

TASK ON VPC 01

1) Create VPC with 2 private and 2 public subnets:

The screenshot shows the AWS VPC console. On the left, the 'VPC dashboard' sidebar is visible with options like 'EC2 Global View', 'Filter by VPC', and 'Virtual private cloud'. The main area is titled 'Subnets (4/7) info'. It contains a table with columns: Name, Subnet ID, State, VPC, Block Public..., and IPv4 CIDR. There are four subnets listed: two private subnets (private-subnet-1, private-subnet-2) and two public subnets (public subnet-2, public subnet-1). All subnets are in the 'Available' state and are associated with the VPC 'vpc-08197ebb402e4e1f4'. The 'Block Public...' column shows 'Off' for all subnets. The IPv4 CIDR ranges are 192.168.3.0/24, 192.31.16.0/24, 192.168.4.0/24, and 192.168.2.0/24 respectively.

Name	Subnet ID	State	VPC	Block Public...	IPv4 CIDR
private-subnet-1	subnet-0f796bd07e4873038	Available	vpc-08197ebb402e4e1f4 my-...	Off	192.168.3.0/24
-	subnet-0aa3077560a71e4c5	Available	vpc-03d6da058f5de6f2f	Off	192.31.16.0/24
private-subnet-2	subnet-0f6ed9f84f7f8ca51	Available	vpc-08197ebb402e4e1f4 my-...	Off	192.168.4.0/24
-	subnet-0a975507dc7e305a5	Available	vpc-03d6da058f5de6f2f	Off	192.31.0.0/24
-	subnet-02e04adc65ef65d2	Available	vpc-03d6da058f5de6f2f	Off	192.31.32.0/24
public subnet-2	subnet-0c63c4200f6386ac2	Available	vpc-08197ebb402e4e1f4 my-...	Off	192.168.2.0/24
public subnet-1	subnet-080a0ddc5ae758f35	Available	vpc-08197ebb402e4e1f4 my-...	Off	192.168.1.0/24

2) Enable DNS Hostname in VPC:

The screenshot shows the 'Edit VPC settings' page for VPC 'vpc-08197ebb402e4e1f4'. The 'DNS settings' section is expanded, showing 'Enable DNS resolution' and 'Enable DNS hostnames' both checked. Below this, the 'Network Address Usage metrics settings' section is visible with 'Enable Network Address Usage metrics' unchecked. A green confirmation message at the top states: 'You have successfully modified the settings for vpc-08197ebb402e4e1f4 / my-vpc.' Below the message, the 'Your VPCs (1/2) info' table shows the VPC 'my-vpc' with ID 'vpc-08197ebb402e4e1f4' and state 'Available'. The 'Block Public Access' column shows 'Off'. The IPv4 CIDR is '192.168.0.0/16'. Below the table, the 'Details' tab for the VPC is shown, with 'DNS hostnames' set to 'Enabled'.

Edit VPC settings

VPC details

VPC ID: vpc-08197ebb402e4e1f4
Name: my-vpc

DHCP settings

DHCP option set: dopt-007aff51db381889f

DNS settings

☒ Enable DNS resolution
☒ Enable DNS hostnames

Network Address Usage metrics settings

☐ Enable Network Address Usage metrics

You have successfully modified the settings for vpc-08197ebb402e4e1f4 / my-vpc.

