

CLOUD ESSENTIAL (NAAN MUDHALVAN)

DONE BY:

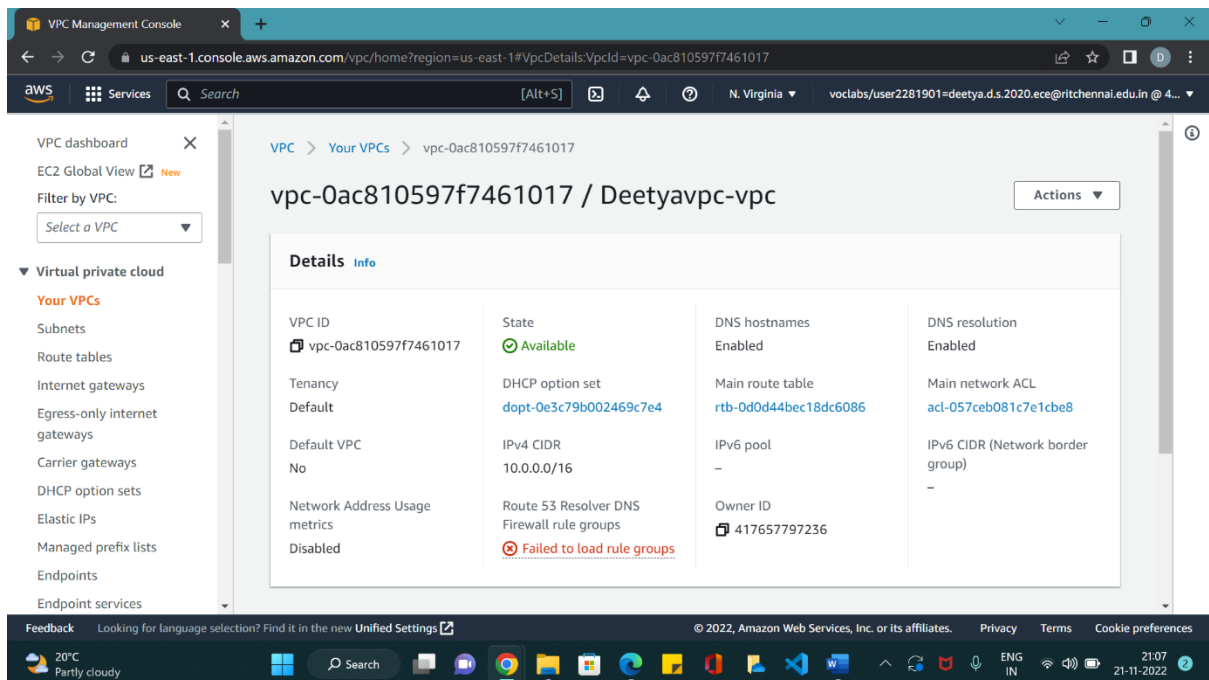
D.S. DEETYA

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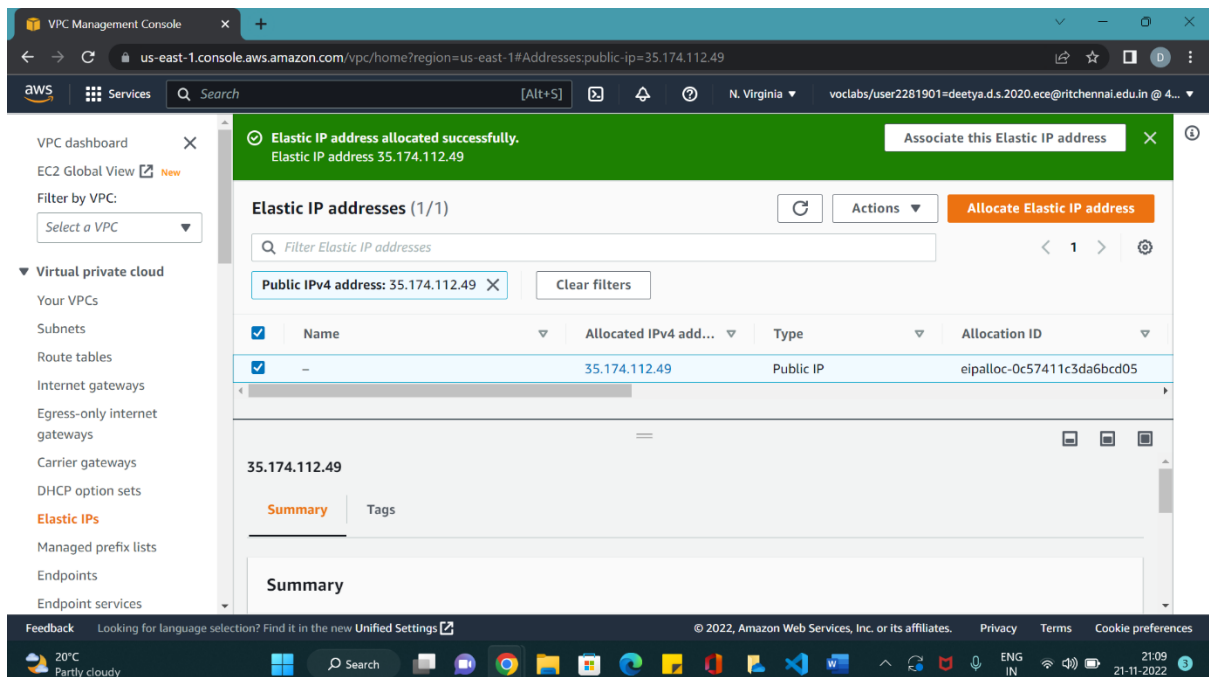
ECE DEPARTMENT

