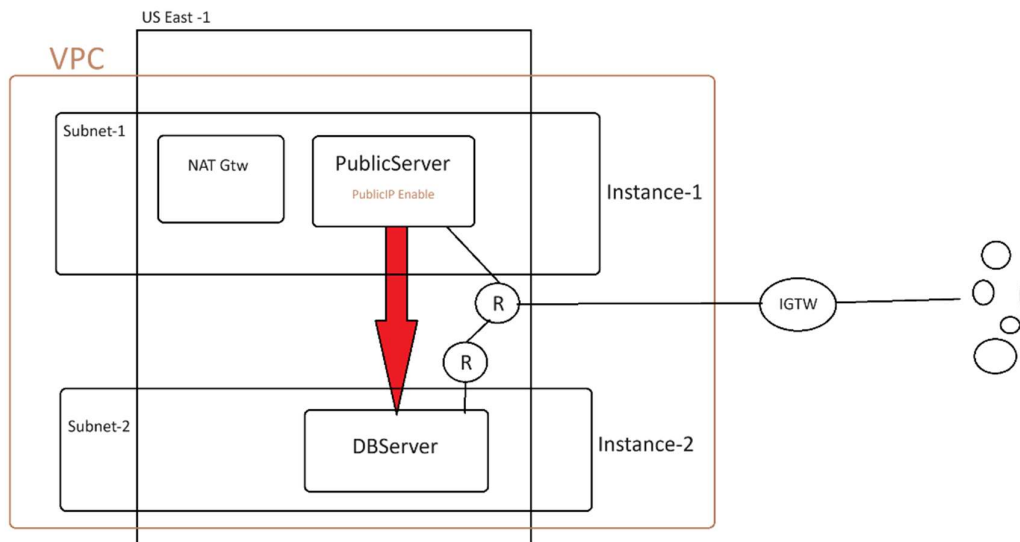
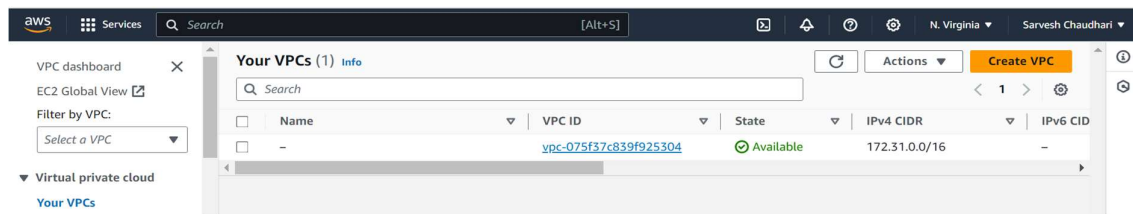


Objective:- Giving patch or update to Dbserver without giving direct access to Internet gateway

