VPC

Case study

Problem Statement:

You work for XYZ Corporation and based on the expansion requirements of your corporation you have been asked to create and set up a distinct Amazon VPC for the production and development team. You are expected to perform the following tasks for the respective VPCs.

Production Network:

1. Design and build a 4-tier architecture.

2. Create 5 subnets out of which 4 should be private named app1, app2, dbcache and db and one should be public, named web.

3. Launch instances in all subnets and name them as per the subnet that they have been launched in.

4. Allow dbcache instance and app1 subnet to send internet requests.

5. Manage security groups and NACLs.

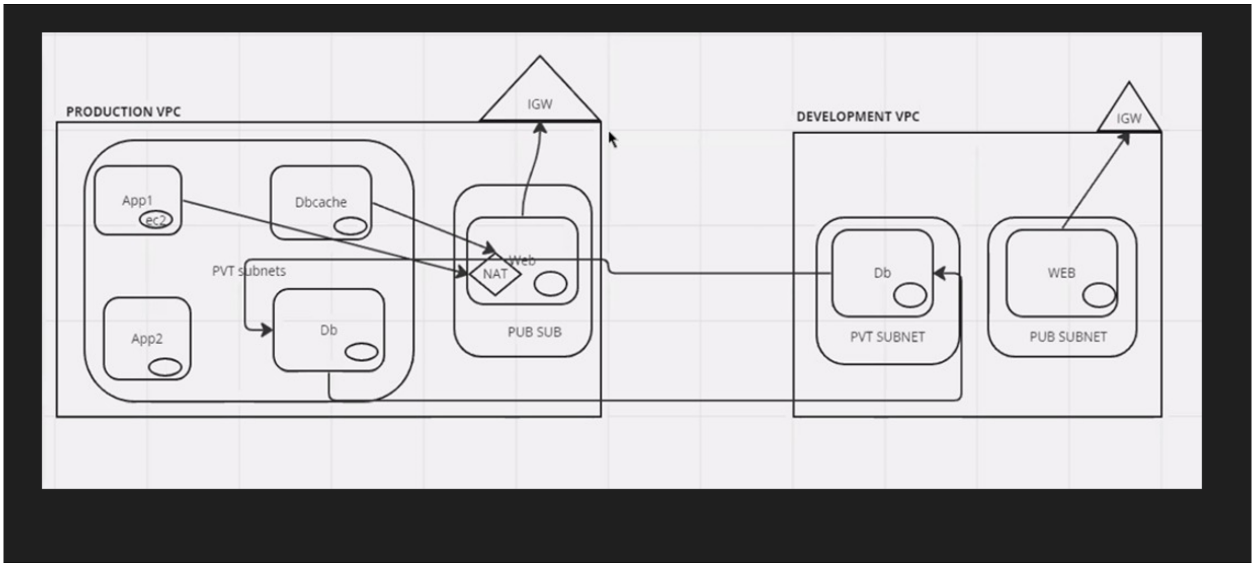
Development Network:

1. Design and build 2-tier architecture with two subnets named web and db and launch instances in both subnets and name them as per the subnet names.

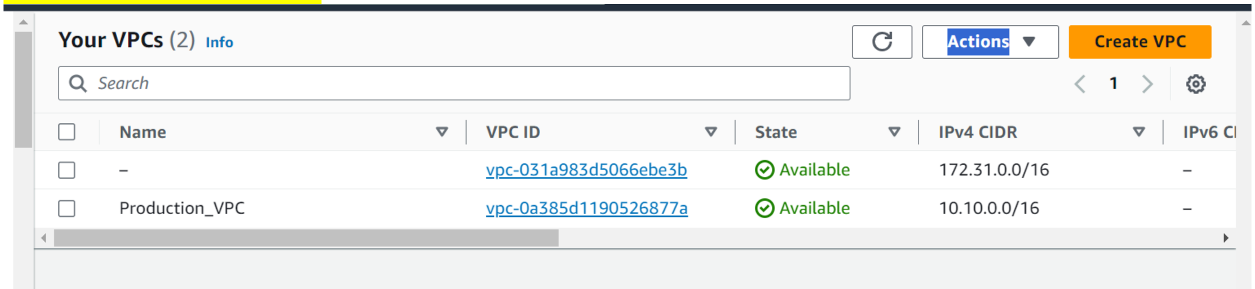
2. Make sure only the web subnet can send internet requests.

3. Create peering connection between production network and development network.

4. Setup connection between db subnets of both production network and development network respectively

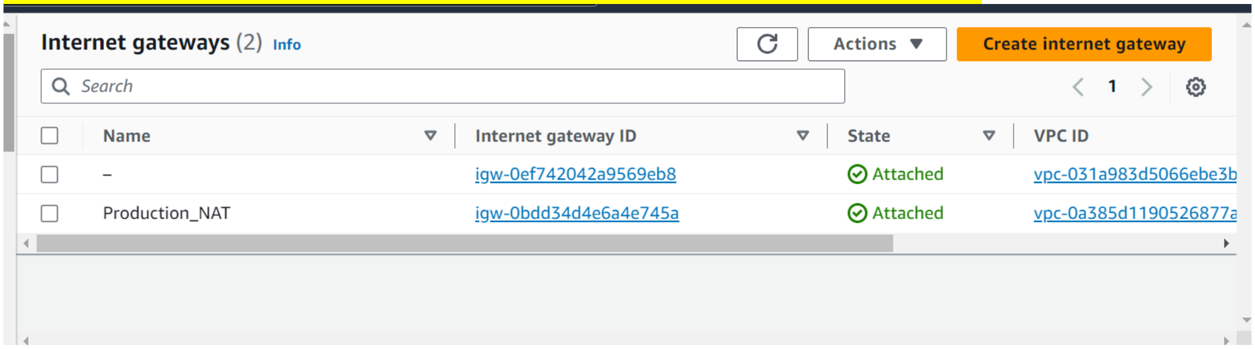


Created production VPC



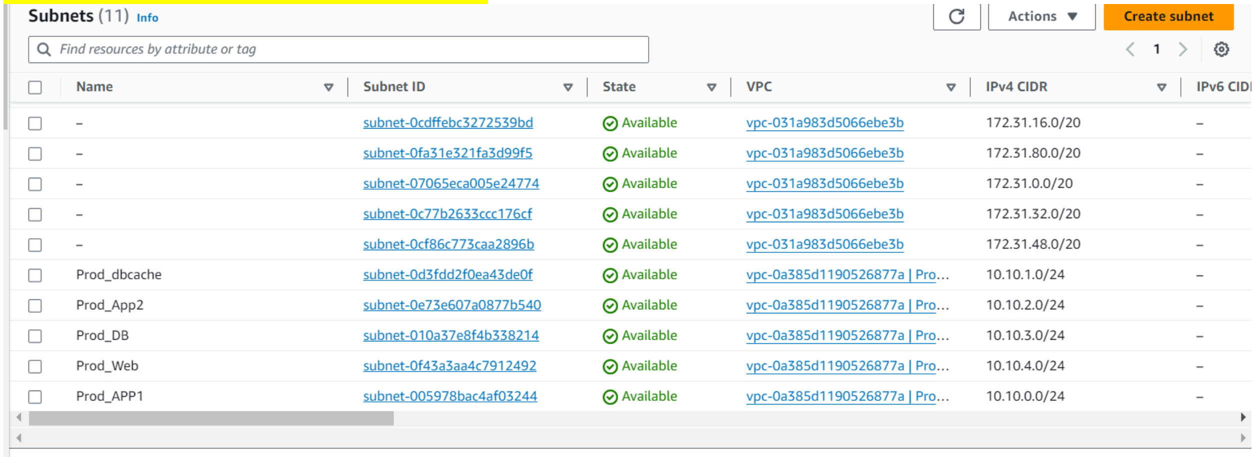
☐	Name	VPC ID	State	IPv4 CIDR	IPv6 CI
☐	–	vpc-031a983d5066ebe3b	✓ Available	172.31.0.0/16	–
☐	Production_VPC	vpc-0a385d1190526877a	✓ Available	10.10.0.0/16	–

Created internet gateway for production VPN & Attach with Production VPC



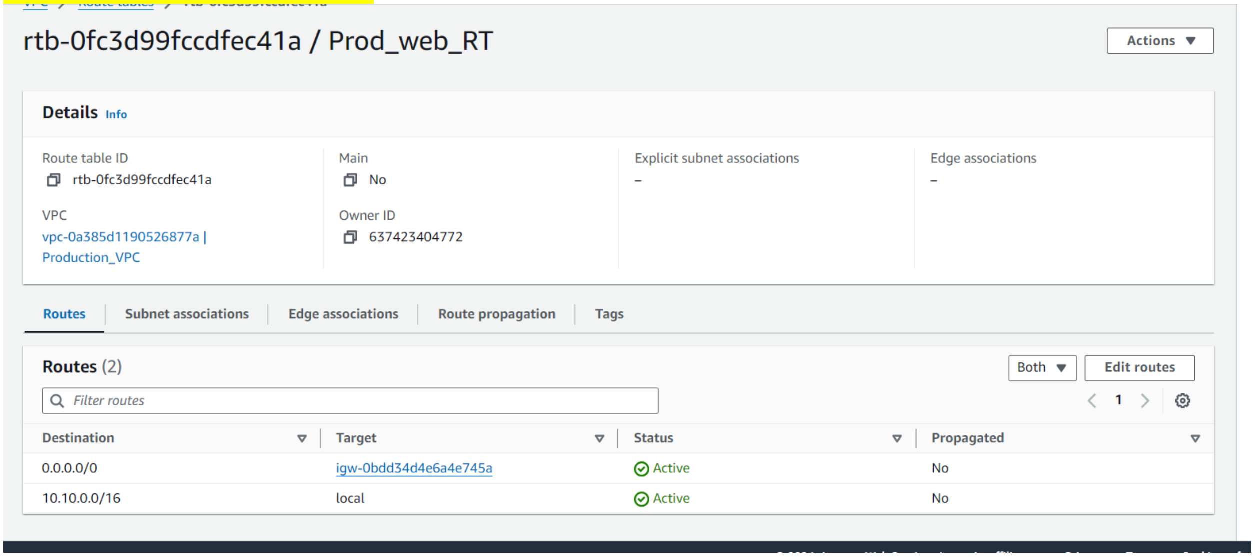
☐	Name	Internet gateway ID	State	VPC ID
☐	–	igw-0ef742042a9569eb8	✓ Attached	vpc-031a983d5066ebe3b
☐	Production_NAT	igw-0bdd34d4e6a4e745a	✓ Attached	vpc-0a385d1190526877a

Created 5 subnets in production VPN



□	Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6 CIDI
□	–	subnet-0cdffebc3272539bd	✓ Available	vpc-031a983d5066ebe3b	172.31.16.0/20	–
□	–	subnet-0fa31e321fa3d99f5	✓ Available	vpc-031a983d5066ebe3b	172.31.80.0/20	–
□	–	subnet-07065eca005e24774	✓ Available	vpc-031a983d5066ebe3b	172.31.0.0/20	–
□	–	subnet-0c77b2633ccc176cf	✓ Available	vpc-031a983d5066ebe3b	172.31.32.0/20	–
□	–	subnet-0cf86c773caa2896b	✓ Available	vpc-031a983d5066ebe3b	172.31.48.0/20	–
□	Prod_dbcache	subnet-0d3fdd2f0ea43de0f	✓ Available	vpc-0a385d1190526877a | Pro…	10.10.1.0/24	–
□	Prod_App2	subnet-0e73e607a0877b540	✓ Available	vpc-0a385d1190526877a | Pro…	10.10.2.0/24	–
□	Prod_DB	subnet-010a37e8f4b338214	✓ Available	vpc-0a385d1190526877a | Pro…	10.10.3.0/24	–
□	Prod_Web	subnet-0f43a3aa4c7912492	✓ Available	vpc-0a385d1190526877a | Pro…	10.10.4.0/24	–
□	Prod_APP1	subnet-005978bac4af03244	✓ Available	vpc-0a385d1190526877a | Pro…	10.10.0.0/24	–

