

AWS PROJECT-3

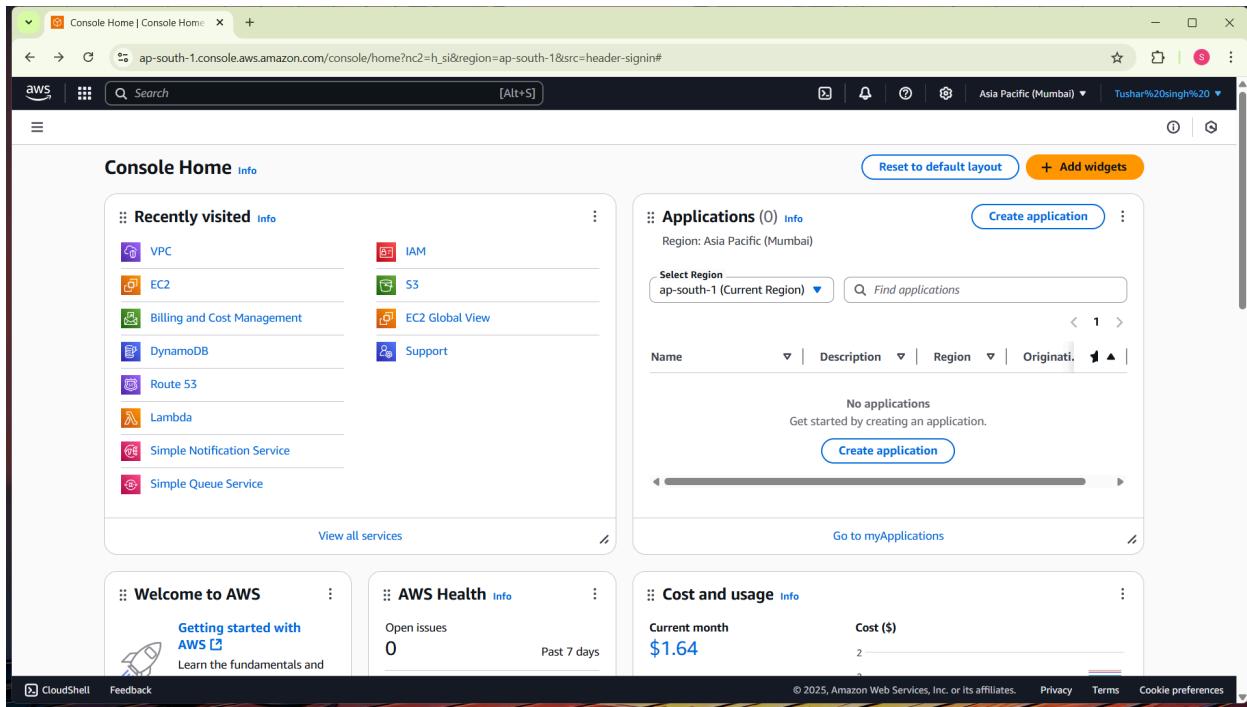
VPC (VIRTUAL PRIVATE CLOUD)

INTRODUCTION:

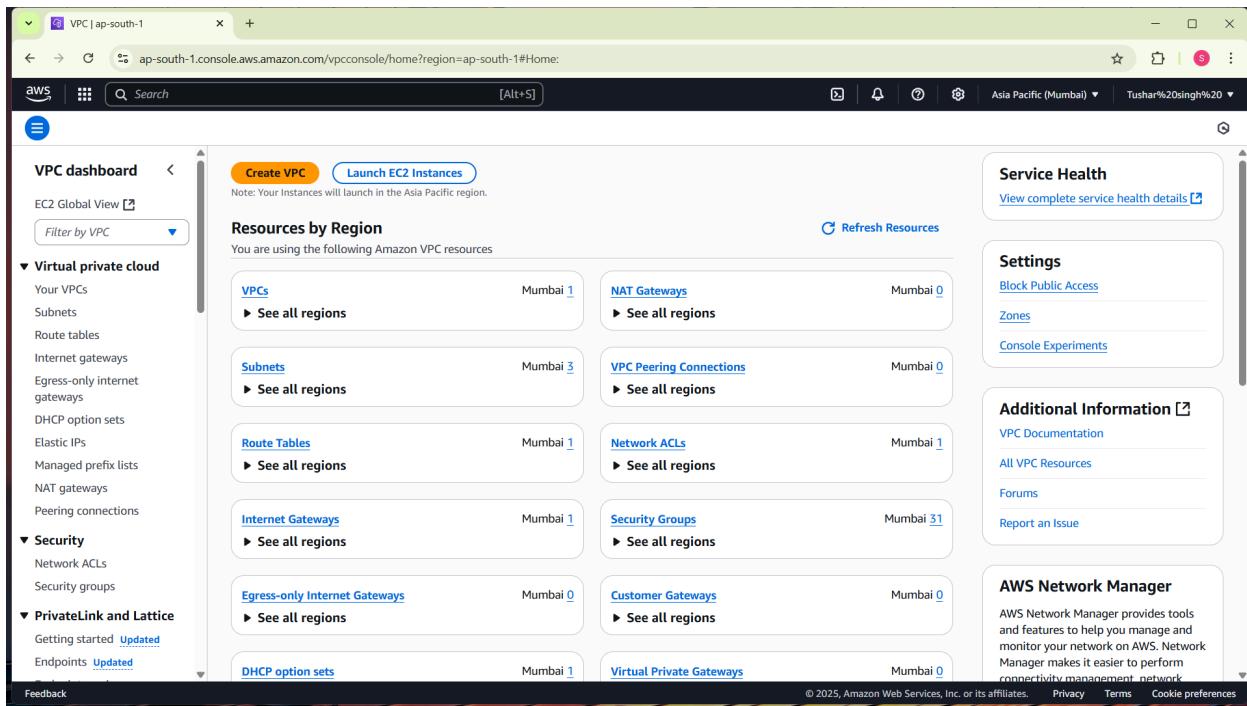
An Amazon Virtual Private Cloud (VPC) is a logically isolated section of the AWS cloud where you can launch AWS resources within a virtual network you define. It provides a way to customize your networking environment, including IP address ranges, subnets, route tables, and network gateways, essentially giving you control over your virtual network similar to a traditional data center.