III YEAR RIT

I. Create an Amazon VPC using the VPC wizard, and it should be displayed on the dashboard

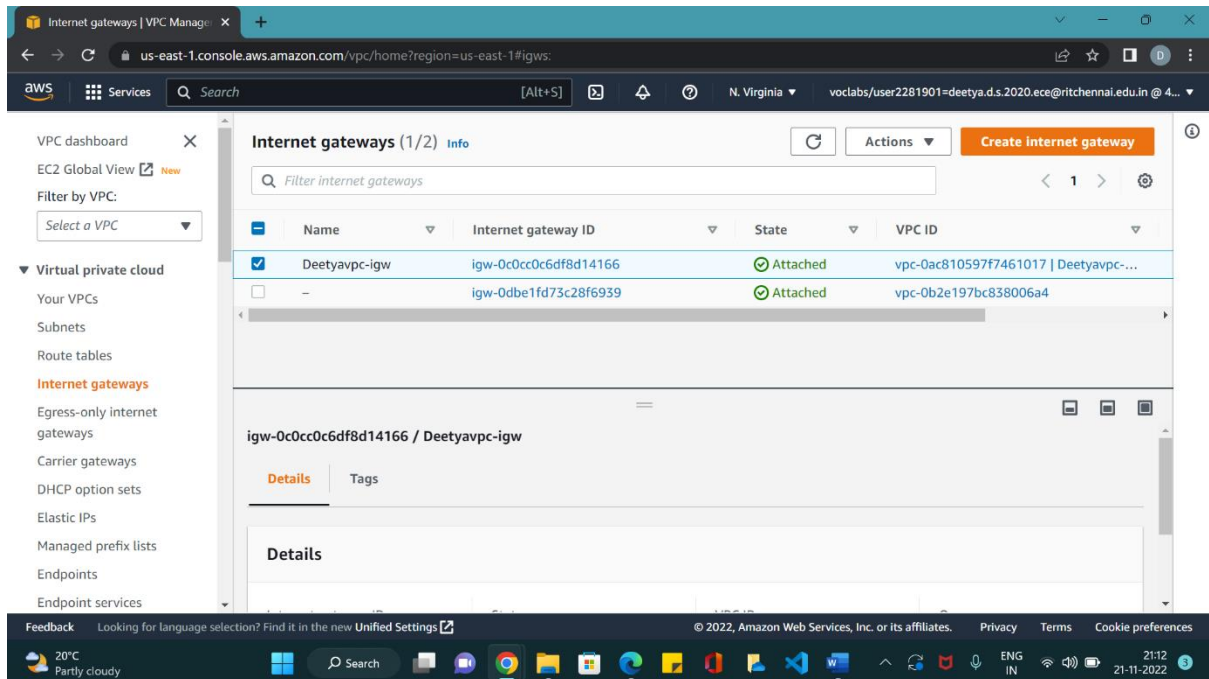


II. Associate an Elastic IP address with it

