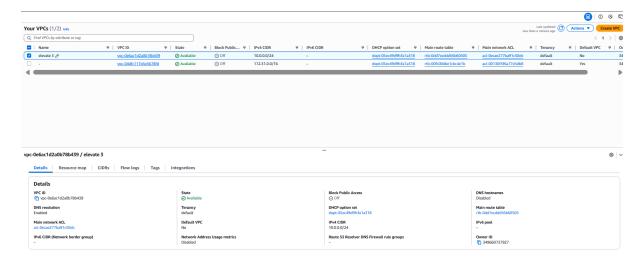
VPC has been created "elevate 3"



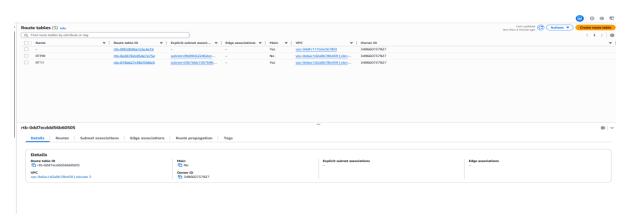
2 subnets have been created

Sub11 – public subnet-internet gateway connected

Sub22 – private subnet-Nat gateway connected



Route table:

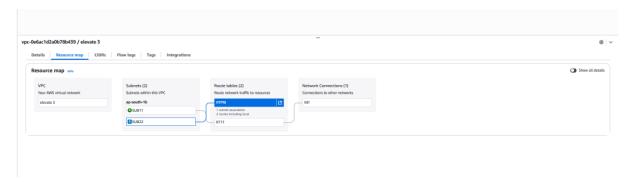


Internet gateway (INT)



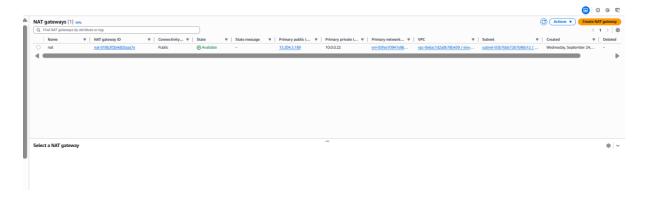
CASE 1:

Overall connection without Nat gateway:



CASE 2:

NAT GATEWAY (NAT)



OVERAL CONNECTION WITH NAT GATEWAY



Server from public subnet where internet is accessible:

```
X
                                                            root@ip-10-0-0-39:/opt
                       \times
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.
Install the latest PowerShell for new features and improvements!
 https://aka.ms/PSWindows
PS C:\Users\kanma> ssh -i "kanmani.pem" ec2-user@15.206.179.189
The authenticity of host '15.206.179.189 (15.206.179.189)' can't
be established.
ED25519 key fingerprint is SHA256:gJHMfmMjKQe46HMEZX7LnTk0BXwhEh
VzTQZZAdNMWqc.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprin
t])? yes
Warning: Permanently added '15.206.179.189' (ED25519) to the lis
t of known hosts.
         #_
        ####_
                     Amazon Linux 2023
        #####\
         \###|
  2
           \#/ ___ https://aws.amazon.com/linux/amazon-linux-2
023
            V~' '->
[ec2-user@ip-10-0-0-39 ~]$ sudo su -
[root@ip-10-0-0-39 ~]# ssh -i "kanmani.pem" ec2-user@10.0.0.118
```