HOW TO CREATE VPC:

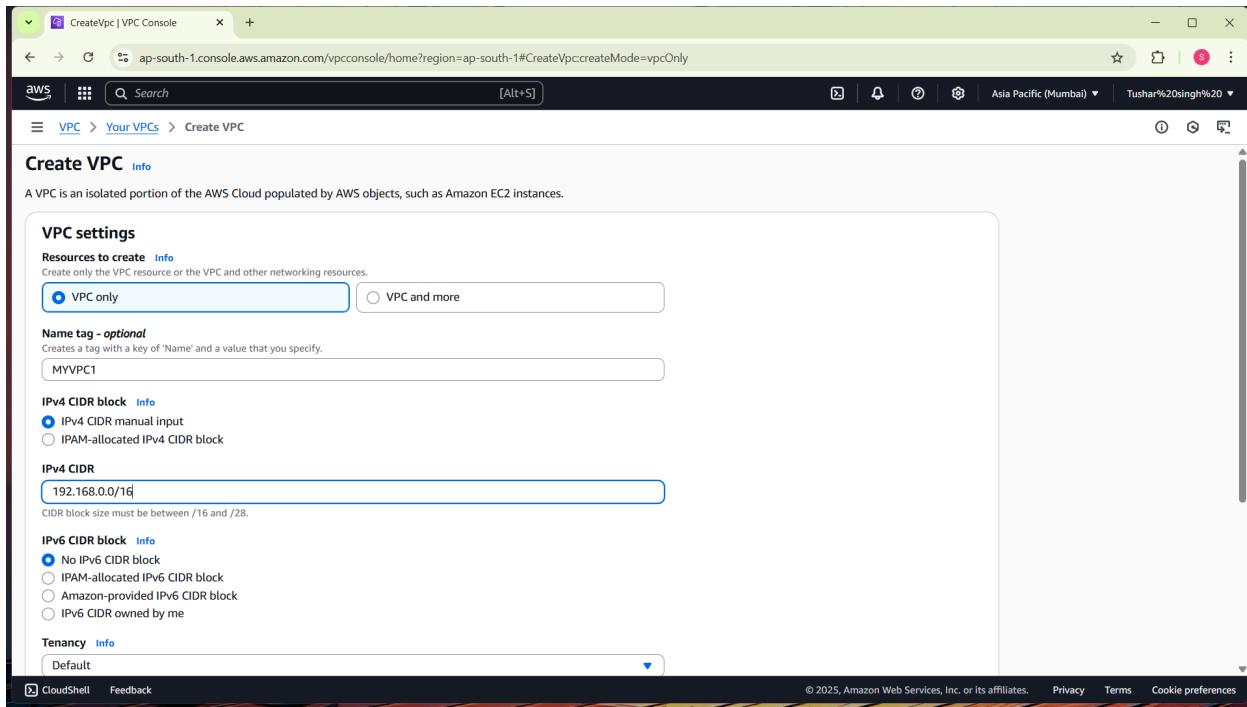
STEP 1:



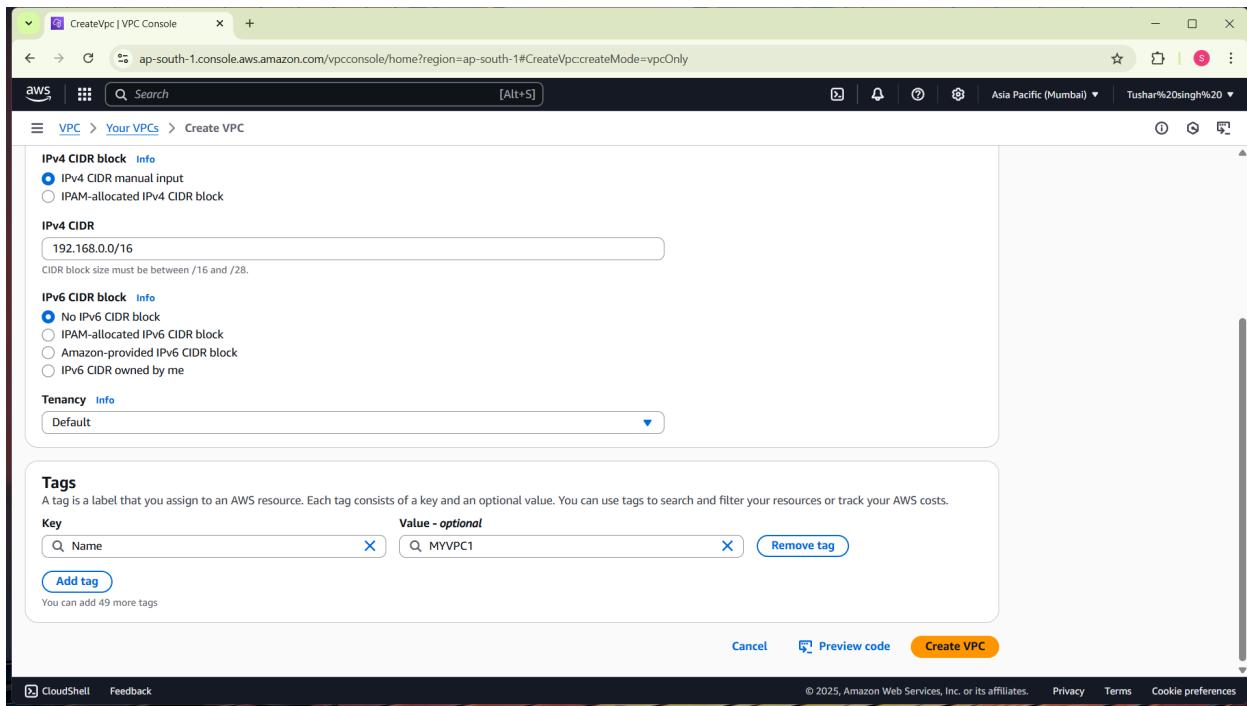
STEP2:



STEP3:



STEP4:



STEP5:

The screenshot shows the AWS VPC console interface. A success message at the top right states "You successfully created **vpc-019f549073a3ff7d3 / MYVPC1**". The main panel displays the "Details" tab for the newly created VPC, listing various configuration parameters such as VPC ID, State, Block Public Access, and DNS hostnames. Below the details, there's a "Resource map" section showing the network components associated with the VPC.

STEP6:

The screenshot shows the AWS VPC console interface with the "Your VPCs" section selected. It lists two VPCs: "vpc-0b5f73a7610a96de7" and "MYVPC1". The table includes columns for Name, VPC ID, State, Block Public Access, IPv4 CIDR, and IPv6 CIDR. A message at the bottom left says "Select a VPC above".

Name	VPC ID	State	Block Public...	IPv4 CIDR	IPv6 CIDR
-	vpc-0b5f73a7610a96de7	Available	Off	172.31.0.0/16	-
MYVPC1	vpc-019f549073a3ff7d3	Available	Off	192.168.0.0/16	-

STEP7:

The screenshot shows the AWS VPC Subnets console. On the left, there's a navigation sidebar with sections like VPC dashboard, EC2 Global View, Virtual private cloud (Your VPCs, Subnets, Route tables, Internet gateways, Egress-only internet gateways, DHCP option sets, Elastic IPs, Managed prefix lists, NAT gateways, Peering connections), Security (Network ACLs, Security groups), and PrivateLink and Lattice (Getting started, Endpoints). The main area is titled "Subnets (3) Info" and displays a table with three rows of subnet information. The columns are Name, Subnet ID, State, VPC, Block Public..., and IPv4 CIDR. The subnets listed are: subnet-008ef8bb0745c6b75 (Available, vpc-0b5f73a7610a96de7, Off, 172.31.32.0/24), subnet-0b09620f36ba8568a (Available, vpc-0b5f73a7610a96de7, Off, 172.31.16.0/24), and subnet-0d89367f3123f144f (Available, vpc-0b5f73a7610a96de7, Off, 172.31.0.0/24). A search bar at the top says "Find subnets by attribute or tag". At the bottom right, there are links for "Actions", "Create subnet", and "Last updated 2 minutes ago".