Created public route table in production VPC & Update the internet gateway entry in route table & associate with web subnet



rtb-0fc3d99fccdfec41a / Prod_web_RT

Details Info

Route table ID: rtb-0fc3d99fccdfec41a

Main: No

Explicit subnet associations: –

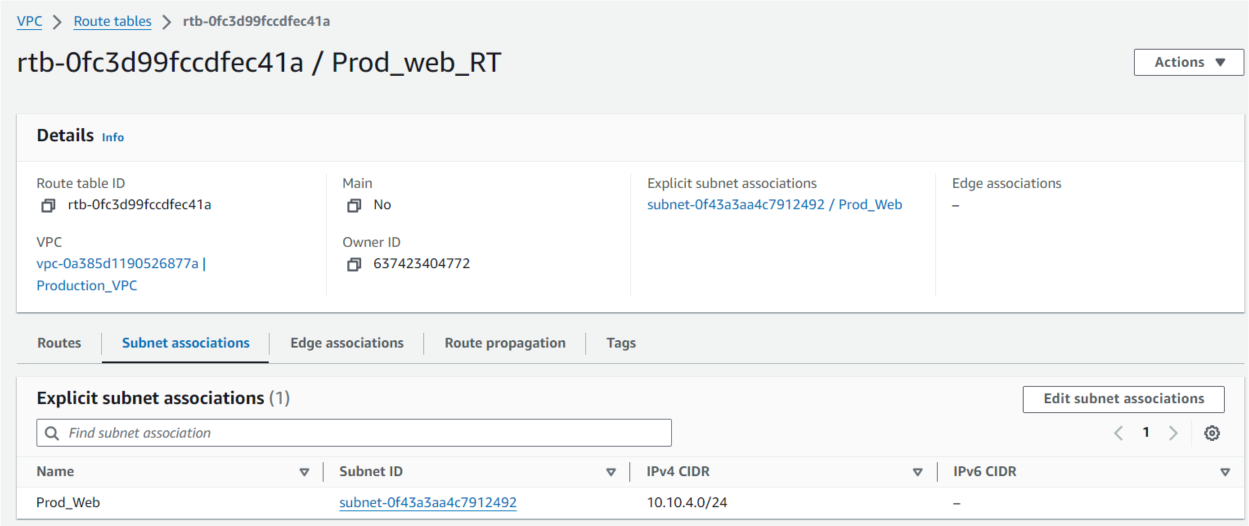
Edge associations: –

VPC: vpc-0a385d1190526877a | Production_VPC

Owner ID: 637423404772

Routes (2)

Destination	Target	Status	Propagated
0.0.0.0/0	igw-0bdd34d4e6a4e745a	✓ Active	No
10.10.0.0/16	local	✓ Active	No



VPC > Route tables > rtb-0fc3d99fccdfec41a

rtb-0fc3d99fccdfec41a / Prod_web_RT

Details Info

Route table ID
rtb-0fc3d99fccdfec41a

Main
No

Explicit subnet associations
subnet-0f43a3aa4c7912492 / Prod_Web

Edge associations
–

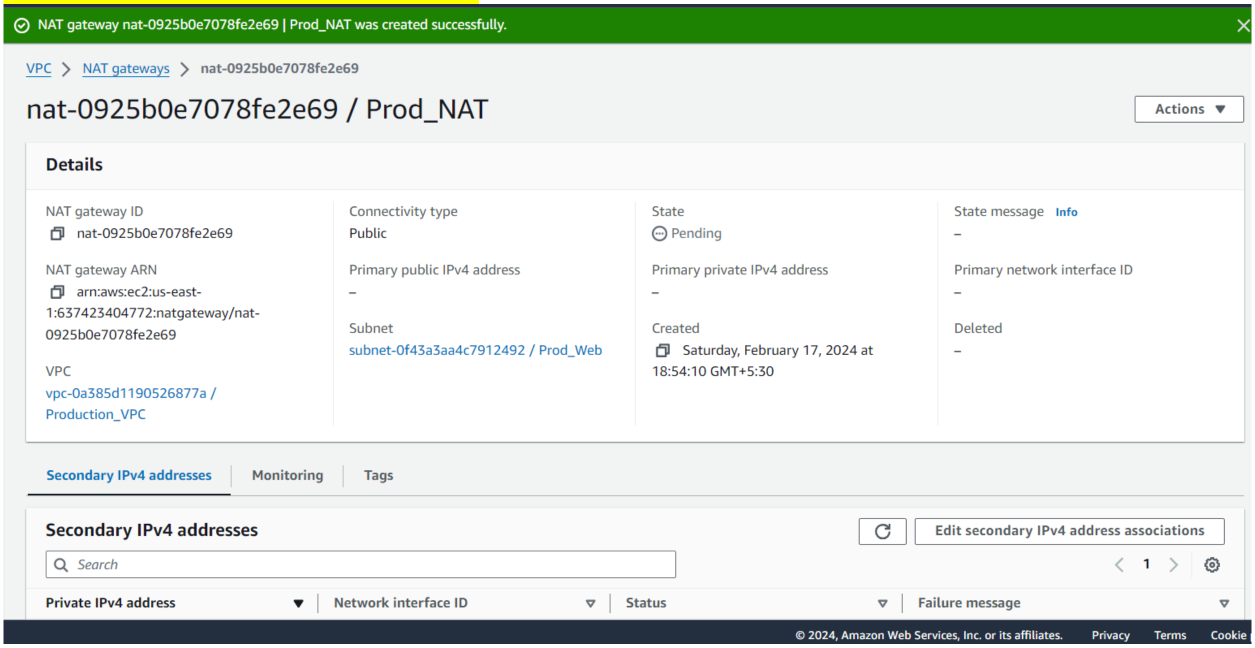
VPC
vpc-0a385d1190526877a | Production_VPC

Owner ID
637423404772

Explicit subnet associations (1)

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
Prod_Web	subnet-0f43a3aa4c7912492	10.10.4.0/24	–

Created NAT gateway in web subnet



NAT gateway nat-0925b0e7078fe2e69 | Prod_NAT was created successfully.

VPC > NAT gateways > nat-0925b0e7078fe2e69

nat-0925b0e7078fe2e69 / Prod_NAT

Details

NAT gateway ID
nat-0925b0e7078fe2e69

Connectivity type
Public

State
Pending

State message Info
–

NAT gateway ARN
arn:aws:ec2:us-east-1:637423404772:natgateway/nat-0925b0e7078fe2e69

Primary public IPv4 address
–

Primary private IPv4 address
–

Primary network interface ID
–

Subnet
subnet-0f43a3aa4c7912492 / Prod_Web

Created
Saturday, February 17, 2024 at 18:54:10 GMT+5:30

Deleted
–

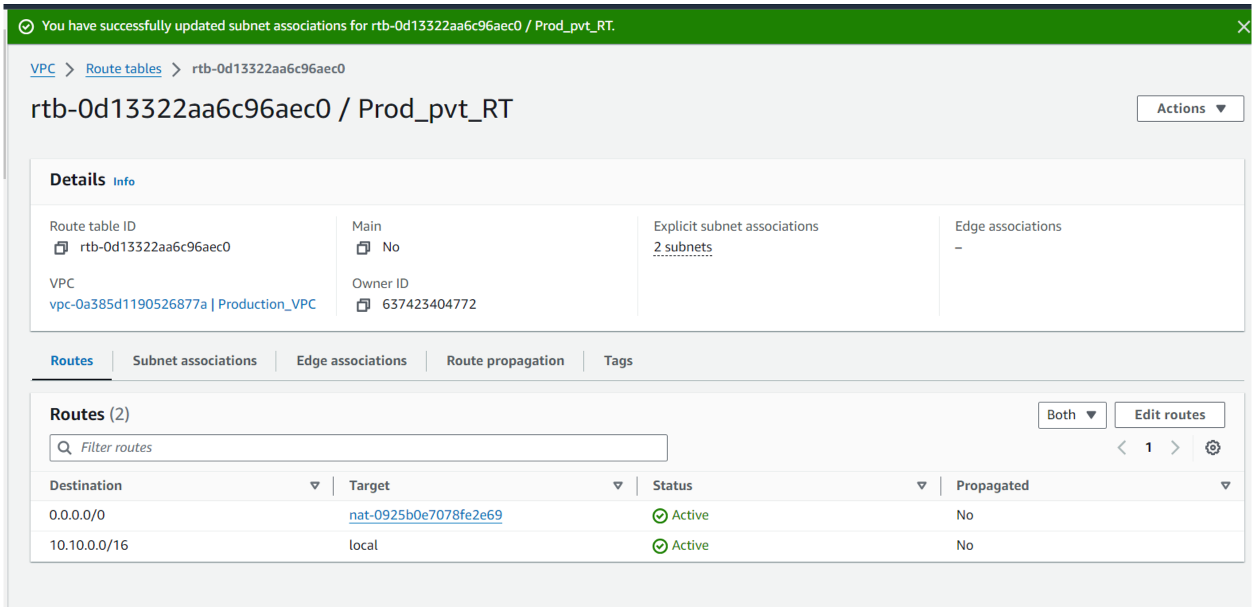
VPC
vpc-0a385d1190526877a / Production_VPC

Secondary IPv4 addresses

Private IPv4 address	Network interface ID	Status	Failure message

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie

Created pvt route table & update nat gateway entries in PVT route table and associate it with app1 & dbcache subnet



You have successfully updated subnet associations for rtb-0d13322aa6c96aec0 / Prod_pvt_RT.

rtb-0d13322aa6c96aec0 / Prod_pvt_RT

Details Info

Route table ID: rtb-0d13322aa6c96aec0

Main: No

Explicit subnet associations: 2 subnets

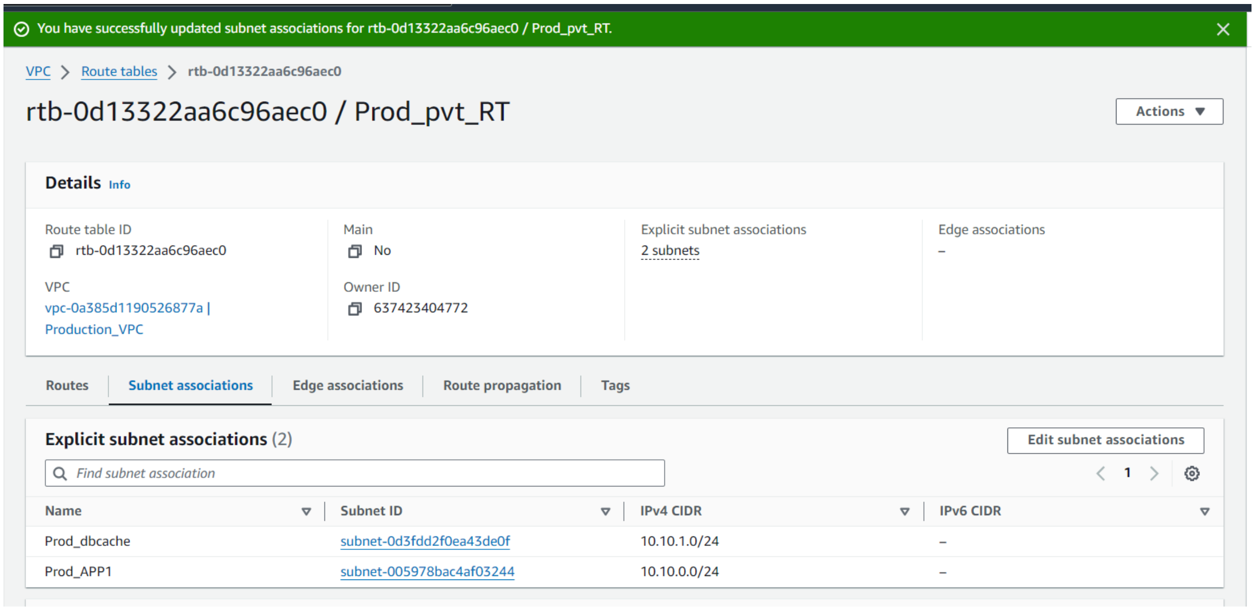
Edge associations: –

VPC: vpc-0a385d1190526877a | Production_VPC

Owner ID: 637423404772

Routes (2)

Destination	Target	Status	Propagated
0.0.0.0/0	nat-0925b0e7078fe2e69	✓ Active	No
10.10.0.0/16	local	✓ Active	No



You have successfully updated subnet associations for rtb-0d13322aa6c96aec0 / Prod_pvt_RT.

rtb-0d13322aa6c96aec0 / Prod_pvt_RT

Details Info

Route table ID: rtb-0d13322aa6c96aec0

Main: No

Explicit subnet associations: 2 subnets

Edge associations: –

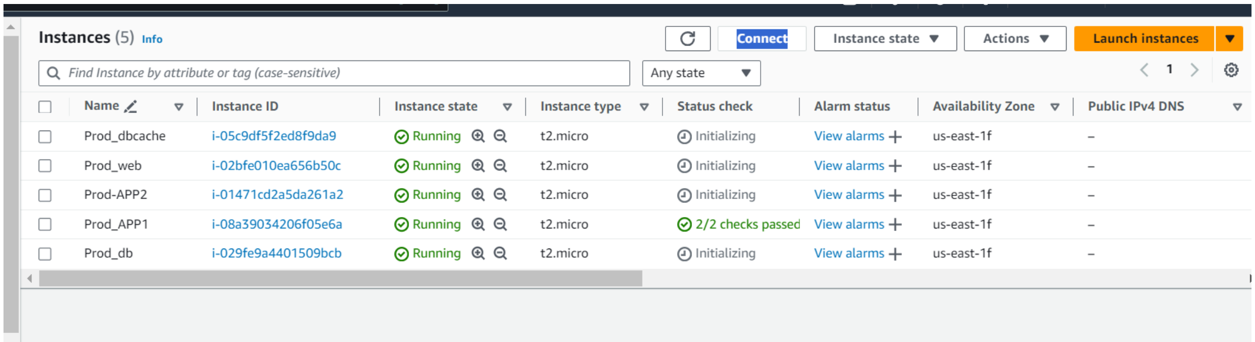
VPC: vpc-0a385d1190526877a | Production_VPC

Owner ID: 637423404772

Explicit subnet associations (2)