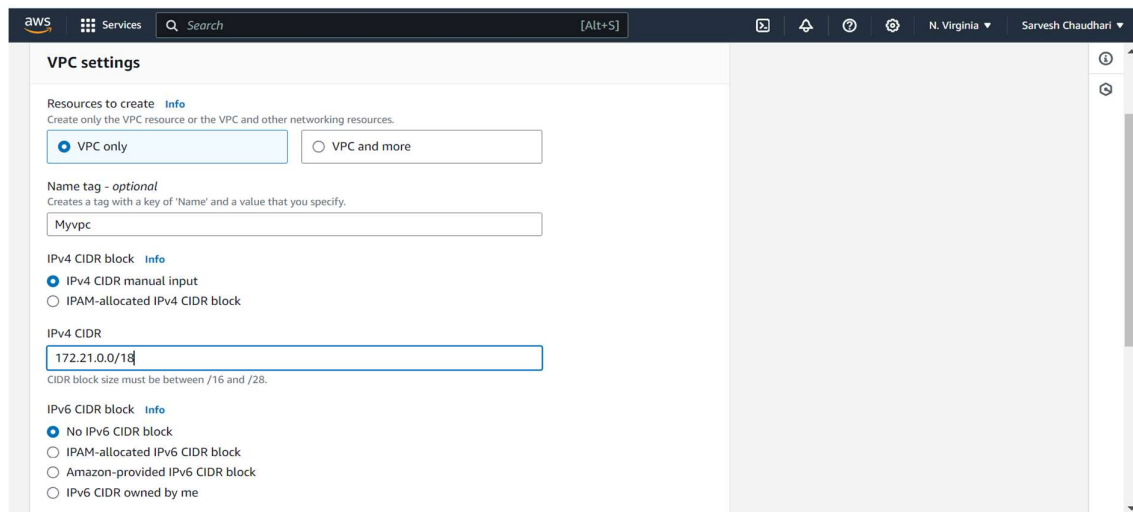
Architecture:-

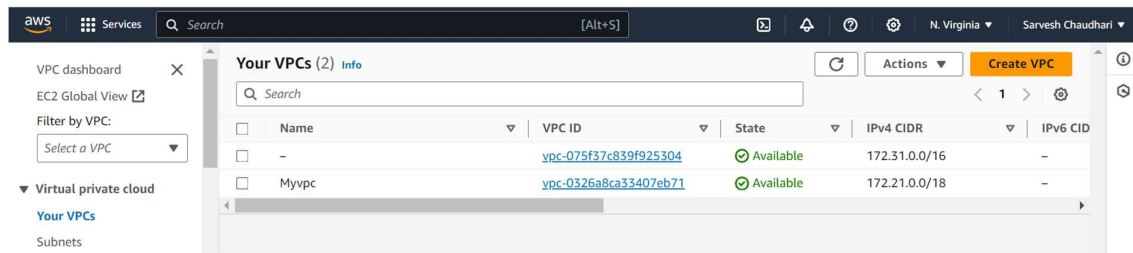


S1) Click on create VPC



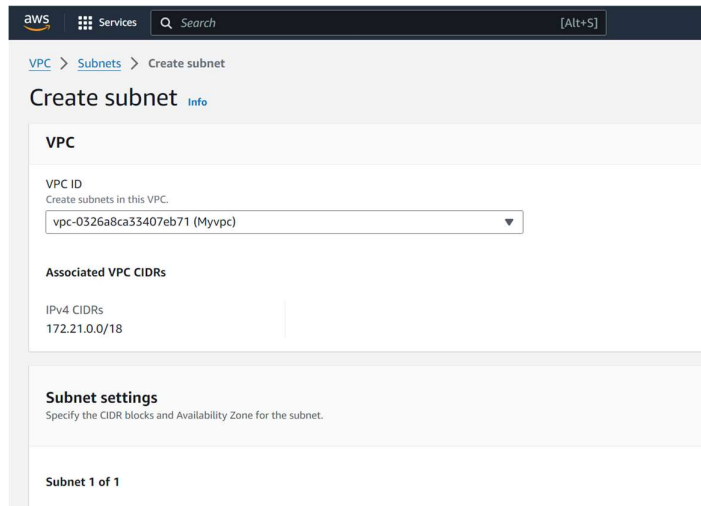
Now type name for VPC & IPv4 CIDR, then click on create VPC





Now create subnet for Publicsubnet

Select VPC



Now in subnet setting give name, Availability zone, then give IPv4 subnet CIDR block

### Subnet settings

Specify the CIDR blocks and Availability Zone for the subnet.

**Subnet 1 of 1**

**Subnet name**  
Create a tag with a key of 'Name' and a value that you specify.  
Publicsubnet  
The name can be up to 256 characters long.

**Availability Zone** [Info](#)  
Choose the zone in which your subnet will reside, or let Amazon choose one for you.  
US East (N. Virginia) / us-east-1a

**IPv4 VPC CIDR block** [Info](#)  
Choose the VPC's IPv4 CIDR block for the subnet. The subnet's IPv4 CIDR must lie within this block.  
172.21.0.0/18

**IPv4 subnet CIDR block**  
172.21.32.0/24 256 IPs

Then click on create. Now similarly create private subnet with subnet2 IP address.

**Subnet 2 of 2**

**Subnet name**  
Create a tag with a key of 'Name' and a value that you specify.  
PrivateSubnet  
The name can be up to 256 characters long.