STEP8:

The screenshot shows the "Create subnet" wizard. The first step, "VPC", is completed, showing the VPC ID "vpc-019f549073a3ff7d3 (MYVPC1)". The next step, "Associated VPC CIDRs", shows the IPv4 CIDR "192.168.0.0/16". The third step, "Subnet settings", is currently selected. It has two sections: "Subnet 1 of 1" and "Availability Zone". In "Subnet 1 of 1", the "Subnet name" is set to "MYSUBNET1" and the "Availability Zone" is set to "No preference". The "Availability Zone" note says "Choose the zone in which your subnet will reside, or let Amazon choose one for you." The bottom of the screen shows standard AWS footer links: CloudShell, Feedback, Privacy, Terms, and Cookie preferences.

STEP9:

The screenshot shows the 'Create subnet' wizard in the AWS VPC console. The first step, 'Subnet details', is completed. The subnet is named 'MYSUBNET1'. The 'Availability Zone' dropdown is set to 'No preference'. The 'IPv4 CIDR block' dropdown is set to '192.168.0.0/16'. The 'IPv4 subnet CIDR block' dropdown is set to '192.168.0.0/24'. Under 'Tags - optional', there is one tag named 'Name' with the value 'MYSUBNET1'. At the bottom right are 'Cancel' and 'Create subnet' buttons.

STEP10:

The screenshot shows the 'Subnets' dashboard in the AWS VPC console. A success message at the top states 'You have successfully created 1 subnet: subnet-042f462f2e62c5352'. The main table displays one subnet: 'MYSUBNET1' (Subnet ID: subnet-042f462f2e62c5352, State: Available, VPC: vpc-019f549073a3ff7d5, Block Public: Off, IPv4 CIDR: 192.168.0.0/24). Below the table is a section titled 'Select a subnet'.

Name	Subnet ID	State	VPC	Block Public...	IPv4 CIDR
MYSUBNET1	subnet-042f462f2e62c5352	Available	vpc-019f549073a3ff7d5 MYV...	Off	192.168.0.0/24

STEP11:

The screenshot shows the AWS VPC Subnets console. A green success message at the top states: "You have successfully created 1 subnet: subnet-042f462f2e62c5352". Below this, a table lists four subnets, including the newly created one named "MYSUBNET1".

Name	Subnet ID	State	VPC	Block Public...	IPv4 CIDR
-	subnet-008ef8bb0745c6b75	Available	vpc-0b5f73a7610a96de7	Off	172.31.32.0/24
-	subnet-0b09620f36ba8568a	Available	vpc-0b5f73a7610a96de7	Off	172.31.16.0/24
-	subnet-0d89367f3123f144f	Available	vpc-0b5f73a7610a96de7	Off	172.31.0.0/20
MYSUBNET1	subnet-042f462f2e62c5352	Available	vpc-019f549073a3ff7d3 MYV...	Off	192.168.0.0/24

STEP12:

The screenshot shows the AWS EC2 search results page. The search term "EC2" is entered in the search bar. The results are categorized into Services, Features, and Resources.

- Services**:
 - EC2: Virtual Servers in the Cloud
 - EC2 Image Builder: A managed service to automate build, customize and deploy OS images
 - EC2 Global View: EC2 Global View provides a global dashboard and search functionality that lets you ...
- Features**:
 - Dashboard: EC2 feature
 - EC2 Instances: CloudWatch feature
 - AMIs: EC2 feature
- Resources**: / for a focused search

At the bottom left, there are "Were these results helpful?" buttons for "Yes" and "No".

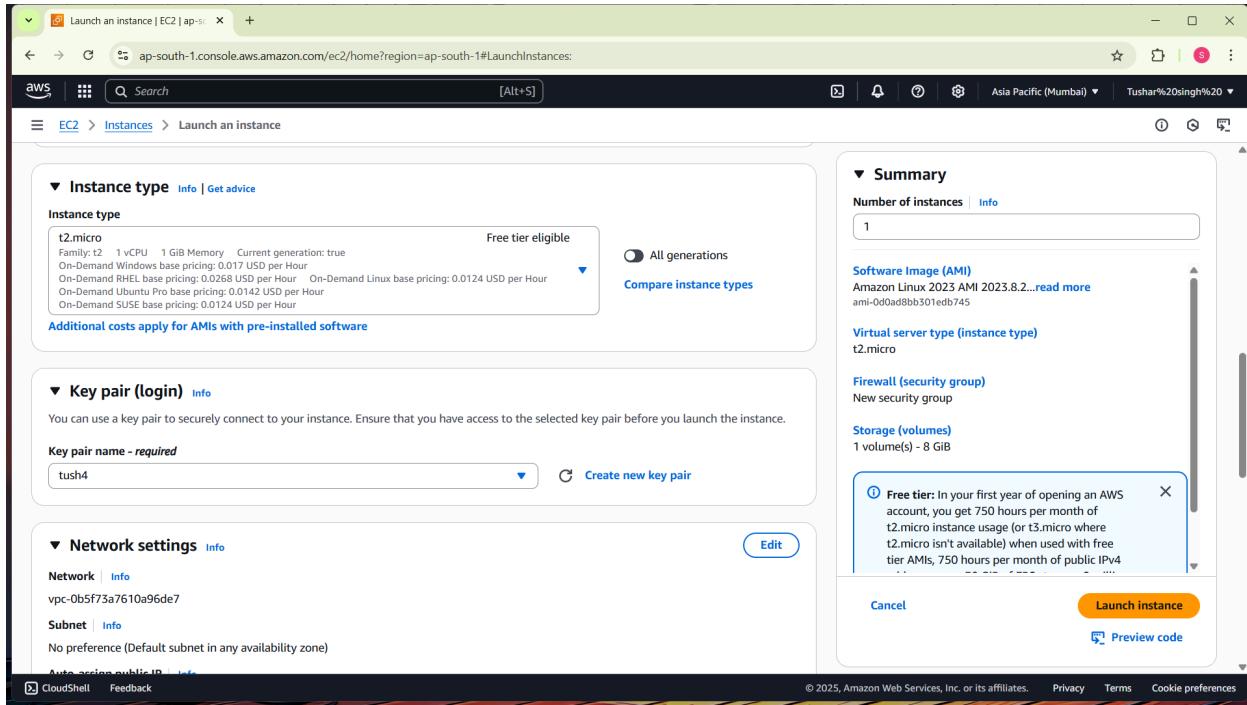
STEP13:

The screenshot shows the AWS EC2 home page. The left sidebar contains a navigation menu with sections like EC2, Instances, Images, Elastic Block Store, and Network & Security. The main content area features a large heading "Amazon Elastic Compute Cloud (EC2)" and sub-headings "Create, manage, and monitor virtual servers in the cloud." Below this, there's a section titled "Benefits and features" with a sub-section "EC2 offers ultimate scalability and control". To the right, there's a "Launch a virtual server" box with "Launch instance" and "View dashboard" buttons, and a "Get started" box with "Get started walkthroughs" and "Get started tutorial" links.