Your VPCs (1/2) info

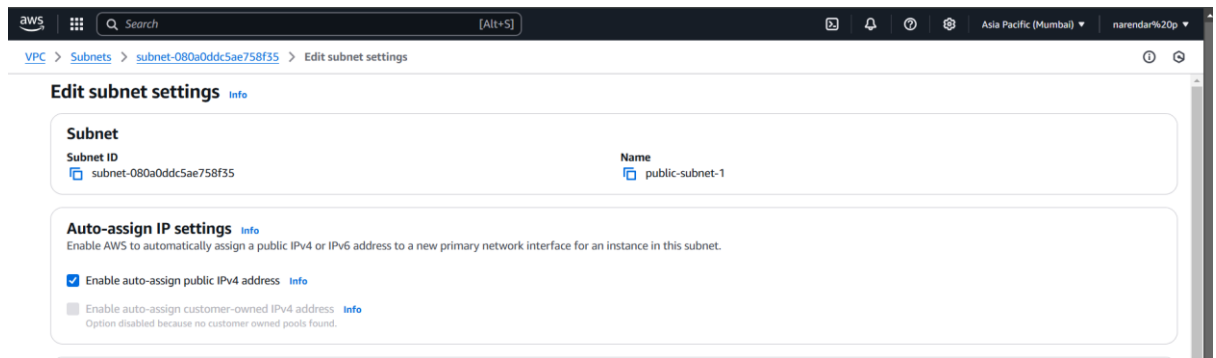
Name	VPC ID	State	Block Public...	IPv4 CIDR	IPv6 CIDR
my-vpc	vpc-08197ebb402e4e1f4	Available	Off	192.168.0.0/16	-
-	vpc-03d6da058f5de6f2f	Available	Off	172.31.0.0/16	-

vpc-08197ebb402e4e1f4 / my-vpc

Details

VPC ID: vpc-08197ebb402e4e1f4
State: Available
Block Public Access: Off
DNS hostnames: Enabled

3) Enable Auto Assign Public IP in 2 public subnets:



Edit subnet settings [Info](#)

Subnet

Subnet ID: subnet-O80a0ddc5ae758f35 Name: public-subnet-1

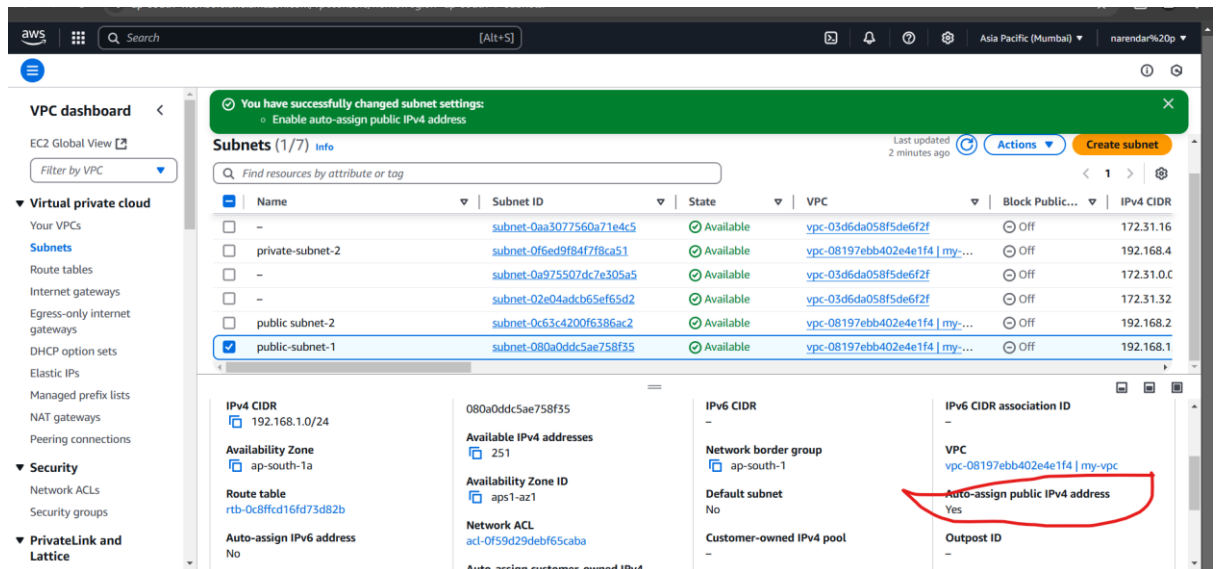
Auto-assign IP settings [Info](#)

Enable AWS to automatically assign a public IPv4 or IPv6 address to a new primary network interface for an instance in this subnet.