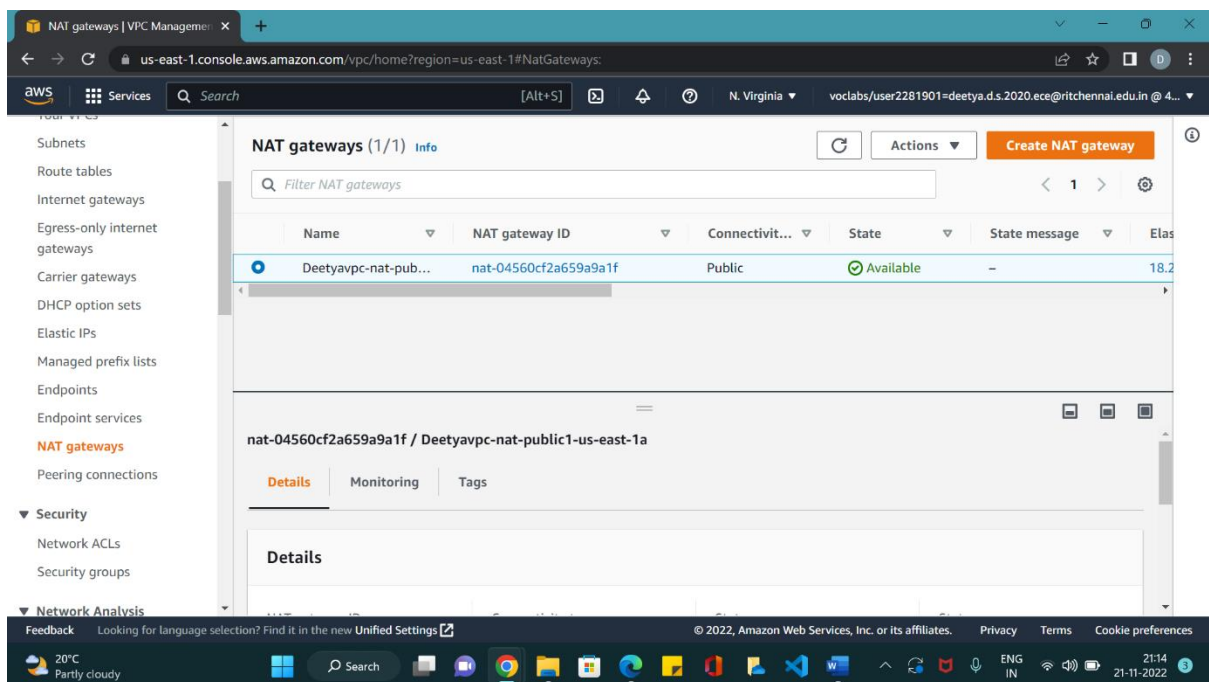


III. Explore various resources of VPC such as Internet Gateway, NAT Gateway, Subnets, Security Groups

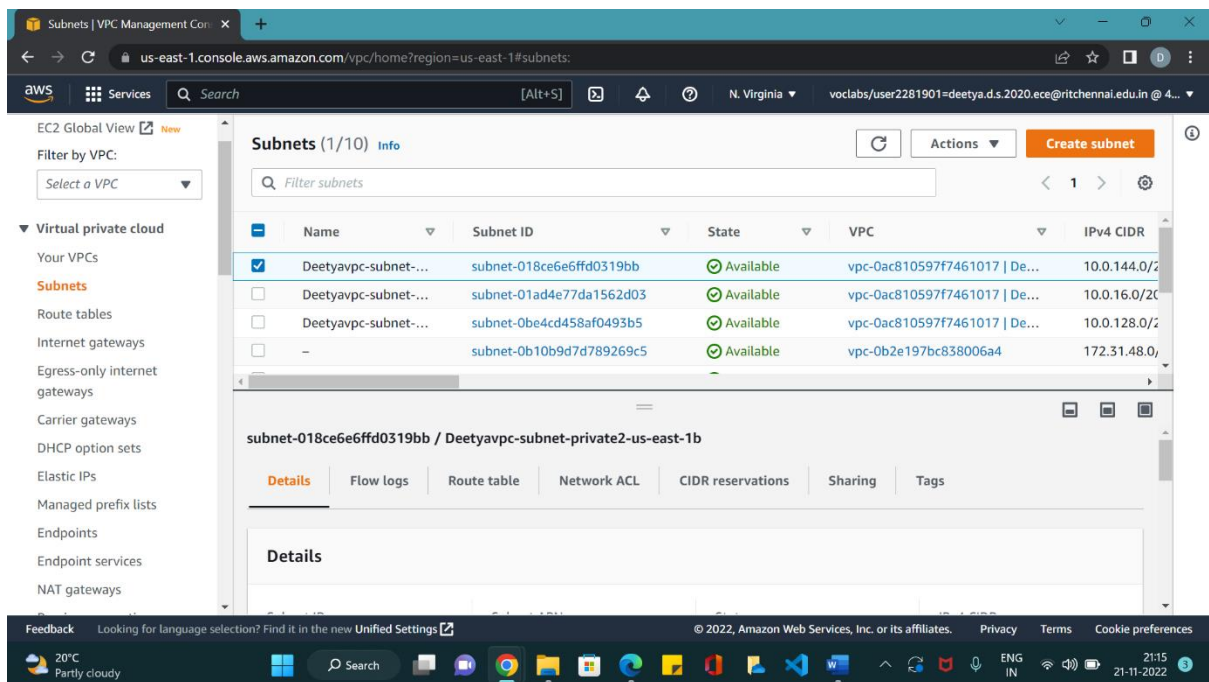
1. Internet Gateway:



2. Nat Gateway:



3.Subnet:



The screenshot shows the AWS VPC Management Console in the us-east-1 region. The left sidebar lists various VPC resources, with 'Subnets' selected. The main panel displays a table of subnets. The first subnet, 'Deetyavpc-subnet-...', is selected and its details are shown below the table.

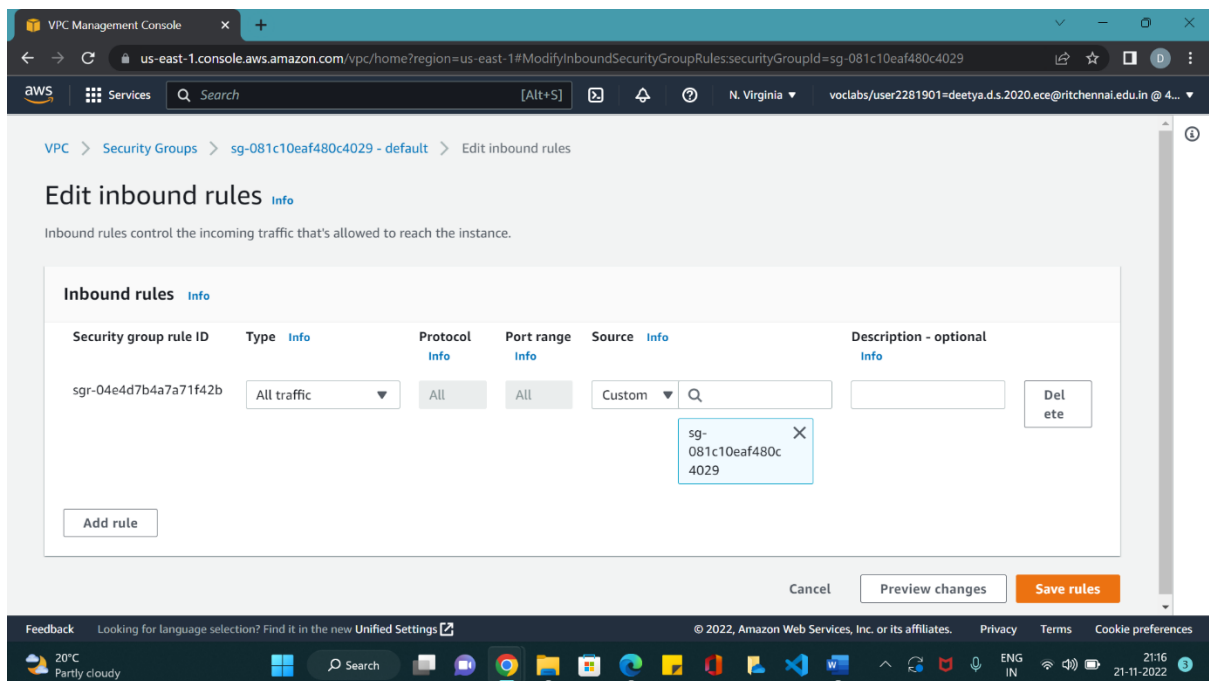
Name	Subnet ID	State	VPC	IPv4 CIDR
Deetyavpc-subnet-...	subnet-018ce6effd0319bb	Available	vpc-0ac810597f7461017 De...	10.0.144.0/24
Deetyavpc-subnet-...	subnet-01ad4e77da1562d03	Available	vpc-0ac810597f7461017 De...	10.0.16.0/24
Deetyavpc-subnet-...	subnet-0be4cd458af0493b5	Available	vpc-0ac810597f7461017 De...	10.0.128.0/24
-	subnet-0b10b9d7d789269c5	Available	vpc-0b2e197bc838006a4	172.31.48.0/24