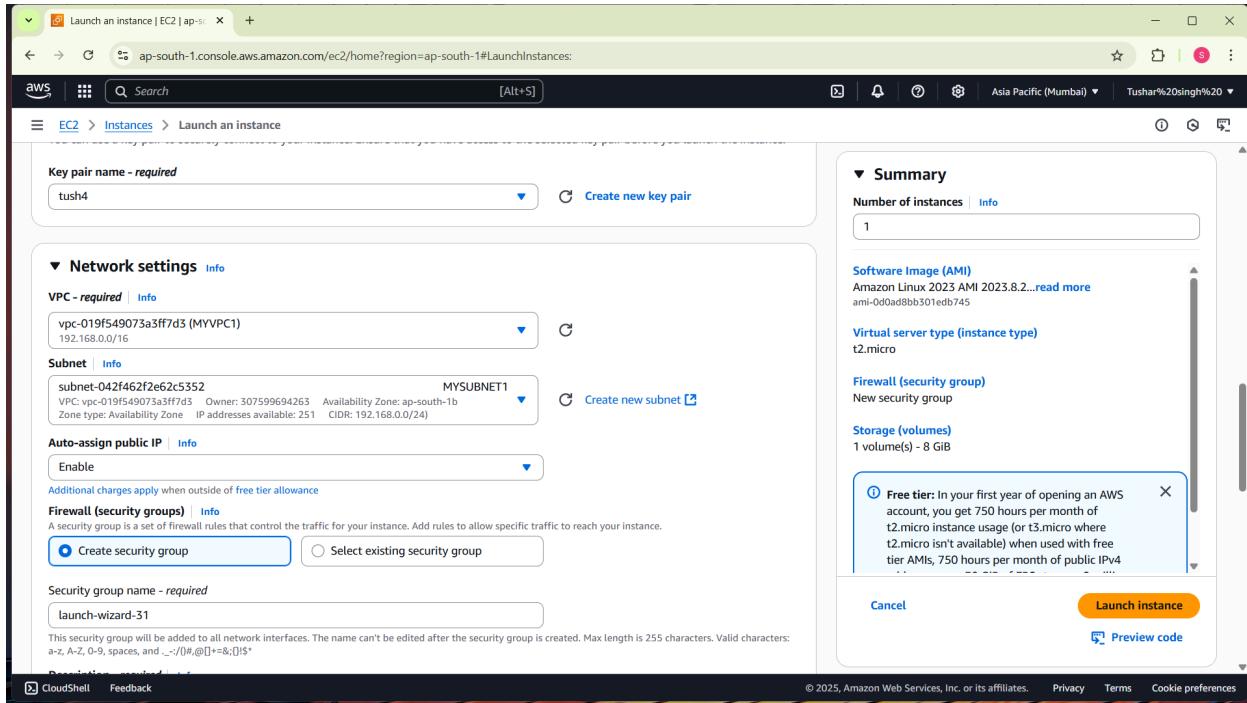
STEP14:

The screenshot shows the "Launch an instance" wizard. Step 1: Set instance details. It includes fields for "Name and tags" (Name: VPCPROJ), "Application and OS Images (Amazon Machine Image)" (Search bar, Recents: Amazon Linux, macOS, Ubuntu, Windows, Red Hat, SUSE Linux, Debian, Quick Start tab selected), and "Summary" (Number of instances: 1, Software Image (AMI): Amazon Linux 2023 AMI 2023.8.2..., Virtual server type (instance type): t2.micro, Firewall (security group): New security group, Storage (volumes): 1 volume(s) - 8 GiB). A callout box highlights the "Free tier" information: "In your first year of opening an AWS account, you get 750 hours per month of t2.micro instance usage (or t3.micro where t2.micro isn't available) when used with free tier AMIs, 750 hours per month of public IPv4...". At the bottom are "Cancel", "Launch instance", and "Preview code" buttons.

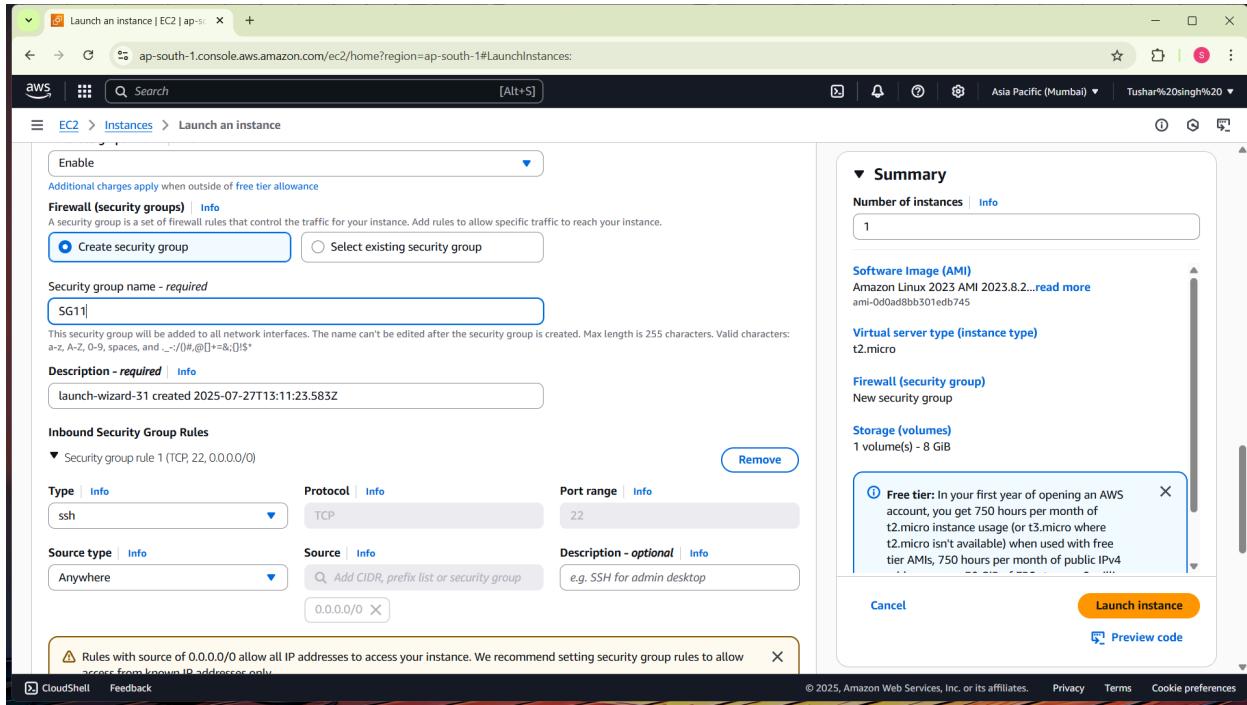
STEP15:



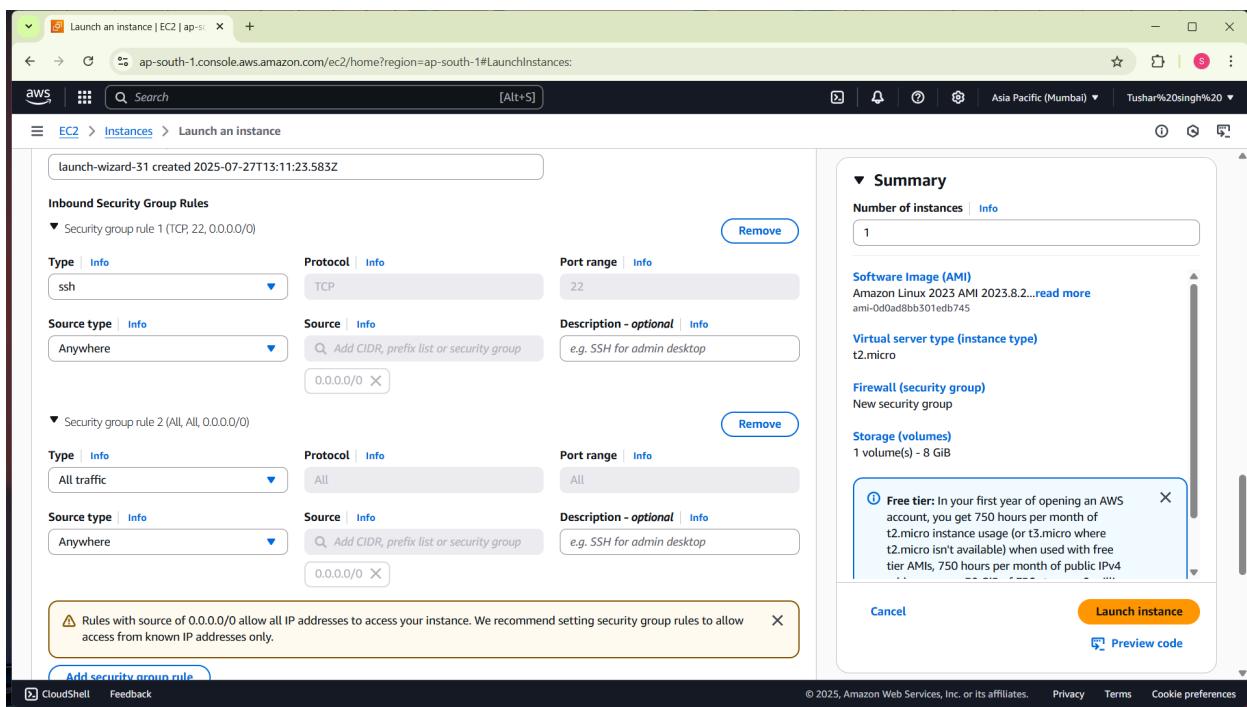
STEP16:



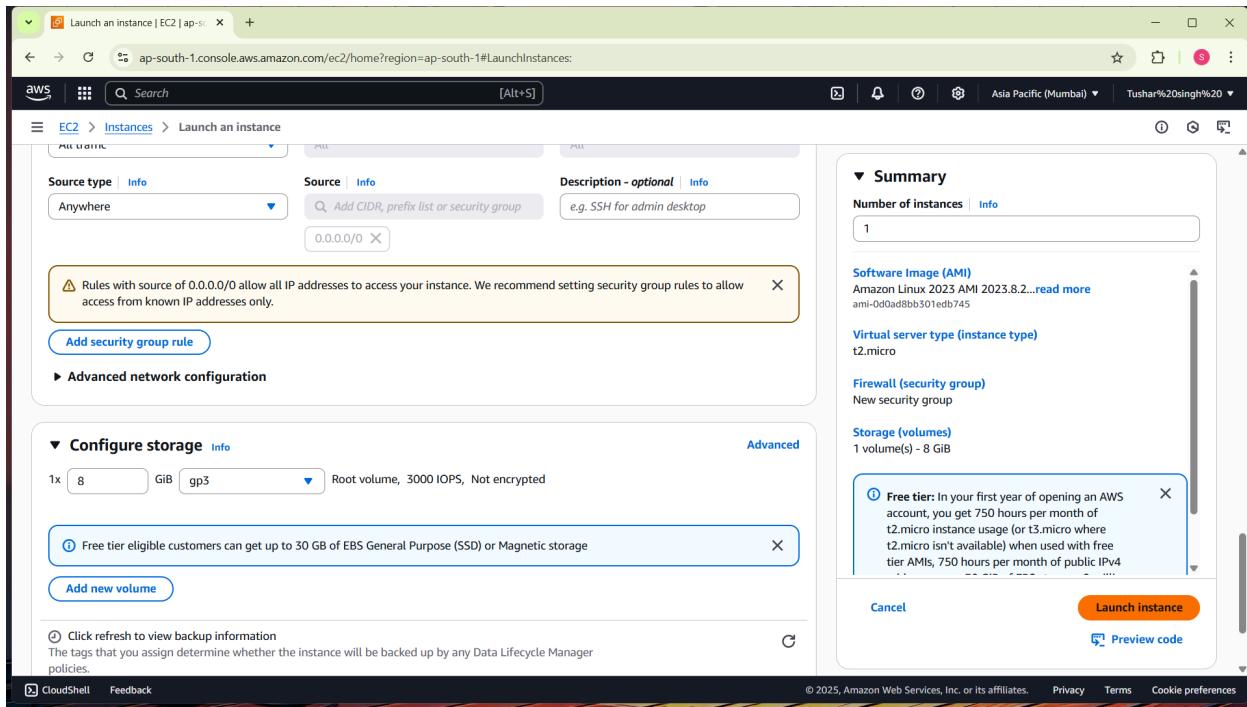
STEP17:



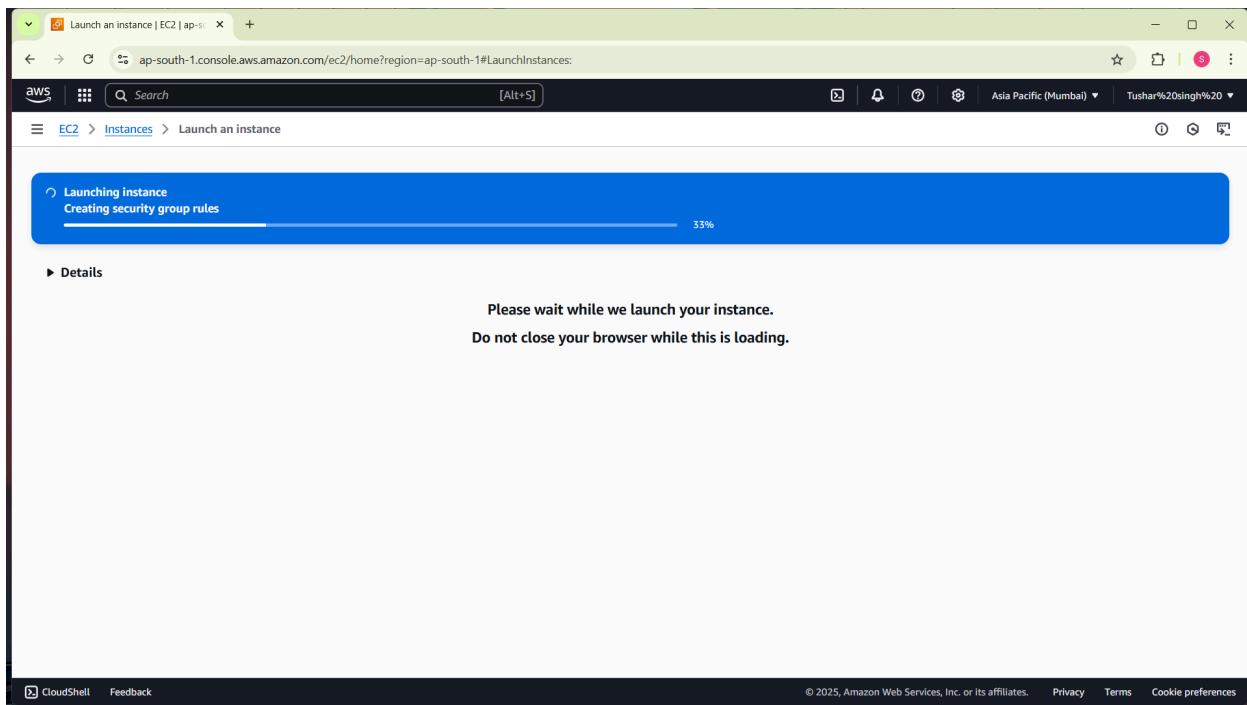
STEP18:



STEP19:



STEP20:



STEP21:

The screenshot shows the AWS VPC RouteTables console. On the left, there's a navigation sidebar with sections like VPC dashboard, EC2 Global View, Virtual private cloud (Your VPCs, Subnets, Route tables selected), Security, PrivateLink and Lattice, and CloudShell/Feedback. The main area displays a table titled "Route tables (2) Info" with columns: Name, Route table ID, Explicit subnet associa..., Edge associations, Main, and VPC. Two entries are listed: "rtb-0a9ad9228fc36878" and "rtb-06bd1f3237c387674", both associated with "vpc-019f549073a3ff7d3 | MYVPC". A search bar at the top says "Find route tables by attribute or tag". Below the table, a section titled "Select a route table" is visible.

STEP22:

The screenshot shows the "Create route table" wizard. The title bar says "VPC | ap-south-1". The page header includes the URL "ap-south-1.console.aws.amazon.com/vpcconsole/home?region=ap-south-1#CreateRouteTable:" and the AWS logo. The main content area has a heading "Create route table" with a "Info" link. It explains that a route table specifies how packets are forwarded between subnets, the internet, and VPN connections. There are two main sections: "Route table settings" and "Tags".

Route table settings

- Name - optional**: A text input field containing "ROUTTABLE1".
- VPC**: A dropdown menu showing "vpc-019f549073a3ff7d3 (MYVPC1)".

Tags

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

Key	Value - optional
<input type="text" value="Name"/>	<input type="text" value="ROUTTABLE1"/> (X) Remove

You can add 49 more tags.

At the bottom right are "Cancel" and "Create route table" buttons.

STEP23:

The screenshot shows the AWS VPC console interface. The left sidebar is expanded, showing categories like Virtual private cloud, Security, and PrivateLink and Lattice. The main content area displays a success message: "Route table rtb-0d7ea3e6fead8a49a | ROUTTABEL1 was created successfully." Below this, the details for the newly created route table are shown, including its ID (rtb-0d7ea3e6fead8a49a), VPC (vpc-019f549073a3ff7d3 | MYVPC), and owner ID (307599694263). The "Routes" tab is selected, showing one route entry: Destination 192.168.0.0/16, Target local, Status Active, and Propagated No.

STEP24:

The screenshot shows the AWS VPC console interface, specifically the Route tables section. The left sidebar is expanded. The main content area displays a table of route tables, with a success message at the top: "Route table rtb-0d7ea3e6fead8a49a | ROUTTABEL1 was created successfully." The table includes columns for Name, Route table ID, Explicit subnet associations, Edge associations, Main, and VPC. The table lists three entries: an unnamed route table with ID rtb-0a9ad9228fc3b36878, another unnamed route table with ID rtb-06bd1f3237c387674, and the newly created ROUTTABEL1 with ID rtb-0d7ea3e6fead8a49a. A "Create route table" button is visible at the top right of the table area.

STEP25:

The screenshot shows the AWS VPC Internet gateways console. On the left, there's a navigation sidebar with sections like VPC dashboard, EC2 Global View, Virtual private cloud (Your VPCs, Subnets, Route tables, Internet gateways, Egress-only internet gateways, DHCP option sets, Elastic IPs, Managed prefix lists, NAT gateways, Peering connections), Security (Network ACLs, Security groups), and PrivateLink and Lattice (Getting started, Endpoints). The main area is titled "Internet gateways (1) info" and displays a table with one row. The table columns are Name, Internet gateway ID, State, VPC ID, and Owner. The single entry is "igw-02832816b4b3389c4" with State "Attached", VPC ID "vpc-0b5f73a7610a96de7", and Owner "307599694263". Below the table, a message says "Select an internet gateway above".

STEP26:

The screenshot shows the "Create internet gateway" wizard. The title bar says "Create internet gateway" and "Info". The main content area is titled "Internet gateway settings" and contains a "Name tag" section where "MYGATEWAY" is entered into a text input field. Below this is a "Tags - optional" section where a single tag "Name: MYGATEWAY" is defined. At the bottom right are "Cancel" and "Create internet gateway" buttons.

STEP27:

The screenshot shows the AWS VPC console in the 'Internet gateways' section. A success message at the top states: 'The following internet gateway was created: igw-0ca1fc2eea9170c1c - MYGATEWAY. You can now attach to a VPC to enable the VPC to communicate with the internet.' Below this, the 'igw-0ca1fc2eea9170c1c / MYGATEWAY' card displays details: Internet gateway ID (igw-0ca1fc2eea9170c1c), State (Detached), VPC ID (-), and Owner (307599694263). The 'Tags' section contains a single tag: Name (MYGATEWAY). On the left sidebar, the 'Virtual private cloud' section is expanded, showing options like 'Your VPCs', 'Subnets', 'Route tables', and 'Internet gateways'.

STEP28:

The screenshot shows the 'Attach to VPC' dialog box. At the top, a message says: 'The following internet gateway was created: igw-0ca1fc2eea9170c1c - MYGATEWAY. You can now attach to a VPC to enable the VPC to communicate with the internet.' Below this, the 'Attach to VPC (igw-0ca1fc2eea9170c1c)' section has a sub-section titled 'VPC'. It instructs the user to 'Attach an internet gateway to a VPC to enable the VPC to communicate with the internet. Specify the VPC to attach below.' Under 'Available VPCs', there is a search bar containing 'vpc-019f549073a3ff7d3'. At the bottom right of the dialog are 'Cancel' and 'Attach internet gateway' buttons.

STEP29:

The screenshot shows the AWS VPC console with the URL ap-south-1.console.aws.amazon.com/vpcconsole/home?region=ap-south-1#InternetGateways. A success message at the top states: "Internet gateway igw-0ca1fc2eea9170c1c successfully attached to vpc-019f549073a3ff7d3". The main pane displays the details for the Internet gateway "igw-0ca1fc2eea9170c1c / MYGATEWAY". The "Details" tab is selected, showing the Internet gateway ID (igw-0ca1fc2eea9170c1c), State (Attached), VPC ID (vpc-019f549073a3ff7d3 | MYVPC), and Owner (307599694263). A "Tags" section lists a single tag: Name (MYGATEWAY). The left sidebar shows the navigation menu for VPC, including "Virtual private cloud" (Your VPCs, Subnets, Route tables, Internet gateways, Egress-only internet gateways, DHCP option sets, Elastic IPs, Managed prefix lists, NAT gateways, Peering connections), "Security" (Network ACLs, Security groups), and "PrivateLink and Lattice" (Getting started, Endpoints).

