feedback Type here to search

STEP 10: Create an auto scaling group

- Go to the auto scaling groups section in the EC2 dashboard.
- Click create auto scaling group.

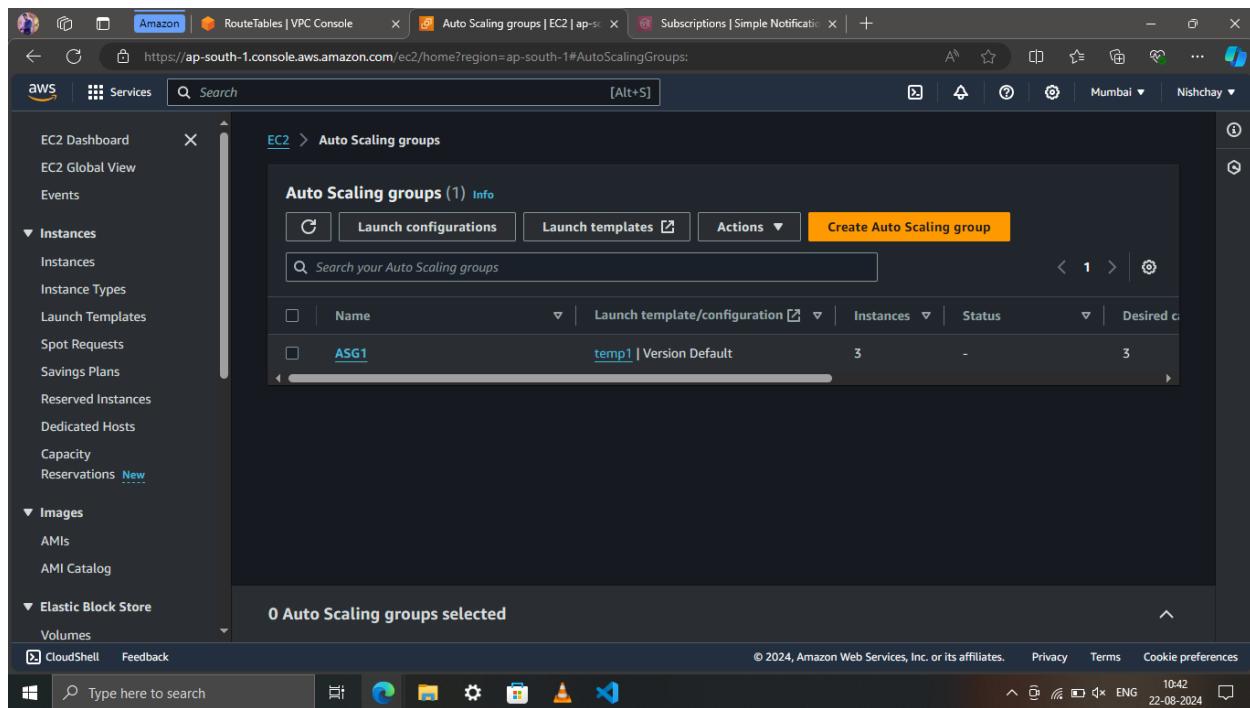


- Name the group choose the launch template you created, and select the desired VPC and subnets.
- Configure desired capacity, min/max instances, and scaling policies.
- Click Next to review and create the auto scaling group.



The screenshot shows the AWS EC2 Create Auto Scaling group wizard at Step 4: Configure advanced options - optional. The left sidebar lists steps from 1 to 7. The main content area is titled "Configure advanced options - optional". It includes a section for "Load balancing" with two options: "No load balancer" (radio button) and "Attach to an existing load balancer" (radio button). The "Attach to a new load balancer" option is selected, which is described as quickly creating a basic load balancer. Below this is a section for "Attach to a new load balancer" with a note to define a new load balancer for attachment.

The screenshot shows the AWS EC2 Create Auto Scaling group wizard at Step 5: Add notifications. The left sidebar lists steps from 1 to 7. The main content area is titled "Choose launch template". It shows a notification configuration for "Notification 1" using an SNS Topic named "topic1 (rt876043@gmail.com)". The "Event types" section is checked for "Launch", "Terminate", "Fail to launch", and "Fail to terminate". At the bottom, there are buttons for "Cancel", "Skip to review", "Previous", and "Next".



STEP 11: Set up a load balancer

- Go to the load balancer section in the EC2 dashboard
- Click create load balancer and choose application load balancer.