Details for subnet-018ce6effd0319bb / Deetyavpc-subnet-private2-us-east-1b:

- Details
- Flow logs
- Route table
- Network ACL
- CIDR reservations
- Sharing
- Tags

4.Security Groups:

i.Inbound rules:



The screenshot shows the 'Edit inbound rules' page for a security group in the AWS VPC Management Console. The page title is 'Edit inbound rules' and it includes a description: 'Inbound rules control the incoming traffic that's allowed to reach the instance.' The page displays a table of inbound rules for the security group 'sg-081c10eaf480c4029'.

Security group rule ID	Type	Protocol	Port range	Source	Description - optional
sg-04e4d7b4a7a71f42b	All traffic	All	All	Custom	

The 'Add rule' button is visible at the bottom left of the table. A dropdown menu is open for the 'Source' column, showing the selected security group 'sg-081c10eaf480c4029'.

Buttons at the bottom: Cancel, Preview changes, Save rules

ii. Outbound Rules:

The screenshot shows the AWS VPC Management Console interface. The breadcrumb navigation indicates the path: VPC > Security Groups > sg-081c10eaf480c4029 - default > Edit outbound rules. The page title is 'Edit outbound rules' with an 'Info' link. A sub-header states: 'Outbound rules control the outgoing traffic that's allowed to leave the instance.'

The main content area is titled 'Outbound rules' with an 'Info' link. It contains a table with the following columns: Security group rule ID, Type, Protocol, Port range, Destination, and Description - optional. A single rule is listed with ID 'sgr-0db442471a14d0fb7', Type 'All traffic', Protocol 'All', Port range 'All', and Destination 'Custom'. A search box next to the destination shows '0.0.0.0/0'. A 'Delete' button is next to the rule. An 'Add rule' button is at the bottom left. At the bottom right, there are 'Cancel', 'Preview changes', and 'Save rules' buttons.

The footer of the console shows a feedback link, a language selection prompt, copyright information for Amazon Web Services, Inc., and links for Privacy, Terms, and Cookie preferences. The system tray at the bottom shows the date and time as 21:18 on 21-11-2022.