**Availability Zone** [Info](#)  
Choose the zone in which your subnet will reside, or let Amazon choose one for you.  
No preference

**IPv4 VPC CIDR block** [Info](#)  
Choose the VPC's IPv4 CIDR block for the subnet. The subnet's IPv4 CIDR must lie within this block.  
172.21.0.0/18

**IPv4 subnet CIDR block**  
172.21.132.0/24 256 IPs

**Tags - optional**

Key	Value - optional	
Q Name	PrivateSubnet	Remove

Now create Internet gateway

[VPC](#) > [Internet gateways](#) > Create internet gateway

## Create internet gateway [Info](#)

An internet gateway is a virtual router that connects a VPC to the internet. To create a new internet gateway specify the name for the gateway below.

**Internet gateway settings**

**Name tag**  
Creates a tag with a key of 'Name' and a value that you specify.  
MyGTW

**Tags - optional**  
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

Key	Value - optional	
Q Name	MyGTW	Remove

[Add new tag](#)  
You can add 49 more tags.

Now select Internet gateway then using action Attach to VPC

**Internet gateways (1/2)** [Info](#)

Name	Internet gateway ID
-	igw-087876bdd07f45270
<input checked="" type="checkbox"/> MyGTW	igw-01a838dbd399cd063

**Actions**

- Create internet gateway
- View details
- Attach to VPC
- Detach from VPC
- Manage tags
- Delete internet gateway

Now create Route Table for Public and private

connection.

### Route table settings

**Name - optional**  
Create a tag with a key of 'Name' and a value that you specify.

PublicRT

**VPC**  
The VPC to use for this route table.

vpc-0326a8ca33407eb71 (Myvpc)

**Tags**  
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

Key: Name Value - optional: PublicRT

Add new tag

You can add 49 more tags.

Cancel Create route table

Both Route tables created

aws Services Search [Alt+S]

VPC dashboard EC2 Global View

Filter by VPC: Select a VPC

Virtual private cloud

Your VPCs Subnets Route tables Internet gateways

### Route tables (4) Info

Find resources by attribute or tag

	Name	Route table ID	Explicit subnet associ...	Edge associations	Mai
<input type="checkbox"/>	-	rtb-03e8350358d35536a	-	-	Yes
<input type="checkbox"/>	-	rtb-031454c54684a8724	-	-	Yes
<input type="checkbox"/>	PublicRT	rtb-0262bab3af5a2bbbf	-	-	No
<input type="checkbox"/>	PrivateRT	rtb-0f16b351262c9fc2a	-	-	No

Now select PublicRT then go to Subnet Association > Edit Subnet association

EC2 Global View

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

### Route tables (1/4) Info

Find resources by attribute or tag

	Name	Route table ID	Explicit subnet associ...	Edge associations	Mai
<input type="checkbox"/>	-	rtb-03e8350358d35536a	-	-	Yes
<input type="checkbox"/>	-	rtb-031454c54684a8724	-	-	Yes
<input type="checkbox"/>	PublicRT	rtb-0262bab3af5a2bbbf	subnet-0b832944d9ea9f...	-	No
<input checked="" type="checkbox"/>	PrivateRT	rtb-0f16b351262c9fc2a	subnet-0a82604160c51c...	-	No

rtb-0f16b351262c9fc2a / PrivateRT

Details Routes Subnet associations Edge associations Route propagation Tags

Now Select publicsubnet and privatesubnet for there respective RT

aws Services Search [Alt+S] N. Virginia Sarvesh Chaudhari

VPC > Route tables > rtb-0f16b351262c9fc2a > Edit subnet associations

### Edit subnet associations

Change which subnets are associated with this route table.