☒ Enable auto-assign public IPv4 address [Info](#)

☐ Enable auto-assign customer-owned IPv4 address [Info](#)

Option disabled because no customer owned pools found.



You have successfully changed subnet settings:
Enable auto-assign public IPv4 address

Subnets (1/7) [Info](#)

Find resources by attribute or tag

Name	Subnet ID	State	VPC	Block Public...	IPv4 CIDR
-	subnet-0aa3077560a71e4c5	Available	vpc-03d6da058f5de6f2f	Off	172.31.16
private-subnet-2	subnet-0f6ed9f84f7f8ca51	Available	vpc-08197ebb402e4e1f4 my-...	Off	192.168.4
-	subnet-0a975507dc7e305a5	Available	vpc-03d6da058f5de6f2f	Off	172.31.0.0
-	subnet-02e04adc65ef65d2	Available	vpc-03d6da058f5de6f2f	Off	172.31.32
public subnet-2	subnet-0c63c4200f6386ac2	Available	vpc-08197ebb402e4e1f4 my-...	Off	192.168.2
public-subnet-1	subnet-O80a0ddc5ae758f35	Available	vpc-08197ebb402e4e1f4 my-...	Off	192.168.1

IPv4 CIDR 192.168.1.0/24

Availability Zone ap-south-1a

Route table rtb-0c8ffcd16fd73d82b

Auto-assign IPv6 address No

Available IPv4 addresses 251

Availability Zone ID ap-s1-az1

Network ACL acl-0f59d29deb6f5caba

Auto-assign customer-owned IPv4

IPv6 CIDR

Network border group ap-south-1

Default subnet No

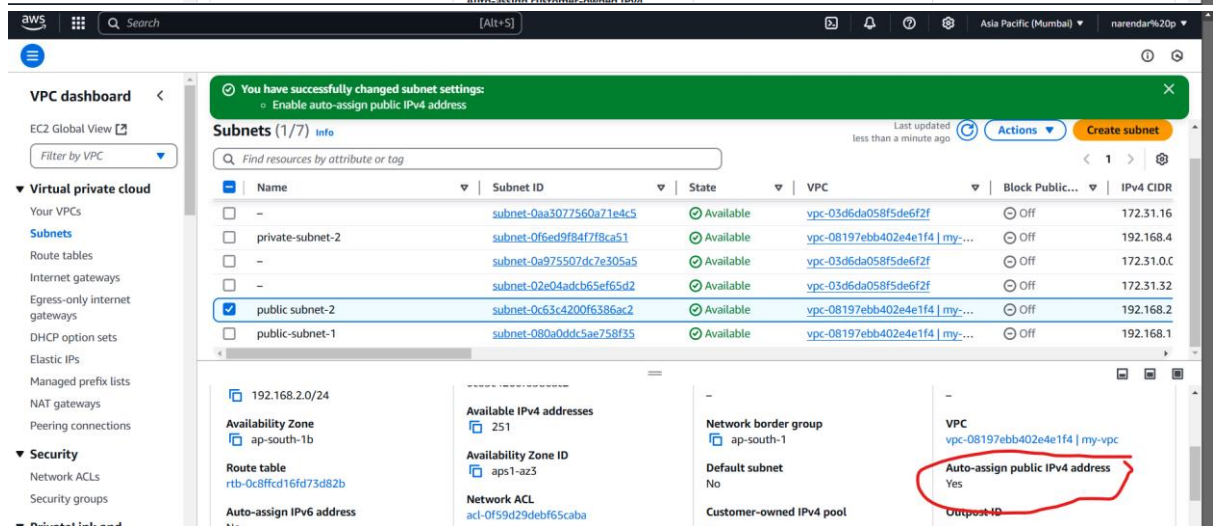
Customer-owned IPv4 pool

IPv6 CIDR association ID

VPC vpc-08197ebb402e4e1f4 | my-vpc

Auto-assign public IPv4 address Yes

Outpost ID



You have successfully changed subnet settings:
Enable auto-assign public IPv4 address