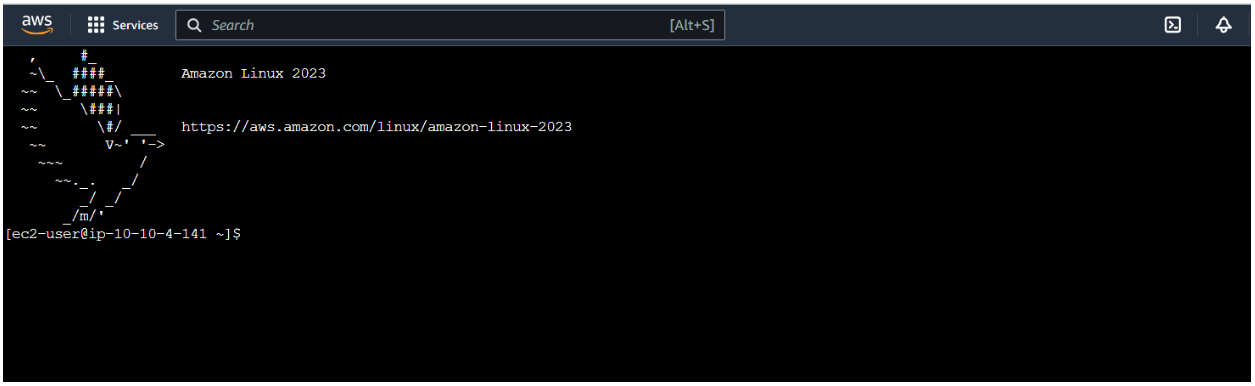
Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
Prod_dbcache	subnet-0d3fdd2f0ea43de0f	10.10.1.0/24	–
Prod_APP1	subnet-005978bac4af03244	10.10.0.0/24	–

Created 5 instances in all the 5 subnts & While creating intances choose amazon linux as AMI, Choose t2.micro instance type , created key pair & update network settings, created security group and allow all traffic



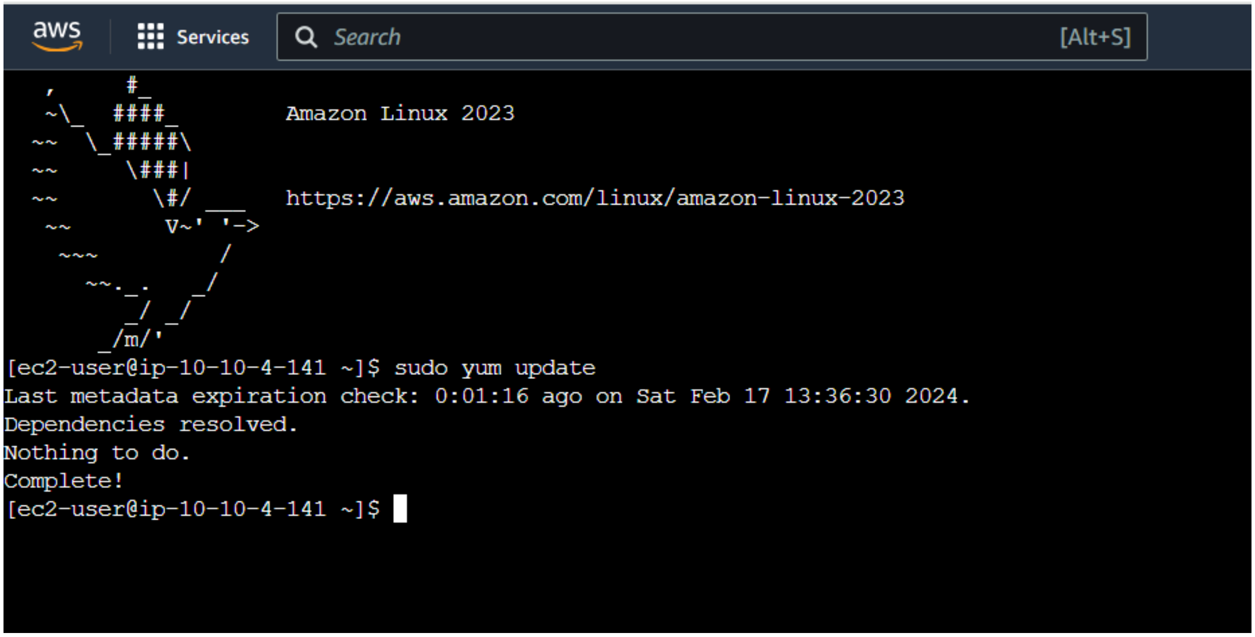
☐	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
☐	Prod_dbcache	i-05c9df5f2ed8f9da9	✓ Running	t2.micro	Initializing	View alarms +	us-east-1f	–
☐	Prod_web	i-02bfe010ea656b50c	✓ Running	t2.micro	Initializing	View alarms +	us-east-1f	–
☐	Prod-APP2	i-01471cd2a5da261a2	✓ Running	t2.micro	Initializing	View alarms +	us-east-1f	–
☐	Prod_APP1	i-08a39034206f05e6a	✓ Running	t2.micro	✓ 2/2 checks passed	View alarms +	us-east-1f	–
☐	Prod_db	i-029fe9a4401509bcb	✓ Running	t2.micro	Initializing	View alarms +	us-east-1f	–

connect to prod_web instance



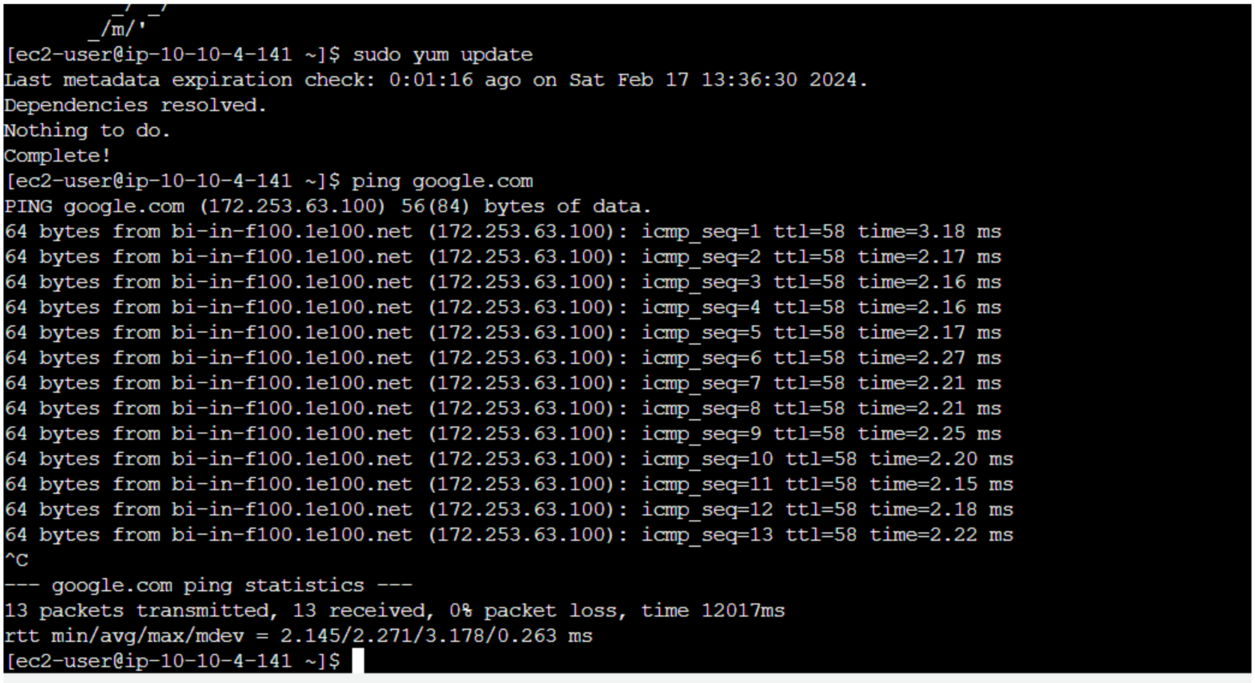
```
   ,     #_
   ~\_  ####_        Amazon Linux 2023
  ~~  \_#####\
  ~~     \###|
  ~~       \#/ ___   https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
      ~~._.   _/
         _/ _/
       _/m/'
[ec2-user@ip-10-10-4-141 ~]$
```

Run sudo yum update



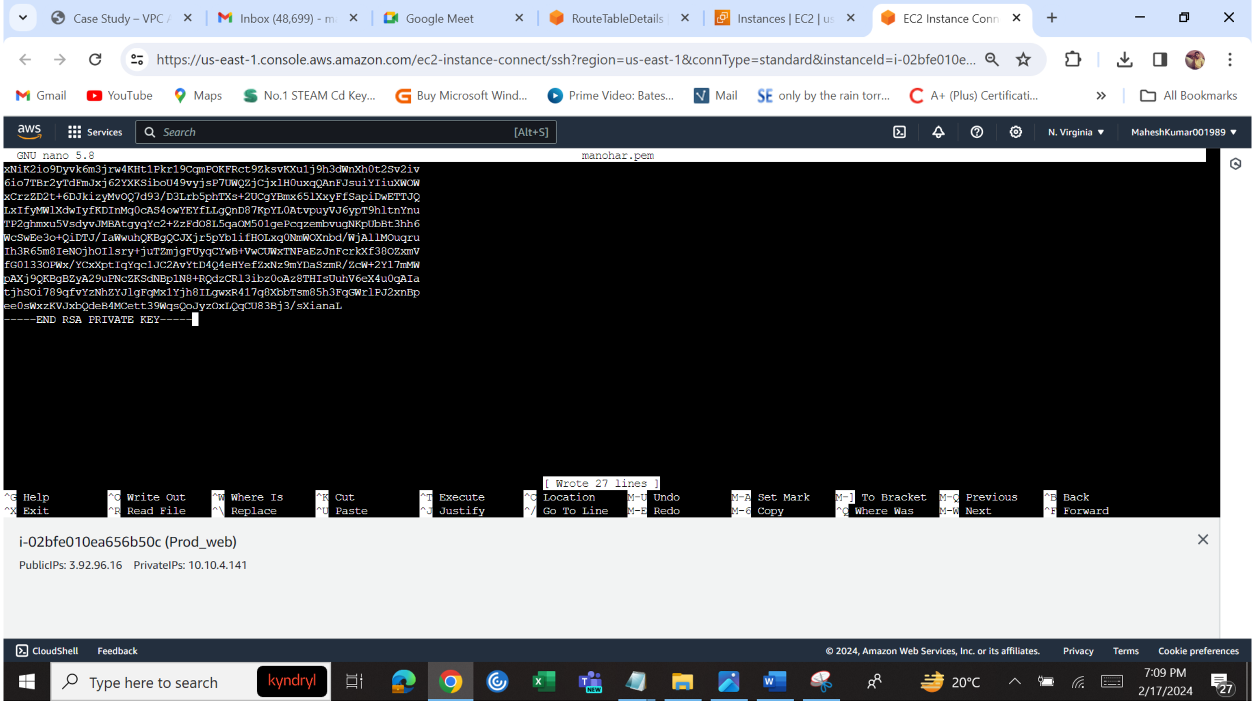
```
   ,     #_
   ~\_  ####_        Amazon Linux 2023
  ~~  \_#####\
  ~~     \###|
  ~~       \#/ ___   https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
      ~~._.   _/
         _/ _/
       _/m/'
[ec2-user@ip-10-10-4-141 ~]$ sudo yum update
Last metadata expiration check: 0:01:16 ago on Sat Feb 17 13:36:30 2024.
Dependencies resolved.
Nothing to do.
Complete!
[ec2-user@ip-10-10-4-141 ~]$
```

Ping google.com



```
       _/ _/
      _/m/'
[ec2-user@ip-10-10-4-141 ~]$ sudo yum update
Last metadata expiration check: 0:01:16 ago on Sat Feb 17 13:36:30 2024.
Dependencies resolved.
Nothing to do.
Complete!
[ec2-user@ip-10-10-4-141 ~]$ ping google.com
PING google.com (172.253.63.100) 56(84) bytes of data.
64 bytes from bi-in-f100.1e100.net (172.253.63.100): icmp_seq=1 ttl=58 time=3.18 ms
64 bytes from bi-in-f100.1e100.net (172.253.63.100): icmp_seq=2 ttl=58 time=2.17 ms
64 bytes from bi-in-f100.1e100.net (172.253.63.100): icmp_seq=3 ttl=58 time=2.16 ms
64 bytes from bi-in-f100.1e100.net (172.253.63.100): icmp_seq=4 ttl=58 time=2.16 ms
64 bytes from bi-in-f100.1e100.net (172.253.63.100): icmp_seq=5 ttl=58 time=2.17 ms
64 bytes from bi-in-f100.1e100.net (172.253.63.100): icmp_seq=6 ttl=58 time=2.27 ms
64 bytes from bi-in-f100.1e100.net (172.253.63.100): icmp_seq=7 ttl=58 time=2.21 ms
64 bytes from bi-in-f100.1e100.net (172.253.63.100): icmp_seq=8 ttl=58 time=2.21 ms
64 bytes from bi-in-f100.1e100.net (172.253.63.100): icmp_seq=9 ttl=58 time=2.25 ms
64 bytes from bi-in-f100.1e100.net (172.253.63.100): icmp_seq=10 ttl=58 time=2.20 ms
64 bytes from bi-in-f100.1e100.net (172.253.63.100): icmp_seq=11 ttl=58 time=2.15 ms
64 bytes from bi-in-f100.1e100.net (172.253.63.100): icmp_seq=12 ttl=58 time=2.18 ms
64 bytes from bi-in-f100.1e100.net (172.253.63.100): icmp_seq=13 ttl=58 time=2.22 ms
^C
--- google.com ping statistics ---
13 packets transmitted, 13 received, 0% packet loss, time 12017ms
rtt min/avg/max/mdev = 2.145/2.271/3.178/0.263 ms
[ec2-user@ip-10-10-4-141 ~]$
```