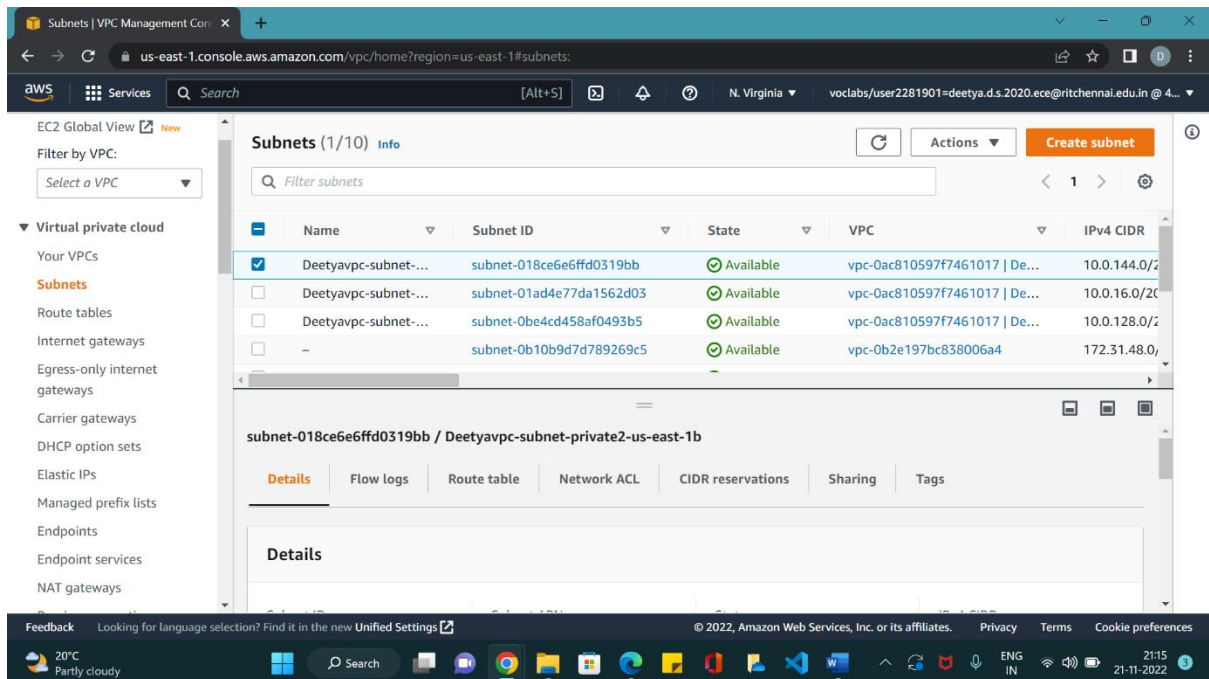
IV. Launch a NAT Gateway so that internet access is provided to private resources

The screenshot shows the AWS VPC Management Console interface. The breadcrumb navigation indicates the path: VPC > NAT gateways. The page title is 'NAT gateways (1/1)' with an 'Info' link. A search bar is present with the text 'Filter NAT gateways'. A table lists the NAT gateways with columns: Name, NAT gateway ID, Connectivity, State, State message, and Elastic IP. One gateway is listed: 'Deetyavpc-nat-pub...' with ID 'nat-04560cf2a659a9a1f', Connectivity 'Public', State 'Available', and Elastic IP '18.2...'. A 'Create NAT gateway' button is at the top right.

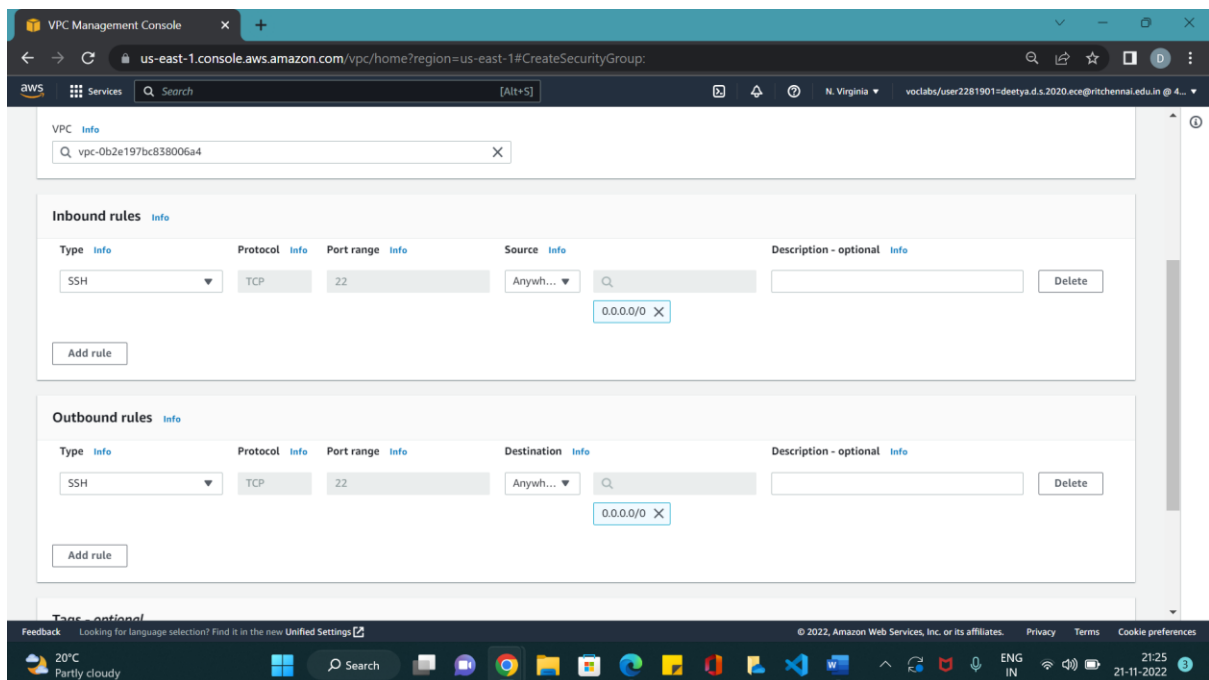
The details section for the selected gateway 'nat-04560cf2a659a9a1f / Deetyavpc-nat-public1-us-east-1a' is shown. It has tabs for 'Details', 'Monitoring', and 'Tags'. The 'Details' tab is active, showing the gateway's configuration.