Subnets (1/7) [Info](#)

Find resources by attribute or tag

Name	Subnet ID	State	VPC	Block Public...	IPv4 CIDR
-	subnet-0aa3077560a71e4c5	Available	vpc-03d6da058f5de6f2f	Off	172.31.16
private-subnet-2	subnet-0f6ed9f84f7f8ca51	Available	vpc-08197ebb402e4e1f4 my-...	Off	192.168.4
-	subnet-0a975507dc7e305a5	Available	vpc-03d6da058f5de6f2f	Off	172.31.0.0
-	subnet-02e04adc65ef65d2	Available	vpc-03d6da058f5de6f2f	Off	172.31.32
public subnet-2	subnet-0c63c4200f6386ac2	Available	vpc-08197ebb402e4e1f4 my-...	Off	192.168.2
public-subnet-1	subnet-O80a0ddc5ae758f35	Available	vpc-08197ebb402e4e1f4 my-...	Off	192.168.1

IPv4 CIDR 192.168.2.0/24

Availability Zone ap-south-1b

Route table rtb-0c8ffcd16fd73d82b

Auto-assign IPv6 address No

Available IPv4 addresses 251

Availability Zone ID ap-s1-az3

Network ACL acl-0f59d29deb6f5caba

Auto-assign customer-owned IPv4

IPv6 CIDR

Network border group ap-south-1

Default subnet No

Customer-owned IPv4 pool

IPv6 CIDR association ID

VPC vpc-08197ebb402e4e1f4 | my-vpc

Auto-assign public IPv4 address Yes

Outpost ID

4) Add 2 private subnets in private route table:

The screenshot shows the AWS VPC console interface. A green notification banner at the top states: "You have successfully updated subnet associations for rtb-0c8ffcd16fd73d82b / private-RT." Below this, the "Route tables (1/2)" section displays a table with the following data:

Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC
private-RT	rtb-0c8ffcd16fd73d82b	2 subnets	-	Yes	vpc-08197ebb402e4e1f4
-	rtb-09dadb594492f6696	-	-	Yes	vpc-03d6da058f5de6f2f

Below the route tables, the "Explicit subnet associations (2)" section shows a table with the following data:

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
private-subnet-1	subnet-0f796bd07e4873038	192.168.3.0/24	-
private-subnet-2	subnet-0f6ed9f84f7f8ca51	192.168.4.0/24	-

5) Add 2 public subnets in public route table :

The screenshot shows the AWS VPC console interface. A notification banner at the top states: "Last updated 5 minutes ago". Below this, the "Route tables (1/2)" section displays a table with the following data:

Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC
public-RT	rtb-0c8ffcd16fd73d82b	2 subnets	-	Yes	vpc-08197ebb402e4e1f4
-	rtb-09dadb594492f6696	-	-	Yes	vpc-03d6da058f5de6f2f

Below the route tables, the "Explicit subnet associations (2)" section shows a table with the following data:

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
public subnet-2	subnet-0c63c4200f6386ac2	192.168.2.0/24	-
public subnet-1	subnet-080a0ddc5ae758f35	192.168.1.0/24	-

6) Public route table will have the routes to internet and local:

Edit routes

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

rtb-0c8ffcd16fd73d82b / public-RT

Details

Route table ID	Main	Explicit subnet associations	Edge associations
rtb-0c8ffcd16fd73d82b	Yes	2 subnets	-

Routes (2)

Destination	Target	Status	Propagated
0.0.0.0/0	igw-0e3068f91a7d12164	Active	No
192.168.0.0/16	local	Active	No