Login to dbcache instance



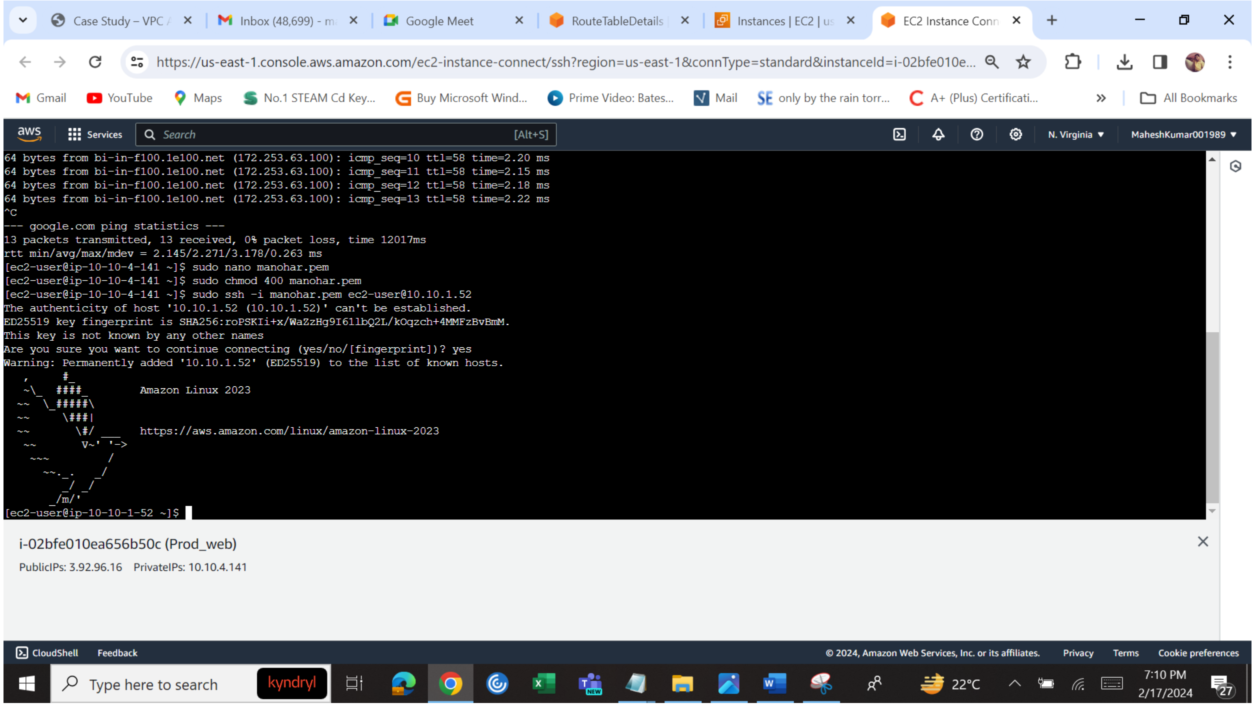
```
  GNU nano 5.8                                manohar.pem
xNiK2io9Dyvk6m3jrw4KHt1Pkr19CqmPOKFRct9ZksvKXu1j9h3dWnXh0t2Sv2iv
6io7TBr2yTdFmJxj62YXKSiboU49vyjsP7UWQZjCjxlH0uxqQAnFJsuiYIiuXWOW
xCrzZD2t+6DJkizyMvOQ7d93/D3Lrb5phTXs+2UCgYBmx65lXxyFfSapiDwETTJQ
LxIfyMWlXdwIyfKDInMq0cAS4owYEYfLLgQnD87KpYL0AtvpuyVJ6ypT9hltnYnu
TP2ghmxu5VsdyvJMBAtgyqYc2+ZzFdO8L5qaOM501gePcqzembvugNKpUbBt3hh6
WcSwEe3o+QiDTJ/IaWwuhQKBgQCJXjr5pYb1ifHOLxq0NmWOXnbd/WjAllMOuqru
Ih3R65m8IeNOjhOIlsry+juTZmjgFUyqCYwB+VwCUWxTNPaEzJnFcrkXf38OZxmV
fG0133OPWx/YCxXptIqYqc1JC2AvYtD4Q4eHYefZxNz9mYDaSzmR/ZcW+2Yl7mMW
pAXj9QKBgBZyA29uPNcZKSdNBp1N8+RQdzCRl3ibz0oAz8THIsUuhV6eX4u0qAIa
tjhSOi789qfvYzNhZYJlgFqMx1Yjh8ILgwxR417q8XbbTsm85h3FqGWrlPJ2xnBp
ee0sWxzKVJxbQdeB4MCett39WqsQoJyzOxLQqCU83Bj3/sXianaL
-----END RSA PRIVATE KEY-----




                                     [ Wrote 27 lines ]
^G Help       ^O Write Out  ^W Where Is   ^K Cut        ^T Execute    ^C Location   M-U Undo      M-A Set Mark  M-] To Bracket M-Q Previous  ^B Back
^X Exit       ^R Read File  ^\ Replace    ^U Paste      ^J Justify    ^/ Go To Line M-E Redo      M-6 Copy      ^Q Where Was   M-W Next      ^F Forward
```

i-02bfe010ea656b50c (Prod_web)

PublicIPs: 3.92.96.16 PrivateIPs: 10.10.4.141



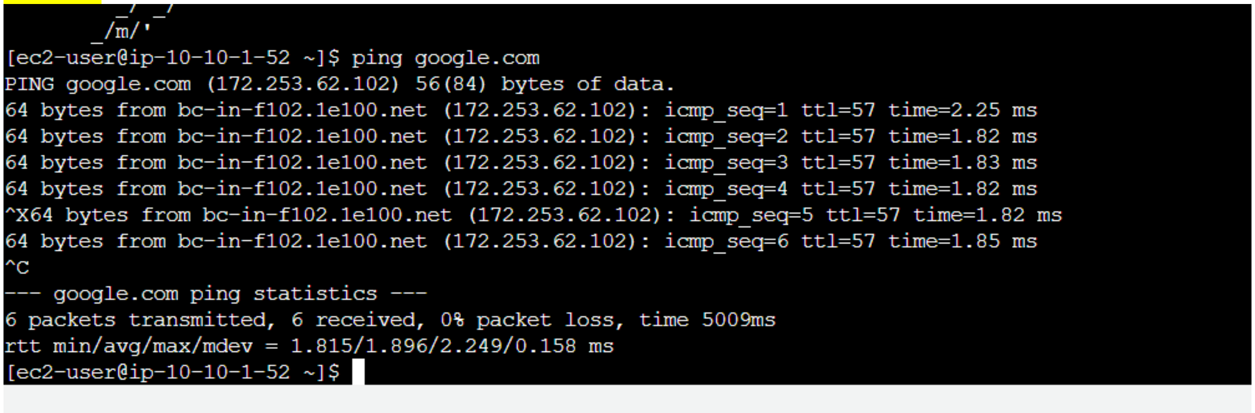
```
64 bytes from bi-in-f100.1e100.net (172.253.63.100): icmp_seq=10 ttl=58 time=2.20 ms
64 bytes from bi-in-f100.1e100.net (172.253.63.100): icmp_seq=11 ttl=58 time=2.15 ms
64 bytes from bi-in-f100.1e100.net (172.253.63.100): icmp_seq=12 ttl=58 time=2.18 ms
64 bytes from bi-in-f100.1e100.net (172.253.63.100): icmp_seq=13 ttl=58 time=2.22 ms
^C
--- google.com ping statistics ---
13 packets transmitted, 13 received, 0% packet loss, time 12017ms
rtt min/avg/max/mdev = 2.145/2.271/3.178/0.263 ms
[ec2-user@ip-10-10-4-141 ~]$ sudo nano manohar.pem
[ec2-user@ip-10-10-4-141 ~]$ sudo chmod 400 manohar.pem
[ec2-user@ip-10-10-4-141 ~]$ sudo ssh -i manohar.pem ec2-user@10.10.1.52
The authenticity of host '10.10.1.52 (10.10.1.52)' can't be established.
ED25519 key fingerprint is SHA256:roPSKIi+x/WaZzHg9I61lbQ2L/kOqzch+4MMFzBvBmM.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '10.10.1.52' (ED25519) to the list of known hosts.
   ,     #_
   ~\_  ####_        Amazon Linux 2023
  ~~  \_#####\
  ~~     \###|
  ~~       \#/ ___   https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
      ~~._.   _/
         _/ _/
       _/m/'
[ec2-user@ip-10-10-1-52 ~]$
```

i-02bfe010ea656b50c (Prod_web)

PublicIPs: 3.92.96.16 PrivateIPs: 10.10.4.141

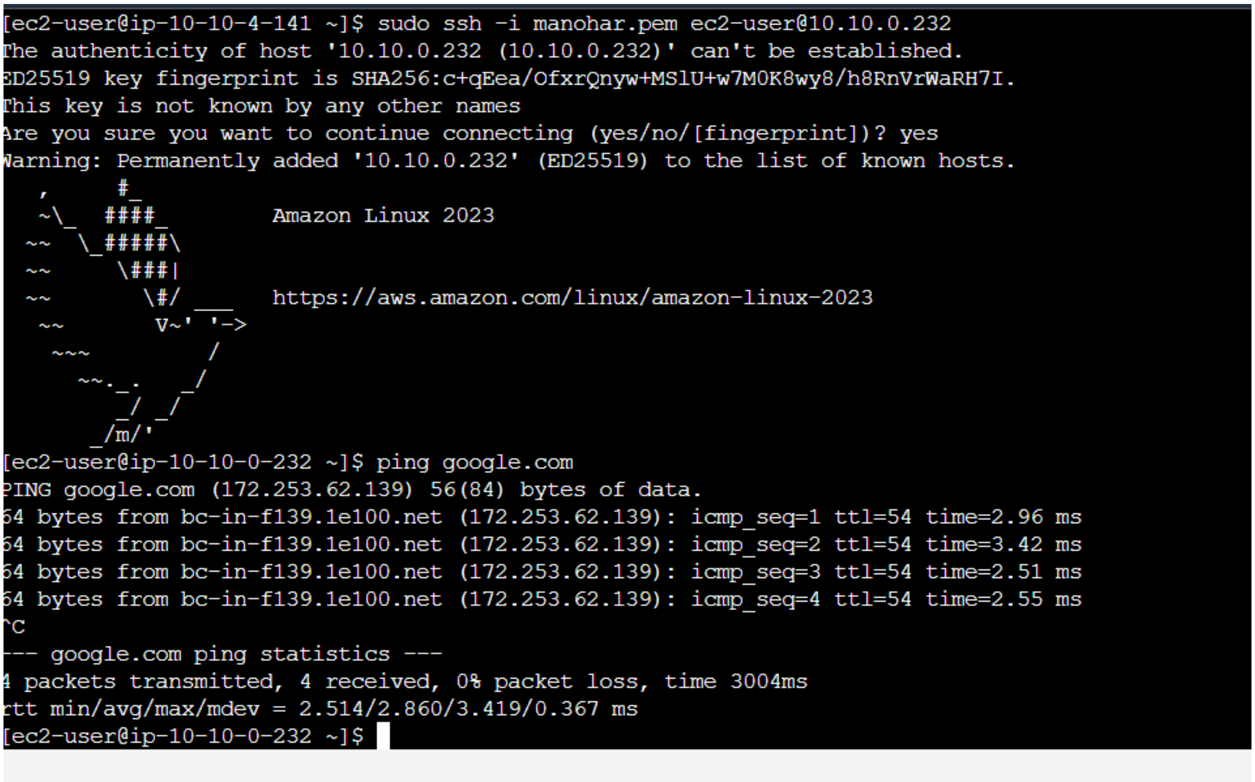
Ip address of dbcache instance is 10.10.1.52

Ping google.com in dbcache instance & able to ping so it shows natgatway is routing traffic to internet



```
         _/ _/
       _/m/'
[ec2-user@ip-10-10-1-52 ~]$ ping google.com
PING google.com (172.253.62.102) 56(84) bytes of data.
64 bytes from bc-in-f102.1e100.net (172.253.62.102): icmp_seq=1 ttl=57 time=2.25 ms
64 bytes from bc-in-f102.1e100.net (172.253.62.102): icmp_seq=2 ttl=57 time=1.82 ms
64 bytes from bc-in-f102.1e100.net (172.253.62.102): icmp_seq=3 ttl=57 time=1.83 ms
64 bytes from bc-in-f102.1e100.net (172.253.62.102): icmp_seq=4 ttl=57 time=1.82 ms
^X64 bytes from bc-in-f102.1e100.net (172.253.62.102): icmp_seq=5 ttl=57 time=1.82 ms
64 bytes from bc-in-f102.1e100.net (172.253.62.102): icmp_seq=6 ttl=57 time=1.85 ms
^C
--- google.com ping statistics ---
6 packets transmitted, 6 received, 0% packet loss, time 5009ms
rtt min/avg/max/mdev = 1.815/1.896/2.249/0.158 ms
[ec2-user@ip-10-10-1-52 ~]$
```