Available subnets (1/2)

Filter subnet associations

	Name	Subnet ID	IPv4 CIDR	IPv6 CIDR	Route table ID
<input type="checkbox"/>	Publicsubnet	subnet-0b832944d9ea9f858	172.21.32.0/24	-	rtb-0262bab3af5a2bbbf / Publicf
<input checked="" type="checkbox"/>	Privatesubnet	subnet-0a82604160c51cfeb	172.21.33.0/24	-	Main (rtb-031454c54684a8724)

Selected subnets

subnet-0a82604160c51cfeb / Privatesubnet X

Cancel Save associations

Now edit route.

aws Services Search [Alt+S] N. Virginia Sarvesh Chaudhari

VPC dashboard EC2 Global View 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

### Route tables (1/4) Info

Find resources by attribute or tag

	Name	Route table ID	Explicit subnet associ...	Edge associations	Mail
<input type="checkbox"/>	-	rtb-03e8350358d35536a	-	-	Yes
<input type="checkbox"/>	-	rtb-031454c54684a8724	-	-	Yes
<input checked="" type="checkbox"/>	PublicRT	rtb-0262bab3af5a2bbbf	subnet-0b832944d9ea9f...	-	No
<input type="checkbox"/>	PrivateRT	rtb-0f16b351262c9fc2a	subnet-0a82604160c51c...	-	No

rtb-0262bab3af5a2bbbf / PublicRT

Details Routes Subnet associations Edge associations Route propagation Tags

#### Routes (2)

Filter routes

Destination	Target	Status	Propagated
172.21.0.0/18	local	Active	No
0.0.0.0/0	Internet Gateway	-	No

Add route

Cancel Preview Save changes

Now go to PublicRT then go to Routes > edit route > add route > Select created Getway then save changes