7) Create Ec2 in public subnet with t2micro and install php:

```
[root@ip-192-168-1-45 ~]# vi installphp.bash
[root@ip-192-168-1-45 ~]# ./installphp.bash
-bash: ./installphp.bash: Permission denied
[root@ip-192-168-1-45 ~]# chmod 557 installphp.bash
[root@ip-192-168-1-45 ~]# ./installphp.bash
```

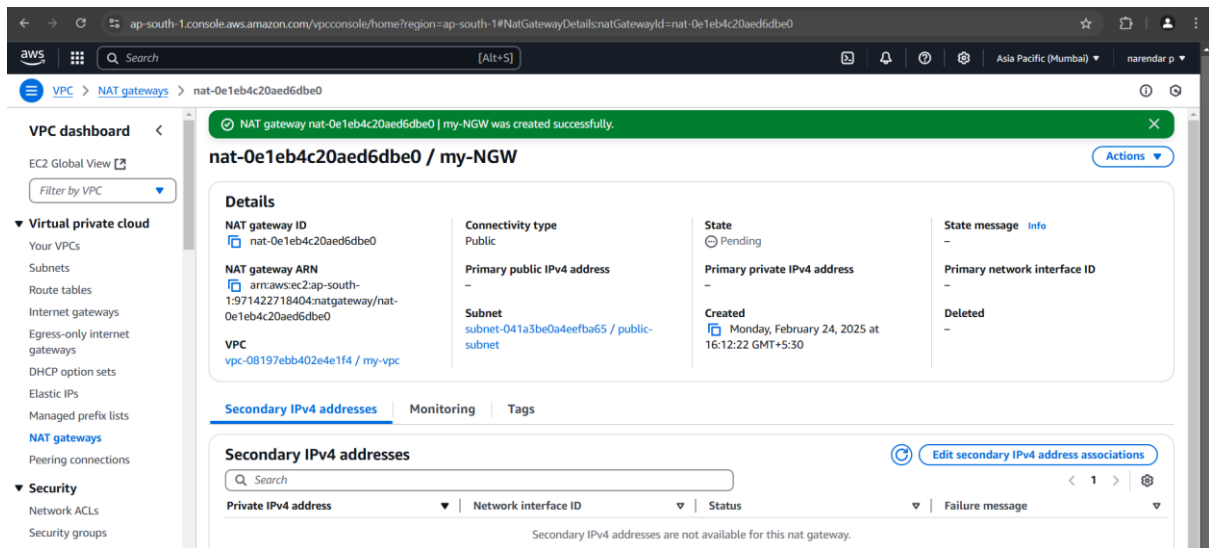
```
#!/bin/bash
sudo yum update -y
sudo yum install -y httpd php php-cli
sudo systemctl enable httpd
sudo systemctl start httpd
echo "<?php phpinfo(); ?>" | sudo tee /var/www/html/index.php
```

```
Installed:
  httpd.x86_64 0:2.4.62-1.amzn2.0.2          php.x86_64 0:5.4.16-46.amzn2.0.5          php-cli.x86_64 0:5.4.16-46.amzn2.0.5

Dependency Installed:
  apr.x86_64 0:1.7.2-1.amzn2.0.1          apr-util.x86_64 0:1.6.3-1.amzn2.0.1          apr-util-bdb.x86_64 0:1.6.3-1.amzn2.0.1
  generic-logos-httpd.noarch 0:18.0.0-4.amzn2  httpd-filesystem.noarch 0:2.4.62-1.amzn2.0.2  httpd-tools.x86_64 0:2.4.62-1.amzn2.0.2
  libzip010-compat.x86_64 0:0.10.1-9.amzn2.0.5  mailcap.noarch 0:2.1.41-2.amzn2              mod_http2.x86_64 0:1.15.19-1.amzn2.0.2
  php-common.x86_64 0:5.4.16-46.amzn2.0.5

Complete!
Created symlink from /etc/systemd/system/multi-user.target.wants/httpd.service to /usr/lib/systemd/system/httpd.service.
<?php phpinfo(); ?>
[root@ip-192-168-1-45 ~]#
```