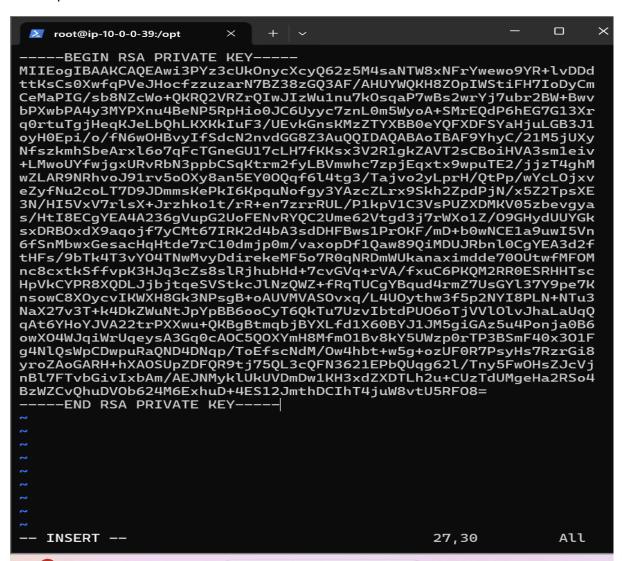
Checking internet connection in public server:

```
root@ip-10-0-0-39:/opt
[root@ip-10-0-0-39 ~]# ssh -i "kanmani.pem" ec2-user@10.0.0.118
Warning: Identity file kanmani.pem not accessible: No such file
or directory.
The authenticity of host '10.0.0.118 (10.0.0.118)' can't be esta
blished.
ED25519 key fingerprint is SHA256:0QeYdmWAp77F6F7DvgomYUsH5Ke8xm
WUvSFj120uxzM.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprin
t])? yes
Warning: Permanently added '10.0.0.118' (ED25519) to the list of
known hosts.
ec2-user@10.0.0.118: Permission denied (publickey,gssapi-keyex,g
ssapi-with-mic).
[root@ip-10-0-0-39 ~]# ping google
ping: google: Name or service not known
[root@ip-10-0-0-39 ~]# ping google.com
PING google.com (142.251.221.238) 56(84) bytes of data.
64 bytes from pnbomb-bk-in-f14.1e100.net (142.251.221.238): icmp
_seq=1 ttl=117 time=1.48 ms
64 bytes from pnbomb-bk-in-f14.1e100.net (142.251.221.238): icmp
_seg=2 ttl=117 time=1.36 ms
64 bytes from pnbomb-bk-in-f14.1e100.net (142.251.221.238): icmp
_seq=3 ttl=117 time=1.36 ms
64 bytes from pnbomb-bk-in-f14.1e100.net (142.251.221.238): icmp
_seq=4 ttl=117 time=1.37 ms
64 bytes from pnbomb-bk-in-f14.1e100.net (142.251.221.238): icmp
_seq=5 ttl=117 time=1.40 ms
64 bytes from pnbomb-bk-in-f14.1e100.net (142.251.221.238): icmp
_seq=6 ttl=117 time=1.35 ms
64 bytes from pnbomb-bk-in-f14.1e100.net (142.251.221.238): icmp
_seq=7 ttl=117 time=1.36 ms
64 bytes from pnbomb-bk-in-f14.1e100.net (142.251.221.238): icmp
_seq=8 ttl=117 time=1.37 ms
--- google.com ping statistics ---
8 packets transmitted, 8 received, 0% packet loss, time 7012ms
```

Pem key should be available in the server so creating a file to copy paste the Pem key "kanmani.pem"

```
[root@ip-10-0-0-39 ~]# ls
[root@ip-10-0-0-39 ~]# cd bin
-bash: cd: bin: No such file or directory
[root@ip-10-0-0-39 ~]# cd . .
-bash: cd: too many arguments
[root@ip-10-0-0-39 ~]# cd . .
-bash: cd.: command not found
[root@ip-10-0-0-39 ~]# cd..
-bash: cd..: command not found
[root@ip-10-0-0-39 ~]# cd/opt/
-bash: cd/opt/: No such file or directory
[root@ip-10-0-0-39 ~]# cd /opt/
[root@ip-10-0-0-39 opt]# vi kanmani.pem
[root@ip-10-0-0-39 opt]#
```

Pasted pem file:



CASE 1

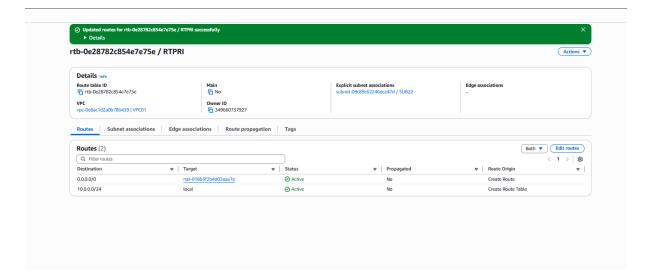
Nat gateway is not connected hence internet is not accessible in private server:

```
X

    Windows PowerShel 
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                                                                   known hosts.
ec2-user@10.0.0.118: Permission denied (publickey,gssapi-keyex,g
ssapi-with-mic).
 [ec2-user@ip-10-0-0-39 ~]$ cd /opt/
[ec2-user@ip-10-0-0-39 opt]$ ls
aws kanmani.pem
[ec2-user@ip-10-0-0-39 opt]$ ssh -i "kanmani.pem" ec2-user@10.0.
0.118
                         ####
                                                                 Amazon Linux 2023
                        _####\
                            \###|
                                  \#/ ___ https://aws.amazon.com/linux/amazon-linux-2
      2
023
                                     V~' '->
 [ec2-user@ip-10-0-0-118 ~]$ sudo su -
 [root@ip-10-0-0-118 ~]# ping google.com
PING google.com (142.250.77.78) 56(84) bytes of data.
^C
--- google.com ping statistics ---
14 packets transmitted, 0 received, 100% packet loss, time 13543
ms
 [root@ip-10-0-0-118 ~]# ping google.com
PING google.com (142.250.77.78) 56(84) bytes of data.
^C
--- google.com ping statistics ---
14 packets transmitted, 0 received, 100% packet loss, time 13499
ms
 [root@ip-10-0-0-118 ~]# ping 8.8.8.8
curl https://google.com
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.
```

CASE 2

Nat and internet gateway destination should be 0.0.0.0/0



Private server is connected and accessing the internet

```
ec2-user@ip-10-0-0-118:~
 reset
PS C:\Users\kanma> ssh -i "kanmani.pem" ec2-user@15.206.179.189
             #_
            ####
                                Amazon Linux 2023
            #####\
              \###|
                 \#/
                                https://aws.amazon.com/linux/amazon-linux-2
023
                  V~' '->
           _/m/'
Last login: Thu Oct 23 14:37:07 2025 from 103.175.108.232
[ec2-user@ip-10-0-0-39 ~]$ cd /opt/
[ec2-user@ip-10-0-0-39 opt]$ ssh -i "kanmani.pem" ec2-user@10.0.
0.118
             #
            ####
                                Amazon Linux 2023
            #####\
              \###|
                 \#/
                                https://aws.amazon.com/linux/amazon-linux-2
023
                  V~' '->
            /m/'
Last login: Thu Oct 23 14:37:35 2025 from 10.0.0.39

[ec2-user@ip-10-0-0-118 ~]$ ping google.com

PING google.com (142.250.207.174) 56(84) bytes of data.

64 bytes from pnbomb-bl-in-f14.1e100.net (142.250.207.174): icmp

_seq=1 ttl=116 time=1.26 ms

64 bytes from pnbomb-bl-in-f14.1e100.net (142.250.207.174): icmp
_seq=2 ttl=116 time=0.874 ms
64 bytes from pnbomb-bl-in-f14.1e100.net (142.250.207.174): icmp
_seq=3 ttl=116 time=0.855 ms
```

PRIVATE SERVER PACKET RECEIVED:

```
Amazon Linux 2023
        ####
        #####\
         \###|
                    https://aws.amazon.com/linux/amazon-linux-2
           \#/ _
023
            V~' '->
ast login: Thu Oct 23 14:37:35 2025 from 10.0.0.39
[ec2-user@ip-10-0-0-118 ~]$ ping google.com
PING google.com (142.250.207.174) 56(84) bytes of data.
64 bytes from pnbomb-bl-in-f14.1e100.net (142.250.207.174): icmp
_seq=1 ttl=116 time=1.26 ms
64 bytes from pnbomb-bl-in-f14.1e100.net (142.250.207.174): icmp
_seg=2 ttl=116 time=0.874 ms
64 bytes from pnbomb-bl-in-f14.1e100.net (142.250.207.174): icmp
_seg=3 ttl=116 time=0.855 ms
64 bytes from pnbomb-bl-in-f14.1e100.net (142.250.207.174): icmp
_seq=4 ttl=116 time=0.840 ms
^C
 -- google.com ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3004ms
rtt min/avg/max/mdev = 0.840/0.957/1.261/0.175 ms
[ec2-user@ip-10-0-0-118 ~]$ client_loop: send disconnect: Connec
tion reset
PS C:\Users\kanma>
```