The footer of the console shows a feedback link, a language selection prompt, copyright information for Amazon Web Services, Inc., and links for Privacy, Terms, and Cookie preferences. The system tray at the bottom shows the date and time as 21:19 on 21-11-2022.

V. Introduce a Public subnet for resources facing the internet such as a web server and a Private subnet for resources at the back end such as database server



VI. Define security groups with appropriate inbound rules



VPC Management Console

us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#SecurityGroup:groupId=sg-08537d553b9d42dc2

aws Services Search [Alt+S] N. Virginia voclabs/user2281901=deetya.d.s.2020.ece@ritchenai.edu.in @ 4...

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

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

Security group (sg-08537d553b9d42dc2 | Deetya) was created successfully
Details

VPC > Security Groups > sg-08537d553b9d42dc2 - Deetya

sg-08537d553b9d42dc2 - Deetya

Details

Security group name	Security group ID	Description	VPC ID
Deetya	sg-08537d553b9d42dc2	allowssh	vpc-0b2e197bc838006a4
Owner	Inbound rules count	Outbound rules count	
417657797236	1 Permission entry	1 Permission entry	

Inbound rules Outbound rules Tags

Feedback Looking for language selection? Find it in the new Unified Settings

20°C Partly cloudy

VII. Ensure proper routes and corresponding Route tables entries specifying the traffic moving out of the subnet

Subnets | VPC Management Console

us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#subnets:

aws Services Search [Alt+S] N. Virginia voclabs/user2281901=deetya.d.s.2020.ece@ritchenai.edu.in @ 4...

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

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

Subnets (1/10) Info

Filter subnets

	Name	Subnet ID	State	VPC	IPv4 CIDR
<input checked="" type="checkbox"/>	Deetyavpc-subnet-...	subnet-018ce6e6ffd0319bb	Available	vpc-0ac810597f7461017 De...	10.0.144.0/2...
<input type="checkbox"/>	Deetyavpc-subnet-...	subnet-01ad4e77da1562d03	Available	vpc-0ac810597f7461017 De...	10.0.16.0/20

Route table: rtb-062989a2eee0820c9 / Deetyavpc-rtb-private2-us-east-1b

Edit route table association

Routes (3)

Filter routes

Destination	Target
10.0.0.0/16	local
0.0.0.0/0	nat-04560cf2a659a9a1f
pl-63a5400a	vpce-0c8a95e557f8bcb95

Feedback Looking for language selection? Find it in the new Unified Settings

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VIII. Make use of Network ACLs for controlling inbound and outbound traffic in the VPC

The screenshot shows the AWS Management Console for Network ACLs in the us-east-1 region. The left sidebar lists various services, with 'Network ACLs' highlighted under the 'Security' section. The main content area shows the 'Network ACLs (1/2)' page. A table lists the Network ACLs:

Name	Network ACL ID	Associated with	Default	VPC ID
-	acl-057ceb081c7e1cbe8	4 Subnets	Yes	vpc-0ac810...
-	acl-04ad0f9207513551c	6 Subnets	Yes	vpc-0b2e1f...

The 'Inbound rules (2)' section is expanded, showing a table of rules:

Rule number	Type	Protocol	Port range	Source	Allow/Deny
100	All traffic	All	All	0.0.0.0/0	Allow
*	All traffic	All	All	0.0.0.0/0	Deny

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Rule number	Type	Protocol	Port range	Destination	Allow/Deny
100	All traffic	All	All	0.0.0.0/0	Allow
*	All traffic	All	All	0.0.0.0/0	Deny