8) Configure Nat gateway in public subnet and connect to private Instance :



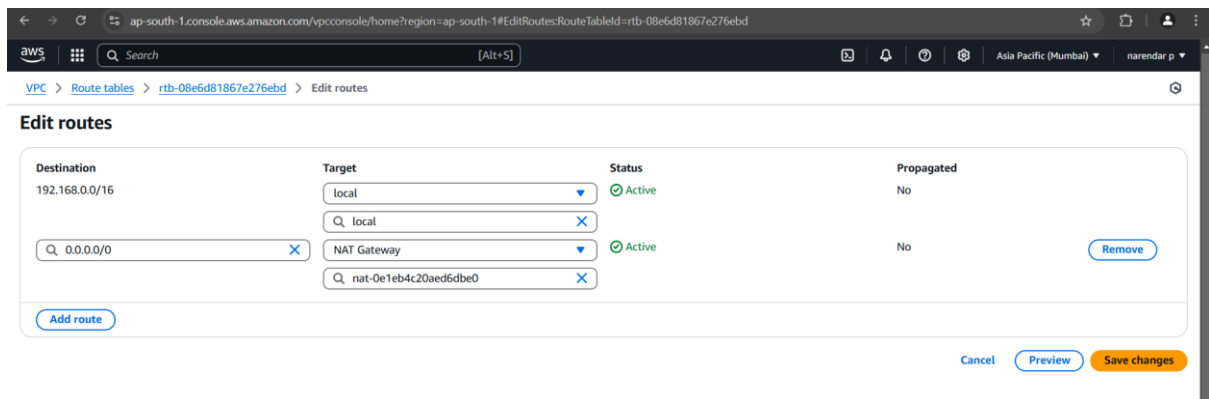
The screenshot shows the AWS Management Console interface for a NAT gateway. The breadcrumb navigation at the top indicates the path: **VPC** > **NAT gateways** > **nat-0e1eb4c20aed6dbe0**. A green success banner at the top states: "NAT gateway nat-0e1eb4c20aed6dbe0 | my-NGW was created successfully." The main heading is "nat-0e1eb4c20aed6dbe0 / my-NGW".

The left sidebar contains the "VPC dashboard" with a search bar and a "Filter by VPC" dropdown. Under "Virtual private cloud", there are links for "Your VPCs", "Subnets", "Route tables", "Internet gateways", "Egress-only internet gateways", "DHCP option sets", "Elastic IPs", "Managed prefix lists", "NAT gateways" (which is highlighted), and "Peering connections". Under "Security", there are links for "Network ACLs" and "Security groups".

The main content area displays the details of the NAT gateway in a table-like format:

Details		Connectivity type	State	State message
NAT gateway ID	nat-0e1eb4c20aed6dbe0	Public	Pending	-
NAT gateway ARN	arn:aws:ec2:ap-south-1:971422718404:natgateway/nat-0e1eb4c20aed6dbe0	Primary public IPv4 address	Primary private IPv4 address	Primary network interface ID
VPC	vpc-08197ebb402e4e1f4 / my-vpc	Subnet	Created	Deleted
		subnet-041a3be0a4eeefba65 / public-subnet	Monday, February 24, 2025 at 16:12:22 GMT+5:30	-

Below the details, there are tabs for "Secondary IPv4 addresses", "Monitoring", and "Tags". The "Secondary IPv4 addresses" tab is active, showing a search bar and a table with columns: "Private IPv4 address", "Network interface ID", "Status", and "Failure message". A message at the bottom of this section states: "Secondary IPv4 addresses are not available for this nat gateway."