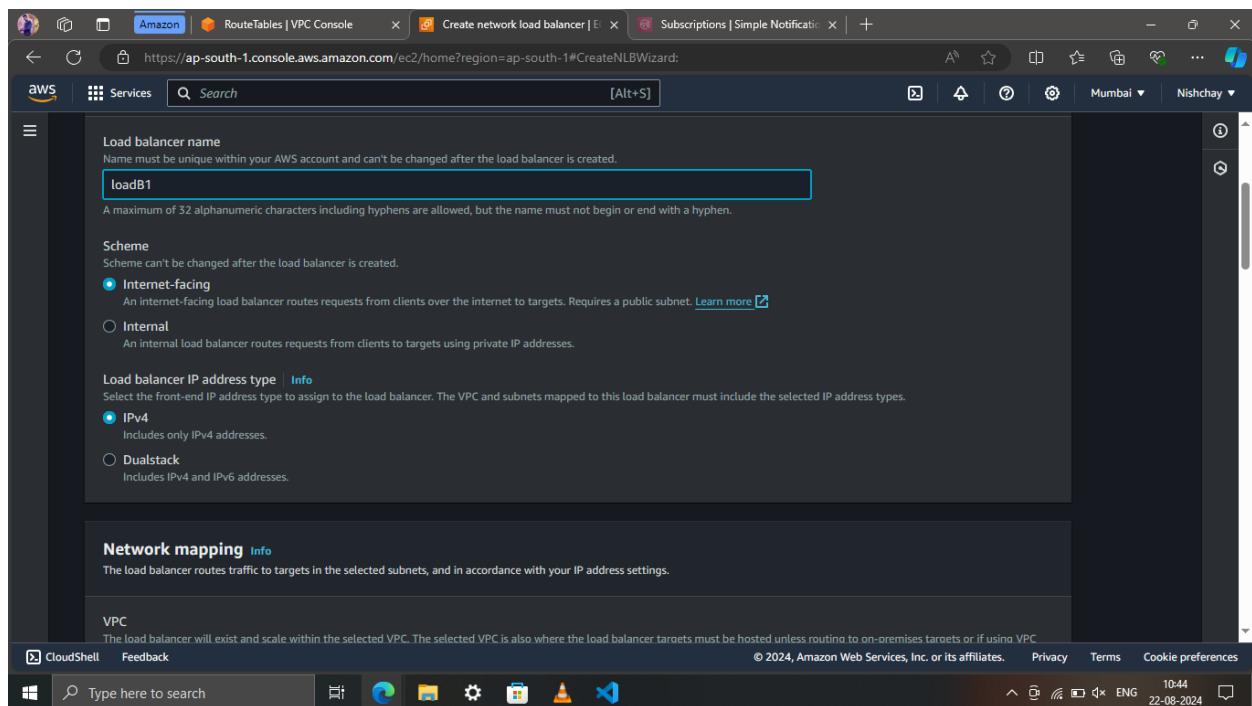
The screenshot shows the AWS Management Console interface for the EC2 service, specifically the Load Balancers section. The left sidebar contains navigation links for AMIs, Services, and various AWS products like Elastic Block Store, Network & Security, Load Balancing, Auto Scaling, and CloudShell. The main content area is titled "Load balancers" and includes a search bar, an "Actions" dropdown, and a prominent orange "Create load balancer" button. A message states "Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic." Below this is a table header with columns: Name, DNS name, State, VPC ID, and Availability Zones. A message at the bottom indicates "No load balancers" and "0 load balancers selected". A note says "Select a load balancer above."

The screenshot shows the AWS Services console with the URL <https://ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#SelectCreateELBWizard>. The main content area displays three load balancer types:

- Application Load Balancer**: Handles HTTP and HTTPS traffic, supporting Lambda functions, API Gateways, and Amazon EC2 instances.
- Network Load Balancer**: Handles TCP, UDP, and TLS traffic, supporting VPC endpoints, ALBs, and Amazon Lambda functions.
- Gateway Load Balancer**: Handles traffic for third-party virtual appliances supporting GENEVE, including AWS Lambda, Amazon S3, and AWS CloudFront.

Each section includes a detailed description and a "Choose" button.

- Name it, select the VPC, choose the subnets where the instances are running (typically private subnets).
- Configure the security group to allow traffic (HTTP port 80)
- Create a target group and register your EC2 instances.
- Review and create the load balancer.



Network mapping Info
The load balancer routes traffic to targets in the selected subnets, and in accordance with your IP address settings.

VPC
The load balancer will exist and scale within the selected VPC. The selected VPC is also where the load balancer targets must be hosted unless routing to on-premises targets or if using VPC peering. To confirm the VPC for your targets, view [target groups](#). For a new VPC, [create a VPC](#).

vpc1
vpc-04d20c35df6cef11
IPv4 VPC CIDR: 10.0.0.0/16

Mappings
Select one or more Availability Zones and corresponding subnets. Enabling multiple Availability Zones increases the fault tolerance of your applications. The load balancer routes traffic to targets in the selected Availability Zones only. Availability zones that are not supported by the load balancer or the VPC are not available for selection.

ap-south-1a (aps1-az1)

Security groups Info
A security group is a set of firewall rules that control the traffic to your load balancer. Select an existing security group, or you can [create a new security group](#).

Security groups - recommended
Security groups support on Network Load Balancers can only be enabled at creation by including at least one security group. You can change security groups after creation. The security groups

Basic configuration
Settings in this section can't be changed after the target group is created.

Instances

- Supports load balancing to instances within a specific VPC.
- Facilitates the use of [Amazon EC2 Auto Scaling](#) to manage and scale your EC2 capacity.