VPC > Route tables > rtb-0262bab3af5a2bbbf > Edit routes

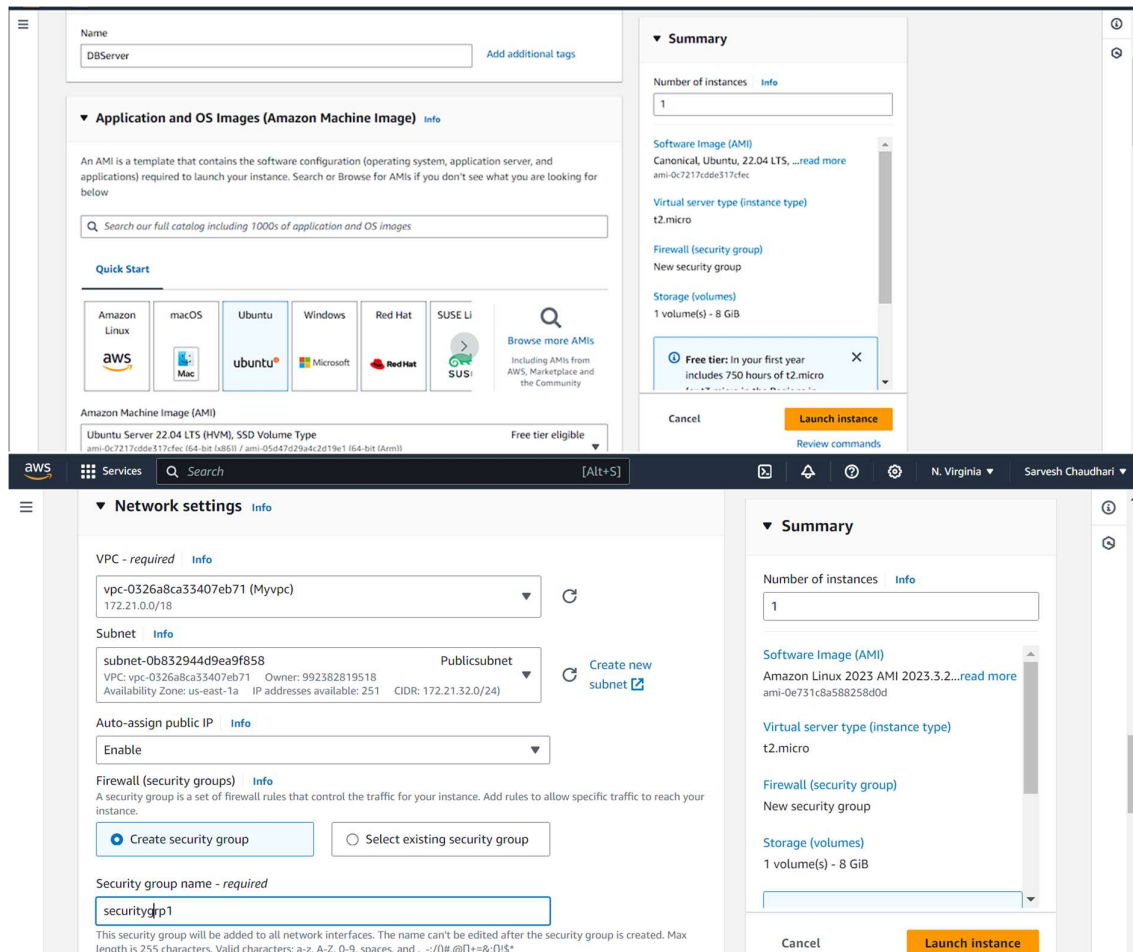
### Edit routes

Destination	Target	Status	Propagated
172.21.0.0/18	local	Active	No
0.0.0.0/0	Internet Gateway	-	No

Add route

Cancel Preview Save changes

Now create instances Public and Private



Now connect Public instance from direct connect

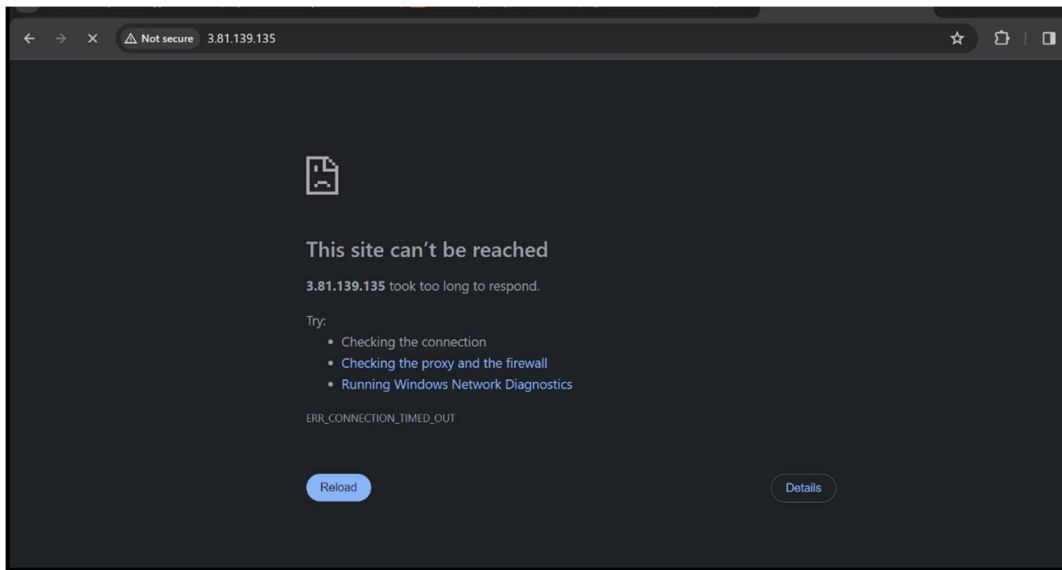
```
ubuntu@ip-172-89-0-79:~$ sudo su
root@ip-172-89-0-79:/home/ubuntu# apt update && upgrade
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [109 kB]
```