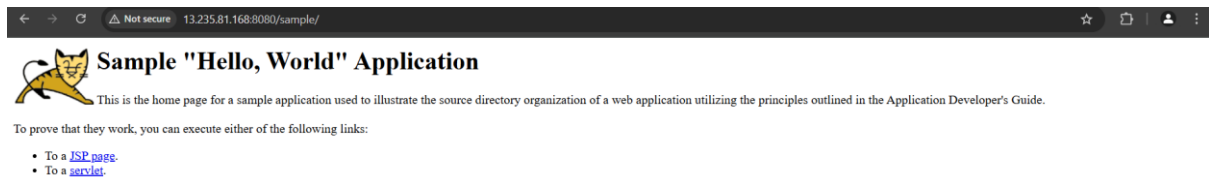


The screenshot shows the "Edit routes" page in the AWS Management Console. The breadcrumb navigation at the top indicates the path: **VPC** > **Route tables** > **rtb-08e6d81867e276ebd** > **Edit routes**. The main heading is "Edit routes".

The page displays a table with columns: "Destination", "Target", "Status", and "Propagated".

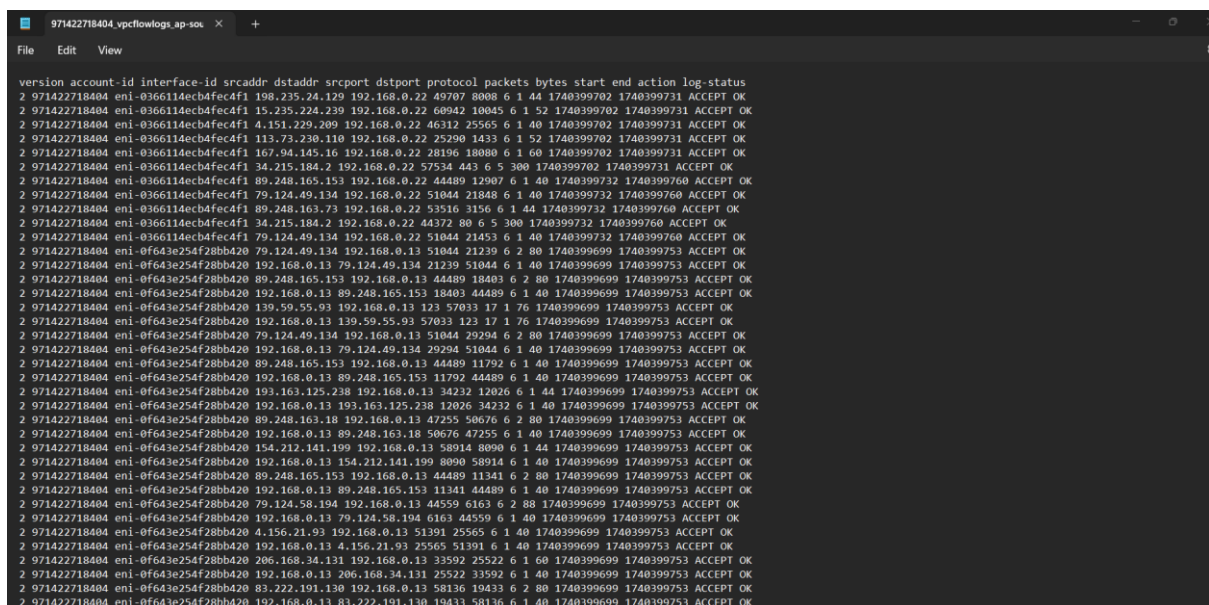
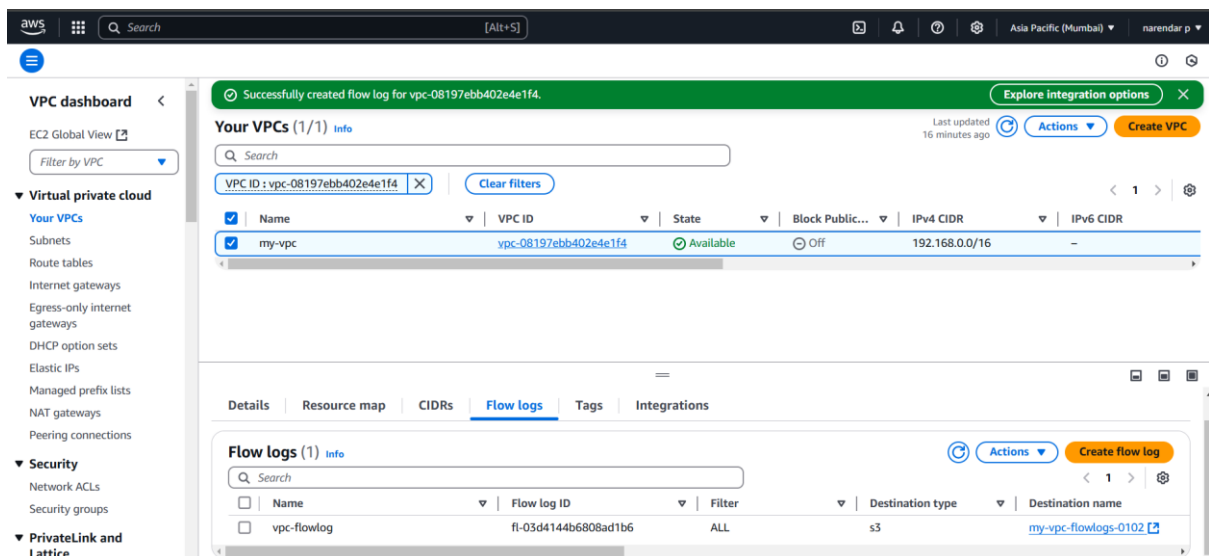
Destination	Target	Status	Propagated
192.168.0.0/16	local	Active	No
0.0.0.0/0	NAT Gateway	Active	No