IP addresses

- Supports load balancing to VPC and on-premises resources.
- Facilitates routing to multiple IP addresses and network interfaces on the same instance.
- Offers flexibility with microservice based architectures, simplifying inter-application communication.
- Supports IPv6 targets, enabling end-to-end IPv6 communication, and IPv4-to-IPv6 NAT.

Lambda function

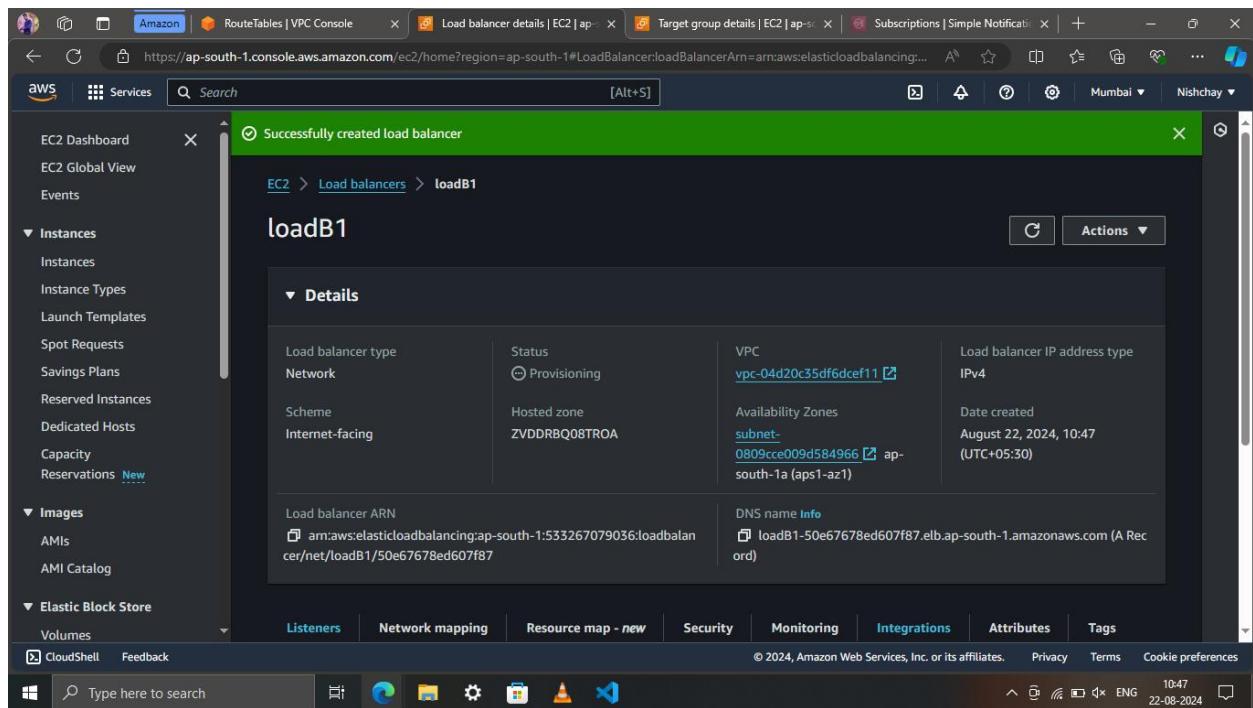
- Facilitates routing to a single Lambda function.
- Accessible to Application Load Balancers only.

Application Load Balancer

- Offers the flexibility for a Network Load Balancer to accept and route TCP requests within a specific VPC.
- Facilitates using static IP addresses and PrivateLink with an Application Load Balancer.

The screenshot shows the AWS Lambda console with the URL <https://ap-south-1.console.aws.amazon.com/lambda/home?region=ap-south-1#CreateTargetGroup>. The page is titled "Step 2 Create target group | EC2". The user has selected "TCP" as the protocol and "vpc-04d20c35df6dcef11" as the VPC. They have specified port 80 and chosen "Include as pending below". The "Review targets" section shows a table with one row: "No instances added yet". There are buttons for "Cancel", "Previous", and "Create target group". The browser status bar at the bottom indicates "CloudShell Feedback" and the date "22-08-2024".

The screenshot shows the AWS Lambda console with the URL <https://ap-south-1.console.aws.amazon.com/lambda/home?region=ap-south-1#CreateNLBWizard>. The page is titled "Target group details | EC2 | ap-south-1". A dropdown menu for "Listener TCP:80" is open, showing "Protocol: TCP", "Port: 80", and "Default action: Select a target group". A tooltip for "Create target" is visible. Below the dropdown, there is a section for "Listener tags - optional" with a "Create tag" button. At the bottom, there are buttons for "Add listener tag" and "Add listener". The browser status bar at the bottom indicates "CloudShell Feedback" and the date "22-08-2024".



We successfully created the load balancer.

- Auto scaling and load balancer: configure auto scaling to manage instances and distribute traffic using a load balancer.