Now install Apache

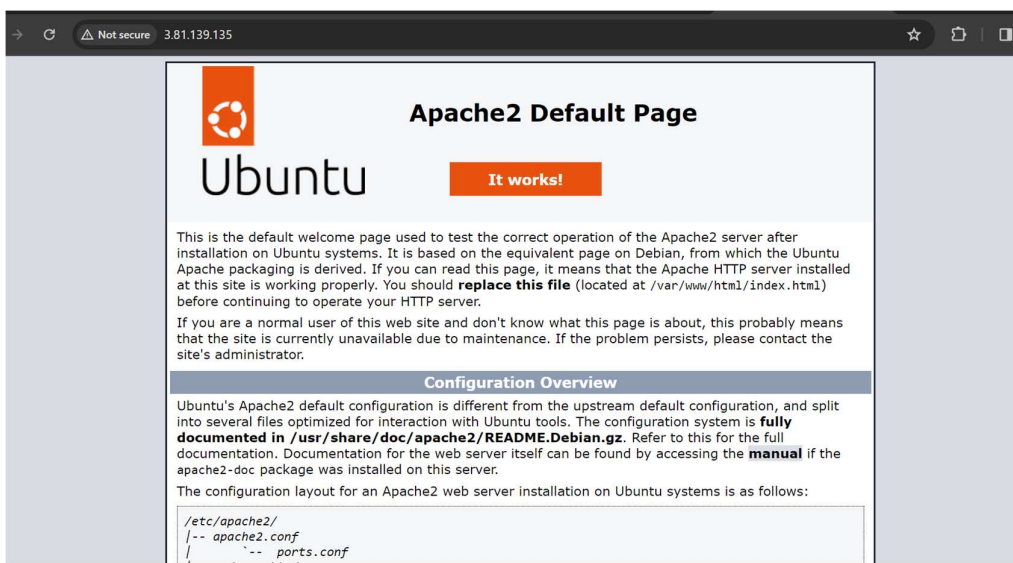
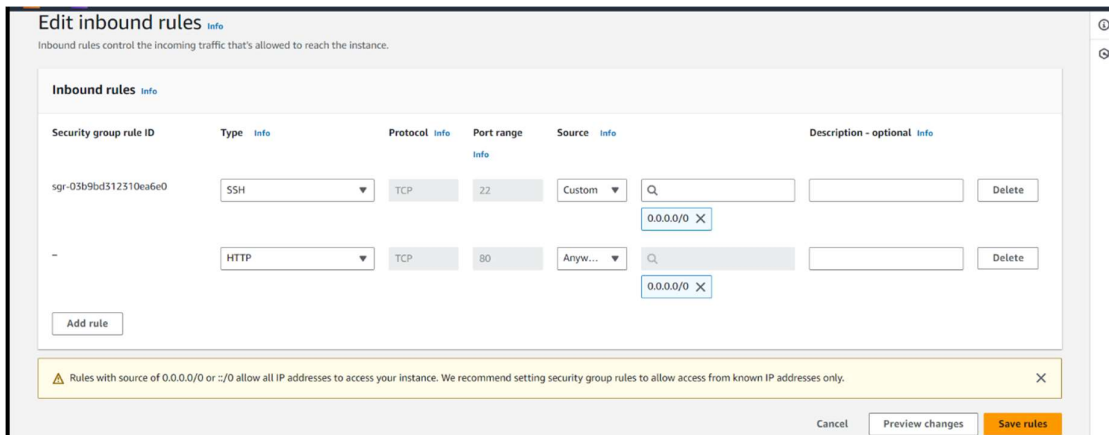
```
root@ip-172-89-0-79:/home/ubuntu# apt install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
```

Ow ping PublicServer

```
root@ip-172-89-0-79:/home/ubuntu# 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=117 time=1.49 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=117 time=1.46 ms
```



Our edit inbound rules to allow traffic.