Below the table, there is an "Add route" button. At the bottom right, there are buttons for "Cancel", "Preview", and "Save changes".



10) Configure VPC flow logs and store the logs in s3 and CloudWatch:

Store the logs in S3:



Store the logs in Cloud watch:

The screenshot shows the AWS CloudWatch console's 'Log groups' page. The left sidebar contains navigation links for CloudWatch, Favorites and recents, Dashboards, Alarms, Logs, and Metrics. The 'Logs' section is expanded, showing 'Log groups', 'Log Anomalies', 'Live Tail', 'Logs Insights', and 'Contributor Insights'. The main content area is titled 'Log groups (1)' and includes a search bar, a table of log groups, and a 'Create log group' button. The table lists one log group named 'vpc-flow-log-cloudwatch' with a 'Standard' log class and a 'Never expire' retention policy.

The screenshot shows the 'Log events' page for the 'vpc-flow-log-cloudwatch' log group. The left sidebar is identical to the previous screenshot. The main content area is titled 'Log events' and includes a search bar, a filter bar with options like 'Clear', '1m', '30m', '1h', '12h', 'Custom', 'UTC timezone', and 'Display'. Below the filter bar is a table of log events. The table has two columns: 'Timestamp' and 'Message'. The 'Message' column contains detailed log data, including IP addresses, ports, and protocol numbers.

The screenshot shows the AWS VPC dashboard. The left sidebar contains navigation links for VPC dashboard, EC2 Global View, Virtual private cloud, Security, and PrivateLink and. The 'Virtual private cloud' section is expanded, showing 'Your VPCs', 'Subnets', 'Route tables', 'Internet gateways', 'Egress-only internet gateways', 'DHCP option sets', 'Elastic IPs', 'Managed prefix lists', 'NAT gateways', and 'Peering connections'. The main content area is titled 'Your VPCs (1/2)' and includes a search bar, a table of VPCs, and a 'Create VPC' button. The table lists two VPCs: 'my-vpc' and 'vpc-03d6da058f5de6f2f'. Below the VPCs table is a section titled 'Flow logs (1/2)' with a search bar, a table of flow logs, and a 'Create flow log' button. The table lists two flow logs: 'vpc-flowlog' and 'my-vpc-flowlog-cloudwatch'.