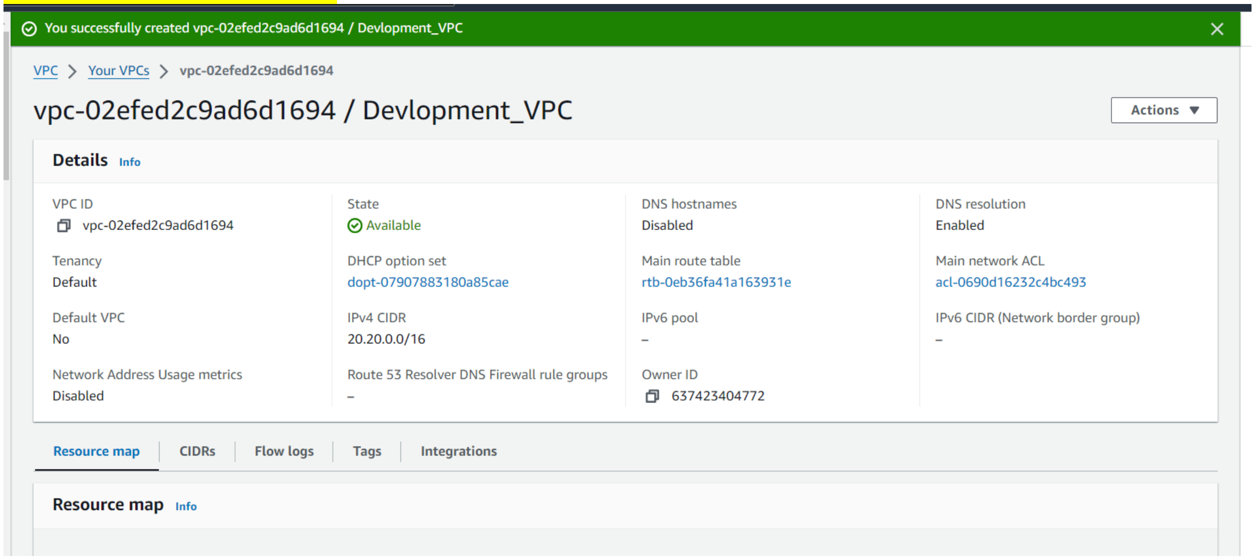
Ping google.com in app1 instance & able to ping so it shows natgateway is routing traffic to internet



```
[ec2-user@ip-10-10-4-141 ~]$ sudo ssh -i manohar.pem ec2-user@10.10.0.232
The authenticity of host '10.10.0.232 (10.10.0.232)' can't be established.
ED25519 key fingerprint is SHA256:c+qEea/OfxrQnyw+MS1U+w7M0K8wy8/h8RnVrWaRH7I.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '10.10.0.232' (ED25519) to the list of known hosts.
   ,     #_
   ~\_  ####_        Amazon Linux 2023
  ~~  \_#####\
  ~~     \###|
  ~~       \#/ ___   https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
      ~~._.   _/
         _/ _/
       _/m/'
[ec2-user@ip-10-10-0-232 ~]$ ping google.com
PING google.com (172.253.62.139) 56(84) bytes of data.
64 bytes from bc-in-f139.1e100.net (172.253.62.139): icmp_seq=1 ttl=54 time=2.96 ms
64 bytes from bc-in-f139.1e100.net (172.253.62.139): icmp_seq=2 ttl=54 time=3.42 ms
64 bytes from bc-in-f139.1e100.net (172.253.62.139): icmp_seq=3 ttl=54 time=2.51 ms
64 bytes from bc-in-f139.1e100.net (172.253.62.139): icmp_seq=4 ttl=54 time=2.55 ms
^C
--- google.com ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3004ms
rtt min/avg/max/mdev = 2.514/2.860/3.419/0.367 ms
[ec2-user@ip-10-10-0-232 ~]$
```

Ip address of app1 instance is 10.10.0.232

Created development VPC



You successfully created vpc-02efed2c9ad6d1694 / Devlopment_VPC

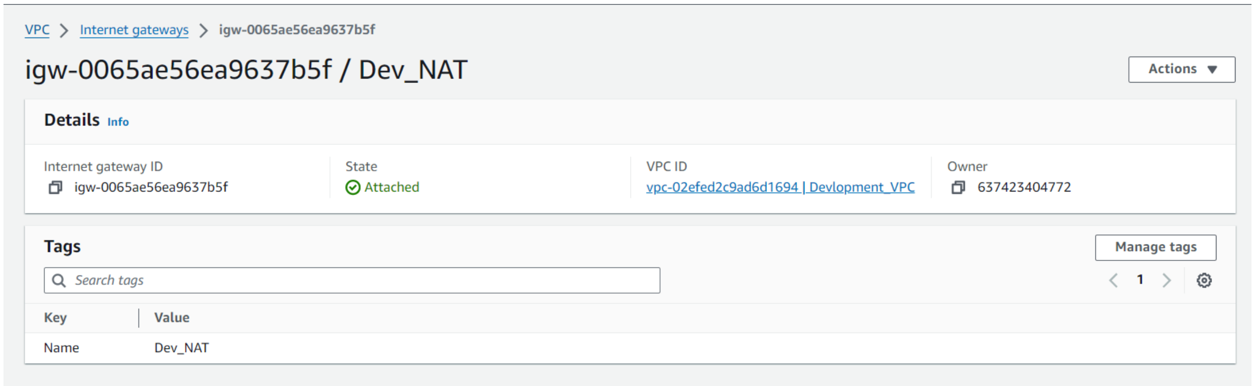
vpc-02efed2c9ad6d1694 / Devlopment_VPC

Details Info

VPC ID vpc-02efed2c9ad6d1694	State ✓ Available	DNS hostnames Disabled	DNS resolution Enabled
Tenancy Default	DHCP option set dopt-07907883180a85cae	Main route table rtb-0eb36fa41a163931e	Main network ACL acl-0690d16232c4bc493
Default VPC No	IPv4 CIDR 20.20.0.0/16	IPv6 pool –	IPv6 CIDR (Network border group) –
Network Address Usage metrics Disabled	Route 53 Resolver DNS Firewall rule groups –	Owner ID 637423404772	

Resource map Info

Created internet gateway in dev vpc & attach with devlopment vpc



igw-0065ae56ea9637b5f / Dev_NAT

Details

Internet gateway ID: igw-0065ae56ea9637b5f

State: Attached

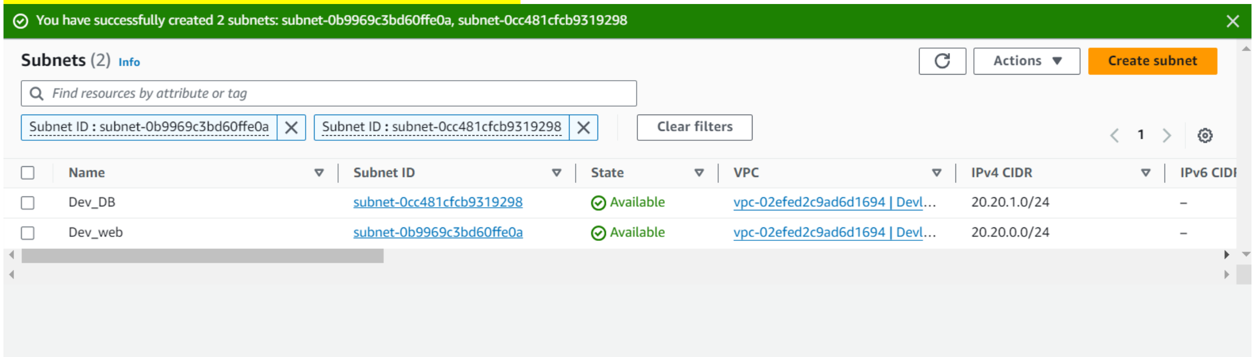
VPC ID: vpc-02efed2c9ad6d1694 | Devlopment_VPC

Owner: 637423404772

Tags

Key	Value
Name	Dev_NAT

Created 2 subnets In development VPC

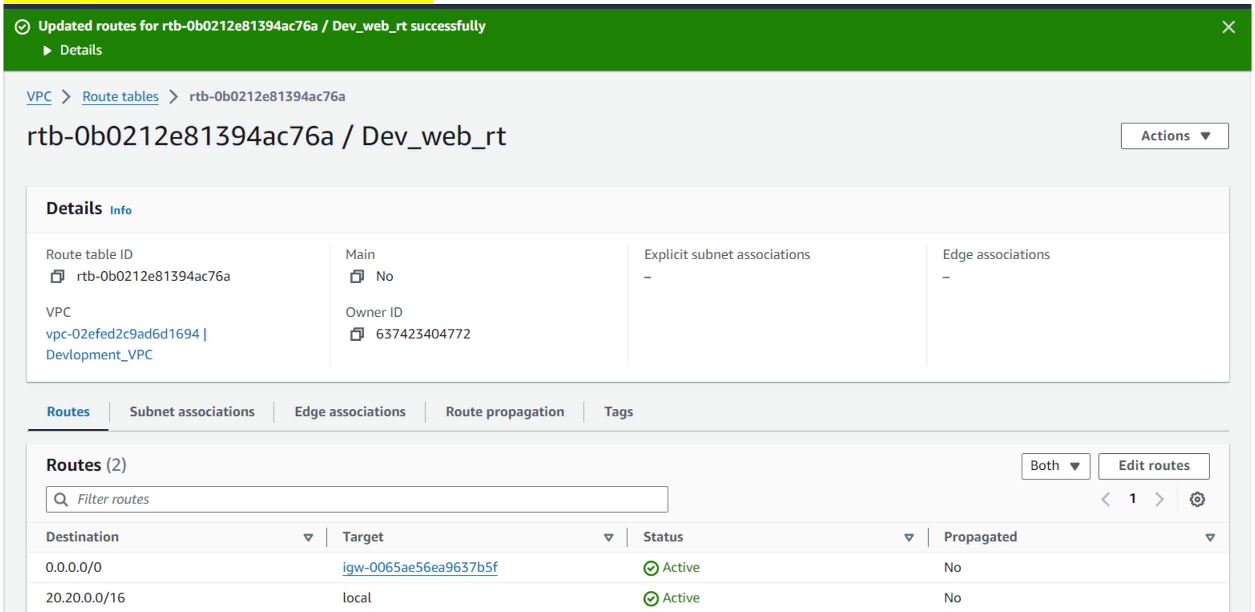

Info
Actions ▼
Create subnet
Find resources by attribute or tag
Subnet ID : subnet-0b9969c3bd60ffe0a
Subnet ID : subnet-0cc481cfcb9319298
Clear filters
1

You have successfully created 2 subnets: subnet-0b9969c3bd60ffe0a, subnet-0cc481cfcb9319298

Subnets (2)

□	Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6 CIDI
□	Dev_DB	subnet-0cc481cfcb9319298	Available	vpc-02efed2c9ad6d1694 | Devl...	20.20.1.0/24	–
□	Dev_web	subnet-0b9969c3bd60ffe0a	Available	vpc-02efed2c9ad6d1694 | Devl...	20.20.0.0/24	–

Created dev_web_RT Route table in Development VPC and attach internet gateway entry and associate it with dev_web subnet



Updated routes for rtb-0b0212e81394ac76a / Dev_web_rt successfully

rtb-0b0212e81394ac76a / Dev_web_rt

Details

Route table ID: rtb-0b0212e81394ac76a

Main: No

Explicit subnet associations: –

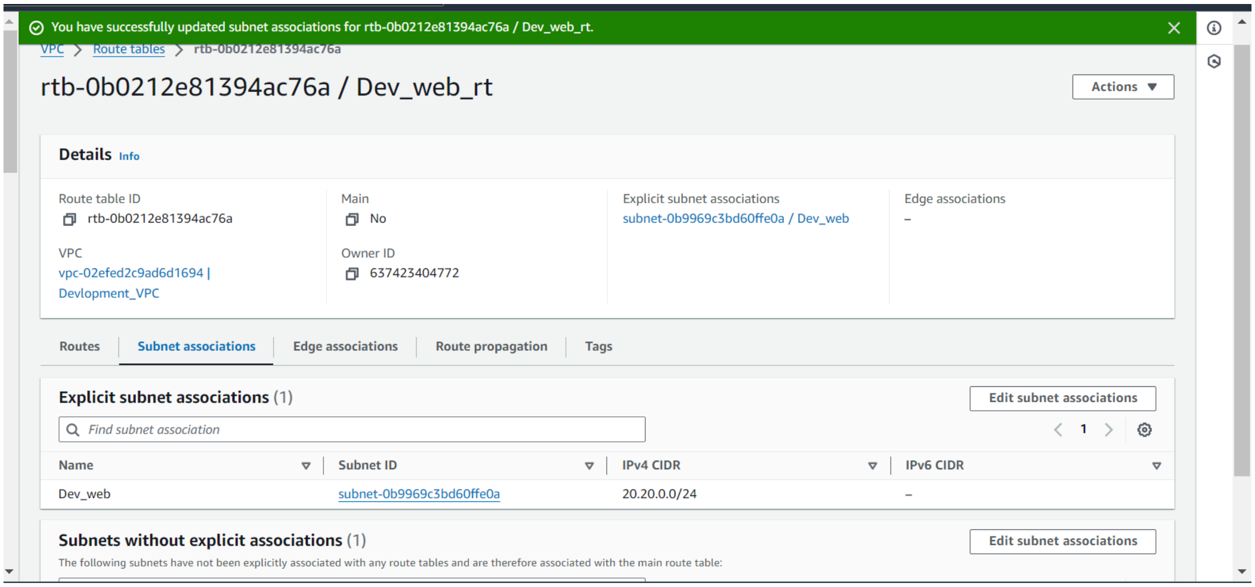
Edge associations: –

VPC: vpc-02efed2c9ad6d1694 | Devlopment_VPC

Owner ID: 637423404772

Routes (2)

Destination	Target	Status	Propagated
0.0.0.0/0	igw-0065ae56ea9637b5f	Active	No
20.20.0.0/16	local	Active	No



You have successfully updated subnet associations for rtb-0b0212e81394ac76a / Dev_web_rt.