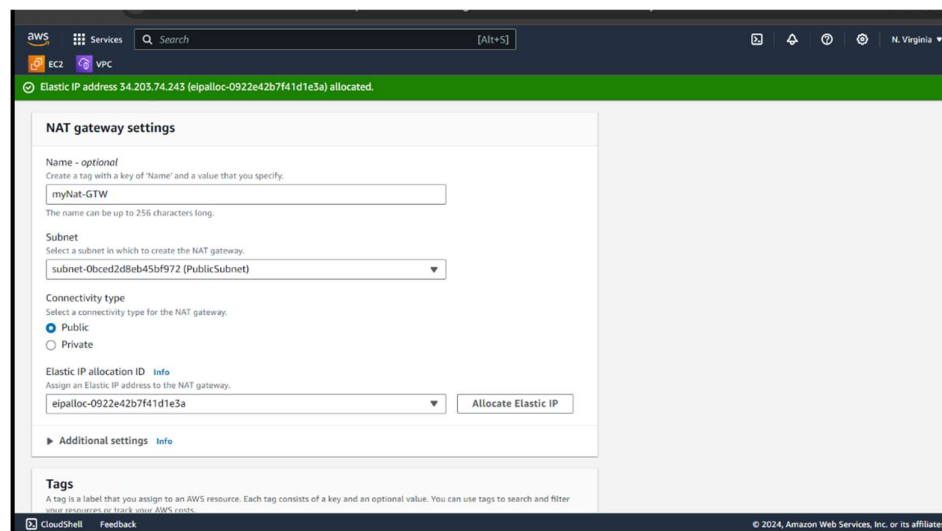
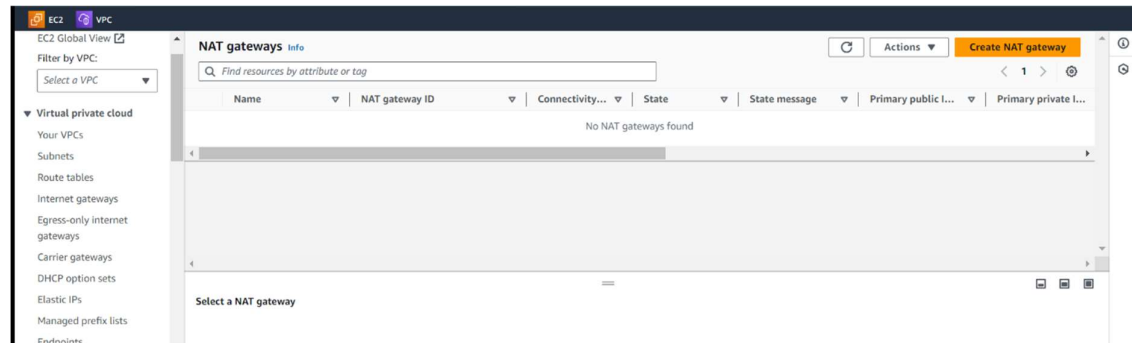
Create key and then enter into private server

```
root@ip-172-89-0-79:/home/ubuntu# vi dkkey.pem
root@ip-172-89-0-79:/home/ubuntu# chmod 400 dkkey.pem
root@ip-172-89-0-79:/home/ubuntu# ssh -i dkkey.pem ubuntu@172.89.5.135
```

Ping in machine 2

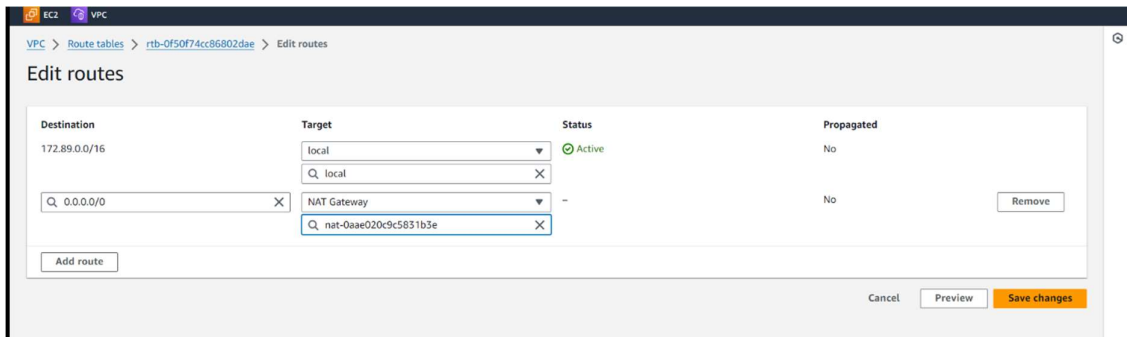
```
ubuntu@ip-172-89-5-135:~$ ping 8.8.8.8
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.
```

Now create NAT-GTW



Go to private's Route table there add NAT Gateway





Now try to ping the connection

```
ubuntu@ip-172-89-5-135:~$ 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=31 ttl=55 time=3.21 ms
64 bytes from 8.8.8.8: icmp_seq=32 ttl=55 time=2.41 ms
64 bytes from 8.8.8.8: icmp_seq=33 ttl=55 time=2.35 ms
64 bytes from 8.8.8.8: icmp_seq=34 ttl=55 time=2.40 ms
64 bytes from 8.8.8.8: icmp_seq=35 ttl=55 time=2.36 ms
```