STEP30:

The screenshot shows the AWS VPC console with the URL ap-south-1.console.aws.amazon.com/vpcconsole/home?region=ap-south-1#RouteTables. The "Route tables" section is displayed, showing three route tables: rtb-0a9ad9228fcbb36878, rtb-06bd1f3237c387674, and RTTABLE1. The "RTTABLE1" row is selected, indicated by a blue border. The right pane shows the details for the selected route table "rtb-0d7ea3e6fead8a49a / RTTABLE1". The "Details" tab is selected, showing the Route table ID (rtb-0d7ea3e6fead8a49a), Main (No), Owner ID (307599694263), and Explicit subnet associations (None). The left sidebar shows the navigation menu for VPC, including "Virtual private cloud" (Your VPCs, Subnets, Route tables), "Security" (Network ACLs, Security groups), and "PrivateLink and Lattice" (Getting started, Endpoints).

STEP31:

The screenshot shows the AWS VPC Route Tables console. On the left, there's a navigation sidebar with sections like VPC dashboard, EC2 Global View, Virtual private cloud, Security, and PrivateLink and Lattice. The main area displays a table titled "Route tables (1/3) Info" with three rows. The first two rows are unselected, while the third row, "ROUTETABLE1", is selected and highlighted with a blue border. A context menu is open over this row, showing options such as "View details", "Set main route table", "Edit subnet associations", "Edit edge associations", "Edit route propagation", "Edit routes" (which is currently selected), "Manage tags", and "Delete route table". Below the table, a detailed view for "rtb-0d7ea3e6fead8a49a / ROUTETABLE1" is shown, with tabs for Details, Routes, Subnet associations, Edge associations, Route propagation, and Tags. The "Details" tab is selected, displaying information like Route table ID, Main status (No), Owner ID, and Explicit subnet associations.

STEP32:

The screenshot shows the "Edit routes" interface for the selected route table. The top navigation bar indicates the URL is ap-south-1.console.aws.amazon.com/vpcconsole/home?region=ap-south-1#EditRoutes:RouteTableId=rtb-0d7ea3e6fead8a49a. The main content area is titled "Edit routes" and contains a table with columns: Destination, Target, Status, and Propagated. There are two entries: one for "192.168.0.0/16" targeting "local" (Status: Active, Propagated: No) and another for "0.0.0.0/0" targeting "Internet Gateway" (Status: Active, Propagated: No). A search bar at the bottom of the table allows for adding new routes. At the bottom right, there are "Cancel", "Preview", and "Save changes" buttons.

STEP33:

VPC dashboard < 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 NAT gateways Peering connections Security Network ACLs Security groups PrivateLink and Lattice Getting started Updated Endpoints Updated

CloudShell Feedback

Updated routes for rtb-0d7ea3e6feed8a49a / ROUTTABEL1 successfully

rtb-0d7ea3e6feed8a49a / ROUTTABEL1

Details Info

Route table ID rtb-0d7ea3e6feed8a49a	Main No	Explicit subnet associations -	Edge associations -
VPC vpc-019f549073a3ff7d3 MYVPC1	Owner ID 307599694263		

Routes (2)

Destination	Target	Status	Propagated
0.0.0.0/0	igw-0ca1fc2eea9170c1c	Active	No
192.168.0.0/16	local	Active	No

STEP34:

Instances | EC2 | ap-south-1 EC2 Instance Connect | ap-south-1

CloudShell Feedback

i-09462c3c4591bc09b (VPCPROJ)

PublicIPs: 3.108.219.234 PrivateIPs: 192.168.0.142

Establishing Connection ...

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STEP35:

The screenshot shows the AWS VPC Route Tables console. On the left, there's a navigation sidebar with sections like VPC dashboard, EC2 Global View, Virtual private cloud, Security, and PrivateLink and Lattice. The main area is titled "Route tables (1/3)" and shows a table with three rows. The first two rows are collapsed, and the third row, "ROUTTABLE1", is expanded. The expanded view shows the route table ID "rtb-0d7ea3e6fead8a49a". Below this, under "Explicit subnet associations (0)", it says "No subnet associations" and "You do not have any subnet associations." At the top right of the main area, there's a "Create route table" button.

STEP36:

The screenshot shows the "Edit subnet associations" dialog for the route table "rtb-0d7ea3e6fead8a49a". The title bar says "Edit subnet associations" and "Change which subnets are associated with this route table.". The "Available subnets (1/1)" section shows one subnet: "MYSUBNET1" with Subnet ID "subnet-042f462f2e62c5352" and IPv4 CIDR "192.168.0.0/24". This subnet is selected, indicated by a blue border around the row. In the "Selected subnets" section, the same subnet is listed with a blue border. At the bottom right, there are "Cancel" and "Save associations" buttons.

STEP37:

The screenshot shows the 'Edit routes' page for a specific route table. There are two entries listed:

Destination	Target	Status	Propagated
192.168.0.0/16	local	Active	No
0.0.0.0/0	Internet Gateway	Active	No

Buttons at the bottom include 'Add route', 'Remove', 'Cancel', 'Preview', and 'Save changes'.

STEP38:

The screenshot shows an EC2 Instance Connect session. A terminal window displays the following command and output:

```
[ec2-user@ip-192-168-0-142 ~]$ sudo su
[root@ip-192-168-0-142 ec2-user]# ping 8.8.8.8
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.
64 bytes from 8.8.8.8: icmp_seq=1 ttl=114 time=1.24 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=114 time=1.27 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=114 time=1.31 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=114 time=1.43 ms
64 bytes from 8.8.8.8: icmp_seq=5 ttl=114 time=1.37 ms
64 bytes from 8.8.8.8: icmp_seq=6 ttl=114 time=1.27 ms
64 bytes from 8.8.8.8: icmp_seq=7 ttl=114 time=1.32 ms
64 bytes from 8.8.8.8: icmp_seq=8 ttl=114 time=1.32 ms
64 bytes from 8.8.8.8: icmp_seq=9 ttl=114 time=1.38 ms
64 bytes from 8.8.8.8: icmp_seq=10 ttl=114 time=1.28 ms
64 bytes from 8.8.8.8: icmp_seq=11 ttl=114 time=0.766 ms
```

Below the terminal, a summary box shows the instance ID and network details:

i-09462c3c4591bc09b (VPCPROJ)
PublicIPs: 3.108.219.234 PrivateIPs: 192.168.0.142

STEP39:

The screenshot shows the AWS EC2 Instances page. On the left, there's a navigation sidebar with options like Dashboard, EC2 Global View, Events, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images (AMIs, AMI Catalog), Elastic Block Store (Volumes, Snapshots, Lifecycle Manager), and Network & Security. The main content area displays a table of instances. One instance is selected: **VPCPROJ** (Instance ID: i-09462c3c4591bc09b). The instance is **Running** (Status check: 2/2 checks passed) and has an **t2.micro** instance type. It is located in the **ap-south-1b** Availability Zone. The Public IPv4 address is 3.108.219.234 and the Private IP DNS name is ip-192-168-0-142.ap-south-1.compute.internal. A context menu is open over the instance, showing options: Stop instance, Start instance, Reboot instance, Hibernate instance, and Terminate (delete) instance. The 'Terminate (delete) instance' option is highlighted.