VPC > Route tables > rtb-0b0212e81394ac76a

rtb-0b0212e81394ac76a / Dev_web_rt

Details Info

Route table ID	Main	Explicit subnet associations	Edge associations
rtb-0b0212e81394ac76a	No	subnet-0b9969c3bd60ffe0a / Dev_web	–
VPC	Owner ID		
vpc-02efed2c9ad6d1694 | Devlopment_VPC	637423404772		

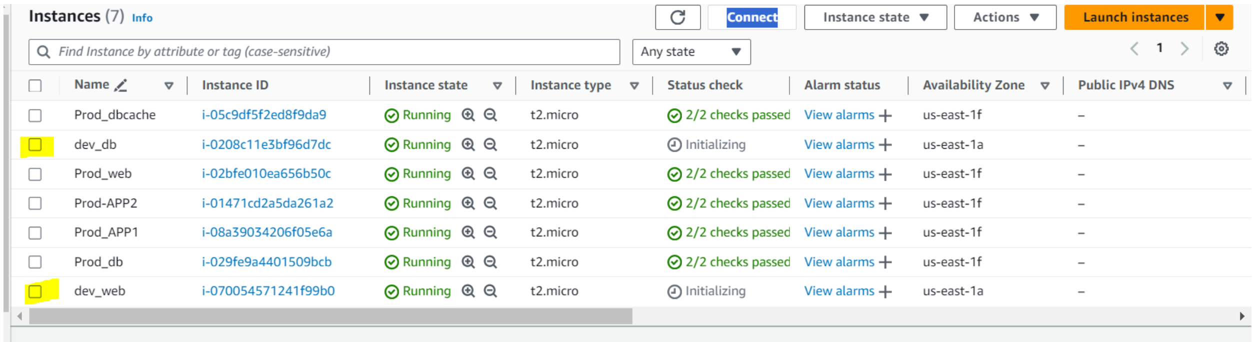
Explicit subnet associations (1)

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
Dev_web	subnet-0b9969c3bd60ffe0a	20.20.0.0/24	–

Subnets without explicit associations (1)

The following subnets have not been explicitly associated with any route tables and are therefore associated with the main route table:

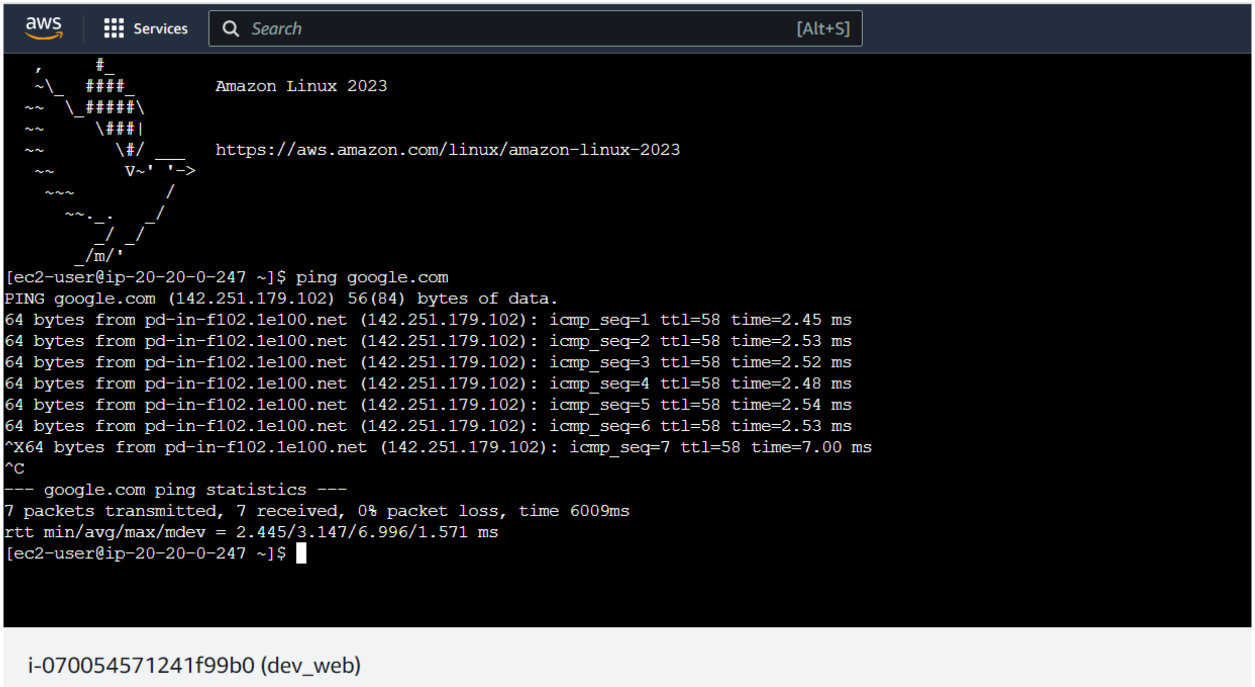
Created instances in dev_web & dev_db subnet & Choose the AMI Amazon linux, instance type is t2.micro, keypair, update network settings, created security group & allow the traffic



Instances (7) Info

□	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
□	Prod_dbcache	i-05c9df5f2ed8f9da9	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1f	–
□	dev_db	i-0208c11e3bf96d7dc	Running	t2.micro	Initializing	View alarms +	us-east-1a	–
□	Prod_web	i-02bfe010ea656b50c	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1f	–
□	Prod-APP2	i-01471cd2a5da261a2	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1f	–
□	Prod_APP1	i-08a39034206f05e6a	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1f	–
□	Prod_db	i-029fe9a4401509bcb	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1f	–
□	dev_web	i-070054571241f99b0	Running	t2.micro	Initializing	View alarms +	us-east-1a	–

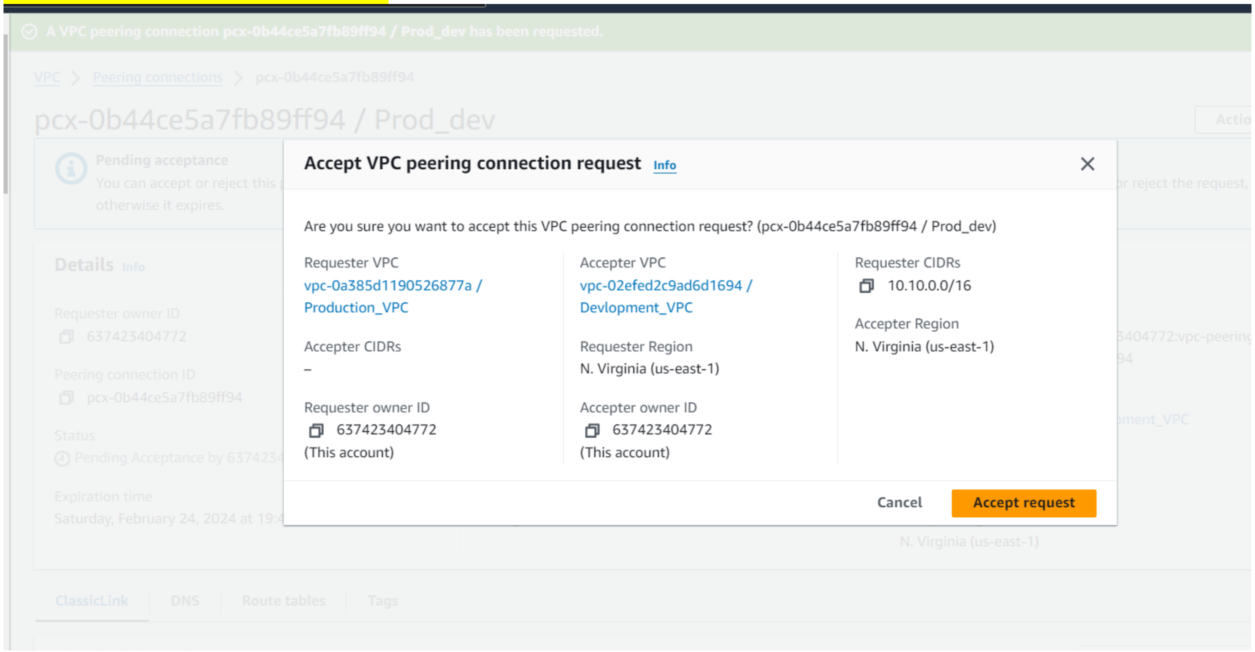
connect to dev_web instance & successfully ping google.com so it means internet gateway is routing the traffic to internet



```
   ,     #_
   ~\_  ####_        Amazon Linux 2023
  ~~  \_#####\
  ~~     \###|
  ~~       \#/ ___   https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
      ~~._.   _/
         _/ _/
       _/m/'
[ec2-user@ip-20-20-0-247 ~]$ ping google.com
PING google.com (142.251.179.102) 56(84) bytes of data.
64 bytes from pd-in-f102.1e100.net (142.251.179.102): icmp_seq=1 ttl=58 time=2.45 ms
64 bytes from pd-in-f102.1e100.net (142.251.179.102): icmp_seq=2 ttl=58 time=2.53 ms
64 bytes from pd-in-f102.1e100.net (142.251.179.102): icmp_seq=3 ttl=58 time=2.52 ms
64 bytes from pd-in-f102.1e100.net (142.251.179.102): icmp_seq=4 ttl=58 time=2.48 ms
64 bytes from pd-in-f102.1e100.net (142.251.179.102): icmp_seq=5 ttl=58 time=2.54 ms
64 bytes from pd-in-f102.1e100.net (142.251.179.102): icmp_seq=6 ttl=58 time=2.53 ms
^X64 bytes from pd-in-f102.1e100.net (142.251.179.102): icmp_seq=7 ttl=58 time=7.00 ms
^C
--- google.com ping statistics ---
7 packets transmitted, 7 received, 0% packet loss, time 6009ms
rtt min/avg/max/mdev = 2.445/3.147/6.996/1.571 ms
[ec2-user@ip-20-20-0-247 ~]$ 
```

i-070054571241f99b0 (dev_web)

Created a peering connection



A VPC peering connection pcx-0b44ce5a7fb89ff94 / Prod_dev has been requested.

pcx-0b44ce5a7fb89ff94 / Prod_dev

Pending acceptance

You can accept or reject this … or reject the request, otherwise it expires.

Requester owner ID
637423404772

Peering connection ID
pcx-0b44ce5a7fb89ff94

Status
Pending Acceptance by 6374234…

Expiration time
Saturday, February 24, 2024 at 19:4…

Accept VPC peering connection request

Are you sure you want to accept this VPC peering connection request? (pcx-0b44ce5a7fb89ff94 / Prod_dev)

Requester VPC
vpc-0a385d1190526877a / Production_VPC

Accepter VPC
vpc-02efed2c9ad6d1694 / Devlopment_VPC

Requester CIDRs
10.10.0.0/16

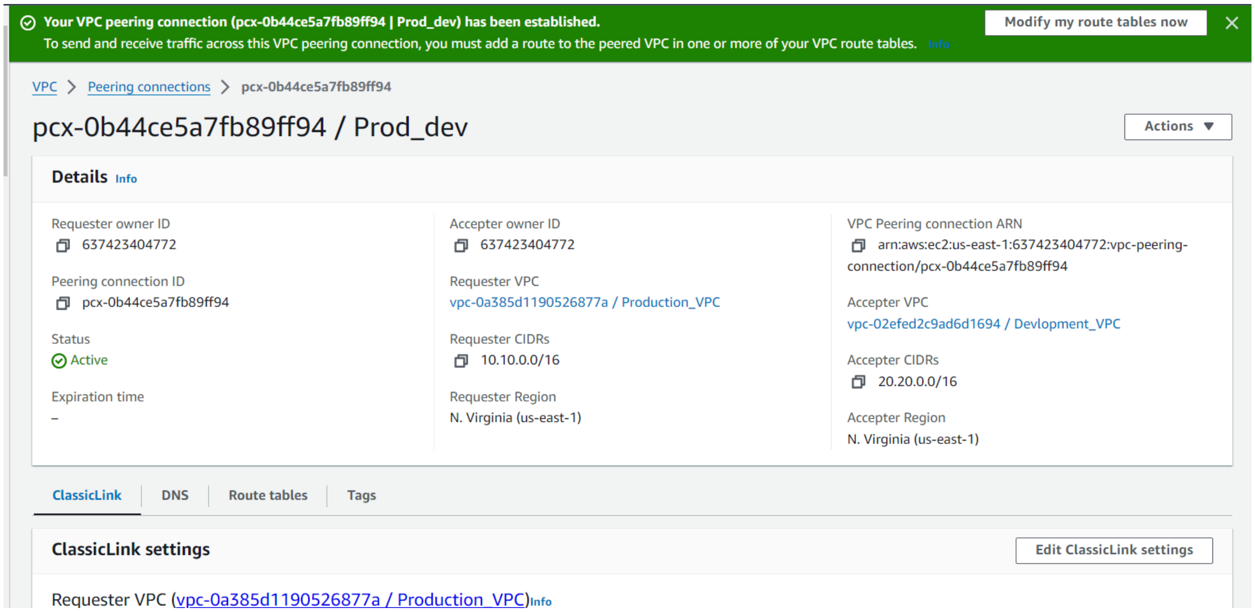
Accepter Region
N. Virginia (us-east-1)

Accepter CIDRs
–

Requester Region
N. Virginia (us-east-1)

Requester owner ID
637423404772
(This account)

Accepter owner ID
637423404772
(This account)



Your VPC peering connection (pcx-0b44ce5a7fb89ff94 | Prod_dev) has been established.
To send and receive traffic across this VPC peering connection, you must add a route to the peered VPC in one or more of your VPC route tables. Info

VPC > Peering connections > pcx-0b44ce5a7fb89ff94

pcx-0b44ce5a7fb89ff94 / Prod_dev

Details Info

Requester owner ID
637423404772

Peering connection ID
pcx-0b44ce5a7fb89ff94

Status
Active

Expiration time
–

Accepter owner ID
637423404772

Requester VPC
vpc-0a385d1190526877a / Production_VPC

Requester CIDRs
10.10.0.0/16

Requester Region
N. Virginia (us-east-1)

VPC Peering connection ARN
arn:aws:ec2:us-east-1:637423404772:vpc-peering-connection/pcx-0b44ce5a7fb89ff94

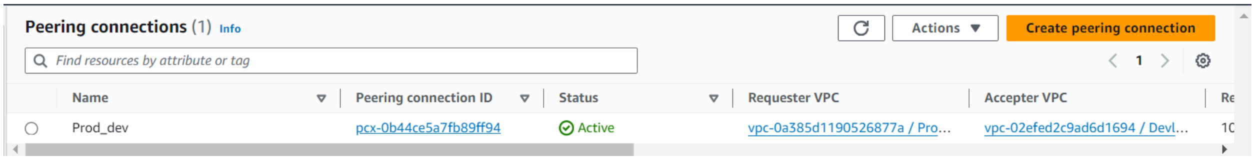
Accepter VPC
vpc-02efed2c9ad6d1694 / Devlopment_VPC

Accepter CIDRs
20.20.0.0/16

Accepter Region
N. Virginia (us-east-1)

ClassicLink settings

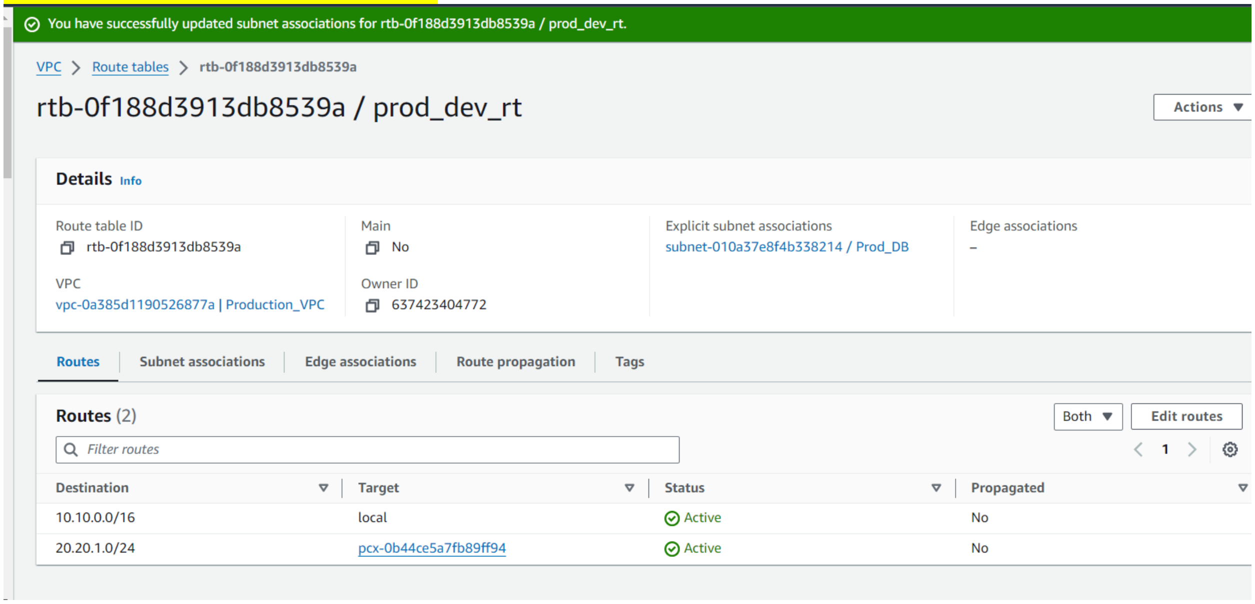
Requester VPC (vpc-0a385d1190526877a / Production_VPC)Info



Peering connections (1) Info

	Name	Peering connection ID	Status	Requester VPC	Accepter VPC	Re
○	Prod_dev	pcx-0b44ce5a7fb89ff94	Active	vpc-0a385d1190526877a / Pro…	vpc-02efed2c9ad6d1694 / Devl…	1C

Created 2 route tables to connect db subnet in prod & db subnet in dev & update route table entries and associate with subnet



You have successfully updated subnet associations for rtb-0f188d3913db8539a / prod_dev_rt.

VPC > Route tables > rtb-0f188d3913db8539a

rtb-0f188d3913db8539a / prod_dev_rt

Details Info

Route table ID
rtb-0f188d3913db8539a

VPC
vpc-0a385d1190526877a | Production_VPC

Main
No

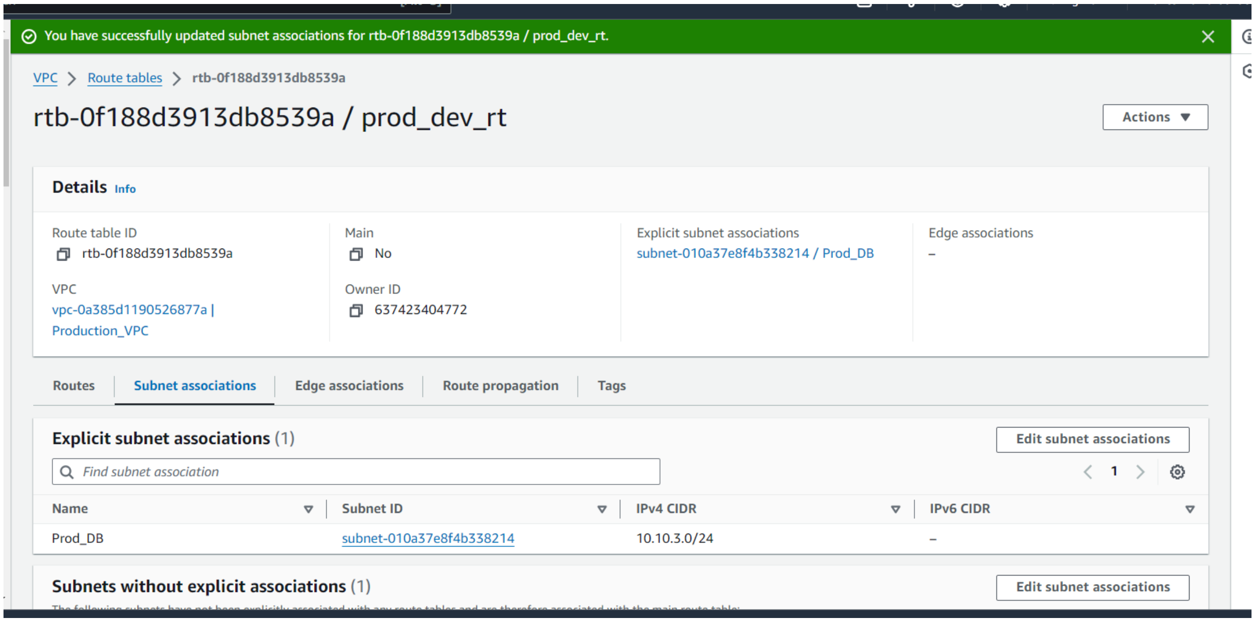
Owner ID
637423404772

Explicit subnet associations
subnet-010a37e8f4b338214 / Prod_DB

Edge associations
–

Routes (2)

Destination	Target	Status	Propagated
10.10.0.0/16	local	Active	No
20.20.1.0/24	pcx-0b44ce5a7fb89ff94	Active	No



You have successfully updated subnet associations for rtb-0f188d3913db8539a / prod_dev_rt.

VPC > Route tables > rtb-0f188d3913db8539a

rtb-0f188d3913db8539a / prod_dev_rt

Details Info

Route table ID: rtb-0f188d3913db8539a

Main: No

Explicit subnet associations: subnet-010a37e8f4b338214 / Prod_DB

Edge associations: –

VPC: vpc-0a385d1190526877a | Production_VPC

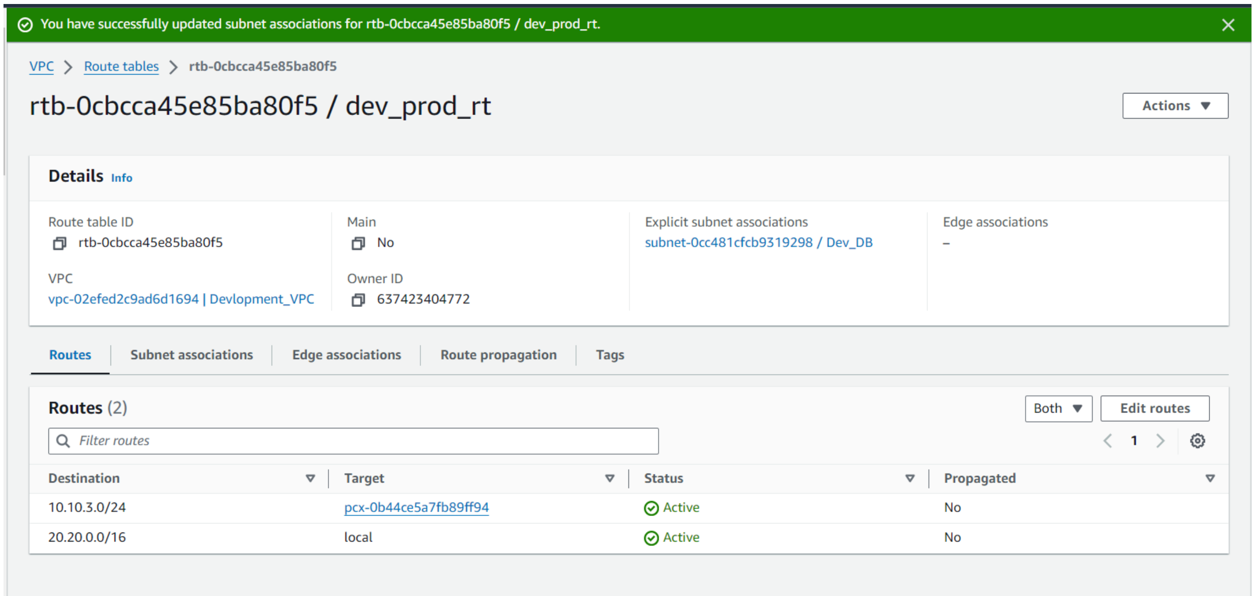
Owner ID: 637423404772

Explicit subnet associations (1)

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
Prod_DB	subnet-010a37e8f4b338214	10.10.3.0/24	–

Subnets without explicit associations (1)

The following subnets have not been explicitly associated with any route tables and are therefore associated with the main route table.



You have successfully updated subnet associations for rtb-0cbcca45e85ba80f5 / dev_prod_rt.