STEP40:

The screenshot shows the same AWS EC2 Instances page as before, but now a confirmation dialog is open. The dialog title is **Terminate (delete) instance**. It contains a warning message: "⚠️ On an EBS-backed instance, the default action is for the root EBS volume to be deleted when the instance is terminated. Storage on any local drives will be lost." Below the message, it asks, "Are you sure you want to terminate these instances?" There is a table showing the instance details: Instance ID (i-09462c3c4591bc09b), Termination protection (Disabled), and Public IPv4 address (3.108.219.234). At the bottom of the dialog, there are two buttons: **Cancel** and **Terminate (delete)**.

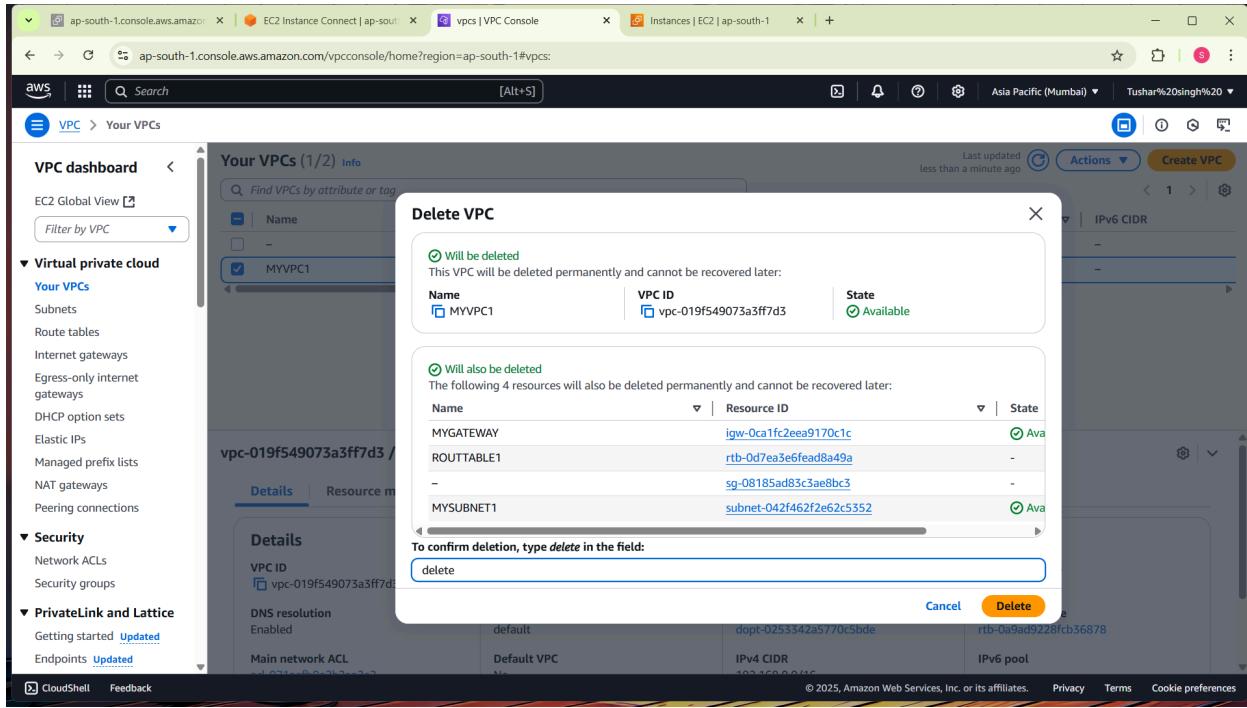
STEP41:

The screenshot shows the AWS EC2 Instances page. A green success message at the top states: "Successfully initiated termination (deletion) of i-09462c3c4591bc09b". The main table lists one instance: "VPCPROJ" (i-09462c3c4591bc09b), which is terminated and of type t2.micro. The "Actions" dropdown menu for this instance includes options like "View alarms", "Launch instances", and "Delete".

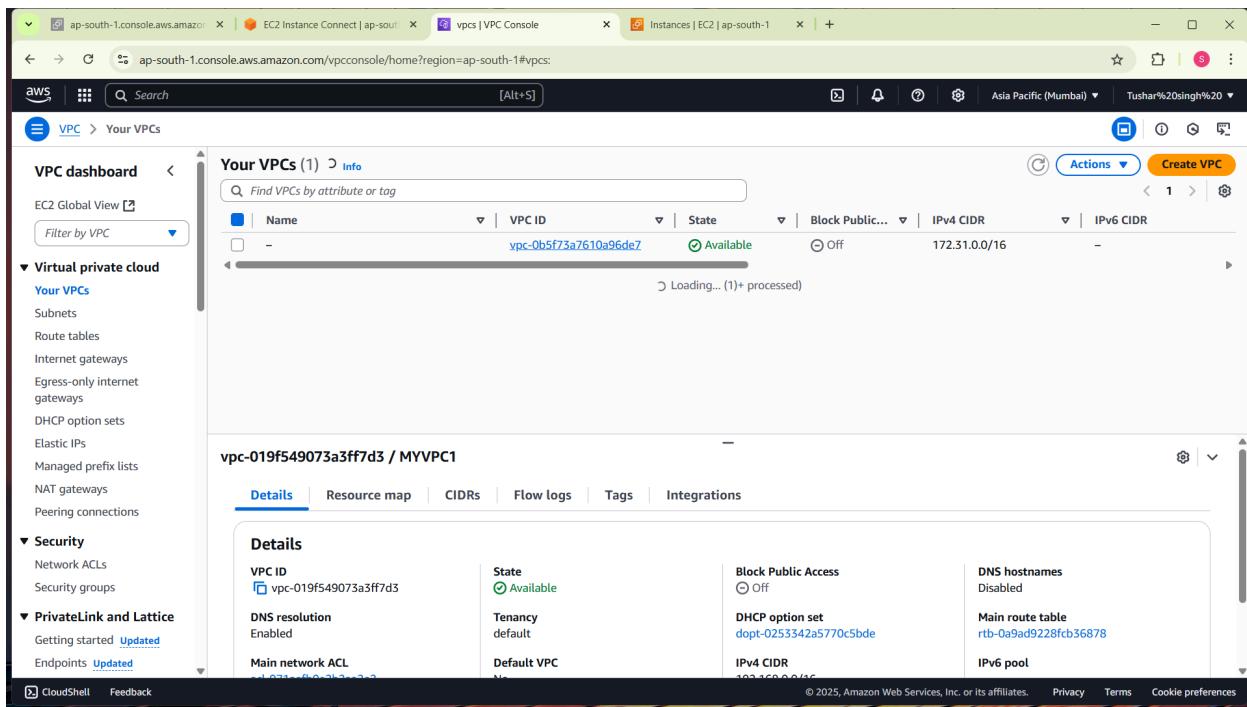
STEP42:

The screenshot shows the AWS VPC Console. In the "Your VPCs" section, a new VPC named "MYVPC1" (with VPC ID: "vpc-019f549073a3ff7d3") is listed as available. A context menu is open over this VPC, showing options: "Create default VPC", "Create flow log", "Edit VPC settings", "Edit CIDRs", "Manage middlebox routes", "Manage tags", and "Delete VPC".

STEP43:



STEP44:



THANKYOU