VPC > Route tables > rtb-0cbcca45e85ba80f5

rtb-0cbcca45e85ba80f5 / dev_prod_rt

Details Info

Route table ID: rtb-0cbcca45e85ba80f5

Main: No

Explicit subnet associations: subnet-0cc481cfcb9319298 / Dev_DB

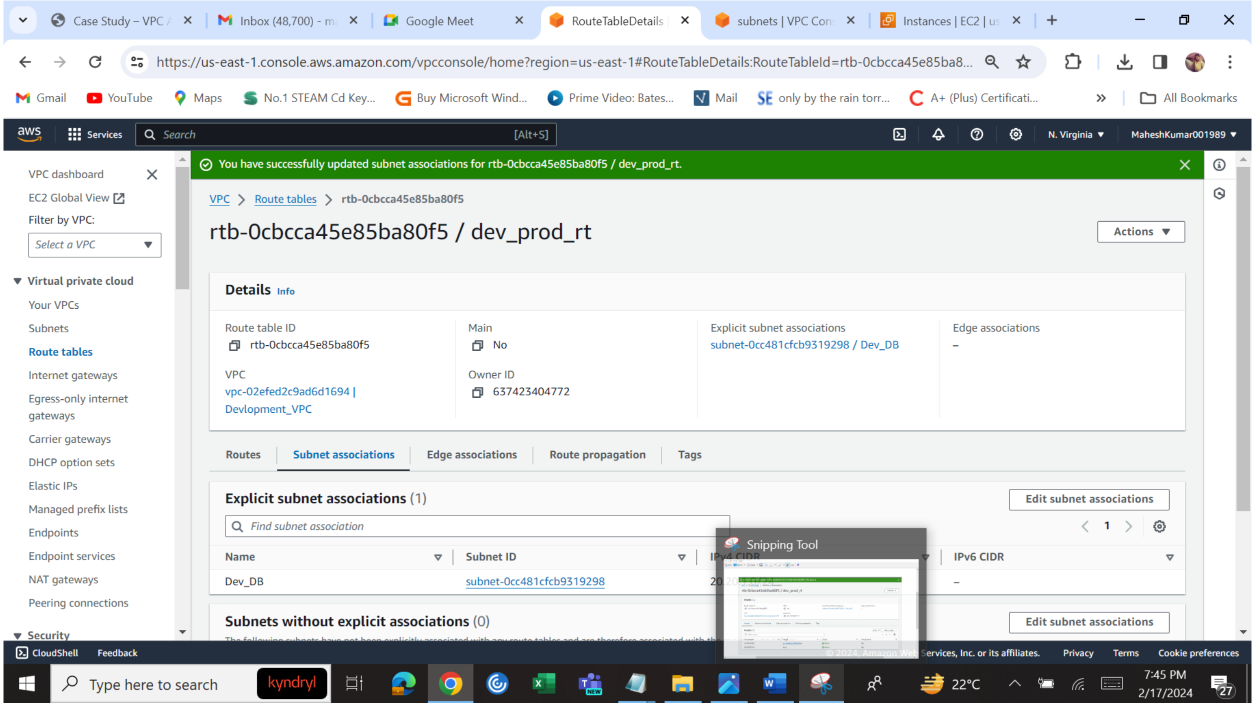
Edge associations: –

VPC: vpc-02efed2c9ad6d1694 | Devlopment_VPC

Owner ID: 637423404772

Routes (2)

Destination	Target	Status	Propagated
10.10.3.0/24	pcx-0b44ce5a7fb89ff94	✓ Active	No
20.20.0.0/16	local	✓ Active	No



You have successfully updated subnet associations for rtb-0cbcca45e85ba80f5 / dev_prod_rt.

VPC > Route tables > rtb-0cbcca45e85ba80f5

rtb-0cbcca45e85ba80f5 / dev_prod_rt

Details Info

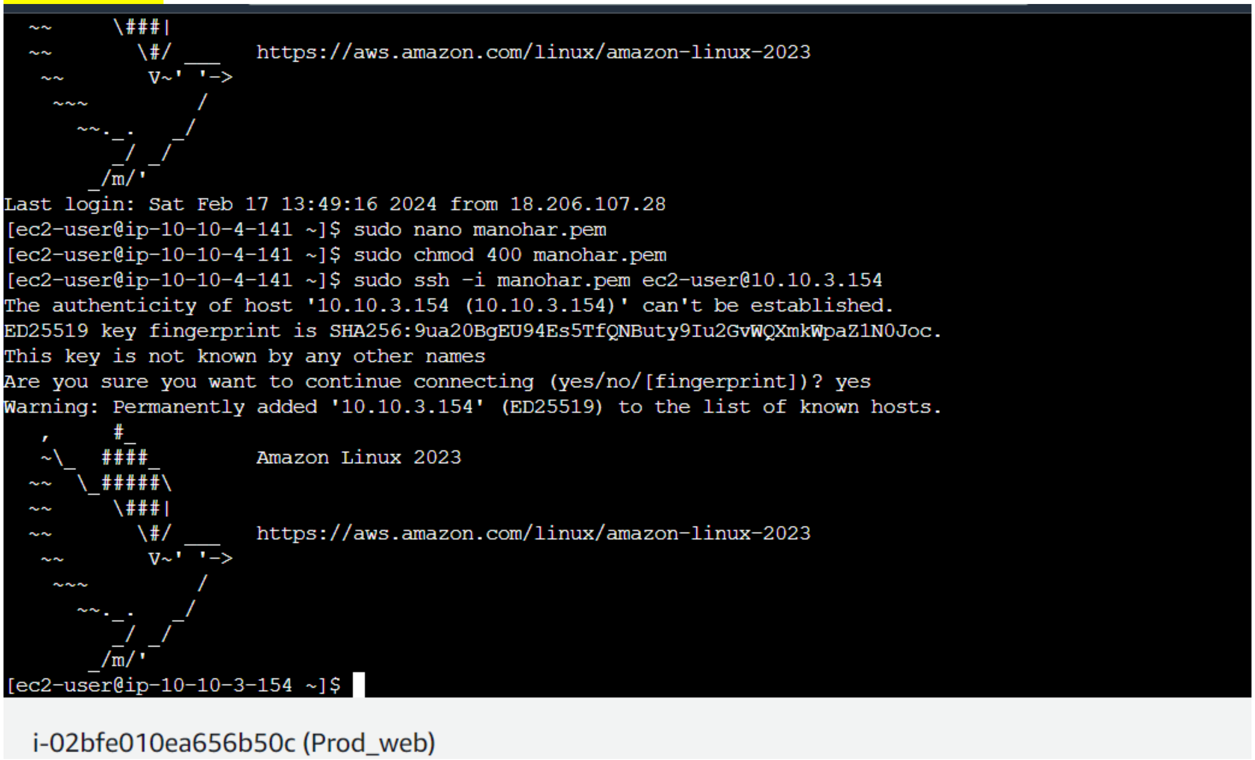
Route table ID rtb-0cbcca45e85ba80f5	Main No	Explicit subnet associations subnet-0cc481cfcb9319298 / Dev_DB	Edge associations –
VPC vpc-02efed2c9ad6d1694 | Devlopment_VPC	Owner ID 637423404772		

Explicit subnet associations (1)

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
Dev_DB	subnet-0cc481cfcb9319298	20	–

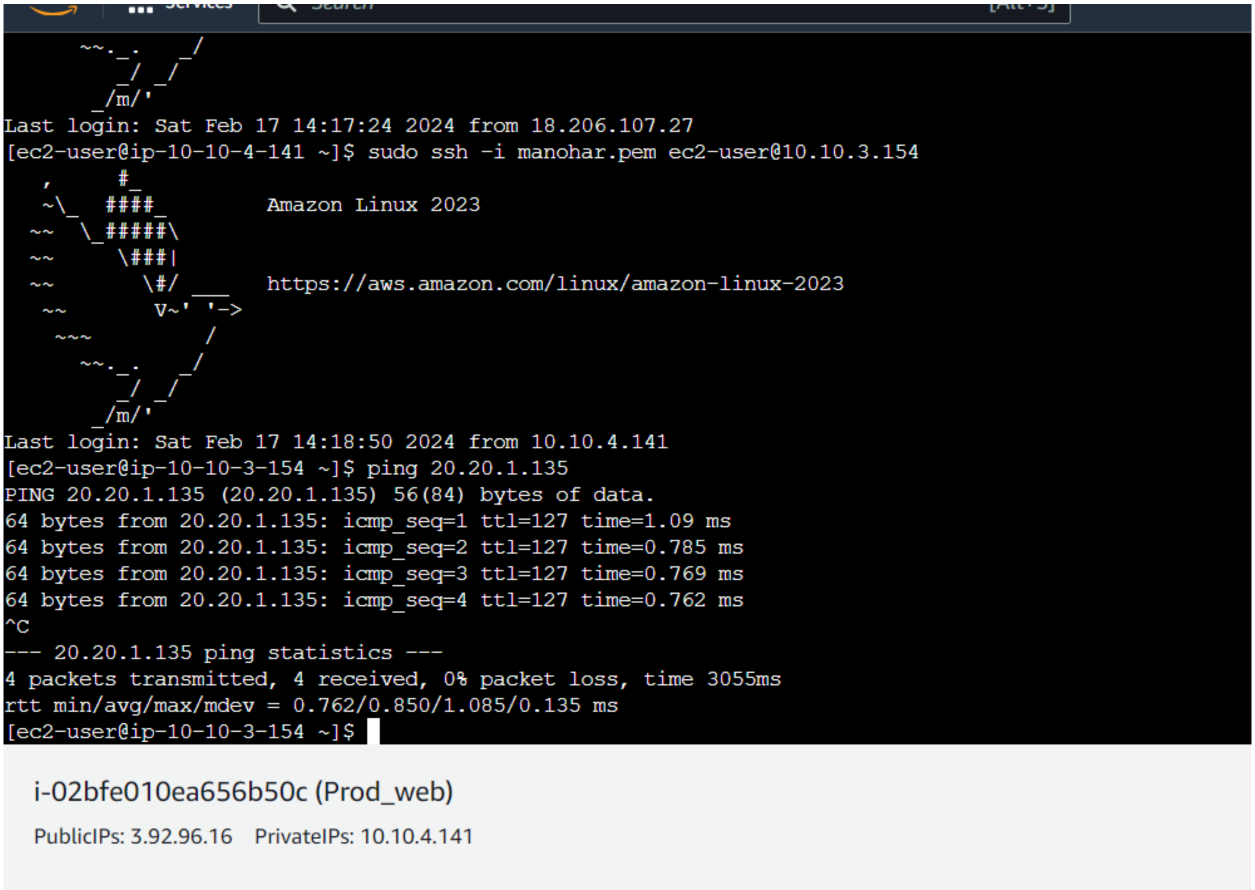
Subnets without explicit associations (0)

Connect to prod _web instance & login to prod_db instance and then ping dev_db and able to ping dev_db



```
  ~~     \###|
  ~~       \#/ ___   https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
      ~~._.   _/
         _/ _/
       _/m/'
Last login: Sat Feb 17 13:49:16 2024 from 18.206.107.28
[ec2-user@ip-10-10-4-141 ~]$ sudo nano manohar.pem
[ec2-user@ip-10-10-4-141 ~]$ sudo chmod 400 manohar.pem
[ec2-user@ip-10-10-4-141 ~]$ sudo ssh -i manohar.pem ec2-user@10.10.3.154
The authenticity of host '10.10.3.154 (10.10.3.154)' can't be established.
ED25519 key fingerprint is SHA256:9ua20BgEU94Es5TfQNButy9Iu2GvWQXmkWpaZ1N0Joc.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '10.10.3.154' (ED25519) to the list of known hosts.
   ,     #_
   ~\_  ####_        Amazon Linux 2023
  ~~  \_#####\
  ~~     \###|
  ~~       \#/ ___   https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
      ~~._.   _/
         _/ _/
       _/m/'
[ec2-user@ip-10-10-3-154 ~]$ 
```

i-02bfe010ea656b50c (Prod_web)



```
      ~~._.   _/
         _/ _/
       _/m/'
Last login: Sat Feb 17 14:17:24 2024 from 18.206.107.27
[ec2-user@ip-10-10-4-141 ~]$ sudo ssh -i manohar.pem ec2-user@10.10.3.154
   ,     #_
   ~\_  ####_        Amazon Linux 2023
  ~~  \_#####\
  ~~     \###|
  ~~       \#/ ___   https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
      ~~._.   _/
         _/ _/
       _/m/'
Last login: Sat Feb 17 14:18:50 2024 from 10.10.4.141
[ec2-user@ip-10-10-3-154 ~]$ ping 20.20.1.135
PING 20.20.1.135 (20.20.1.135) 56(84) bytes of data.
64 bytes from 20.20.1.135: icmp_seq=1 ttl=127 time=1.09 ms
64 bytes from 20.20.1.135: icmp_seq=2 ttl=127 time=0.785 ms
64 bytes from 20.20.1.135: icmp_seq=3 ttl=127 time=0.769 ms
64 bytes from 20.20.1.135: icmp_seq=4 ttl=127 time=0.762 ms
^C
--- 20.20.1.135 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3055ms
rtt min/avg/max/mdev = 0.762/0.850/1.085/0.135 ms
[ec2-user@ip-10-10-3-154 ~]$
```

i-02bfe010ea656b50c (Prod_web)

PublicIPs: 3.92.96.16   PrivateIPs: 10.10.4.141