**WEEK 10**
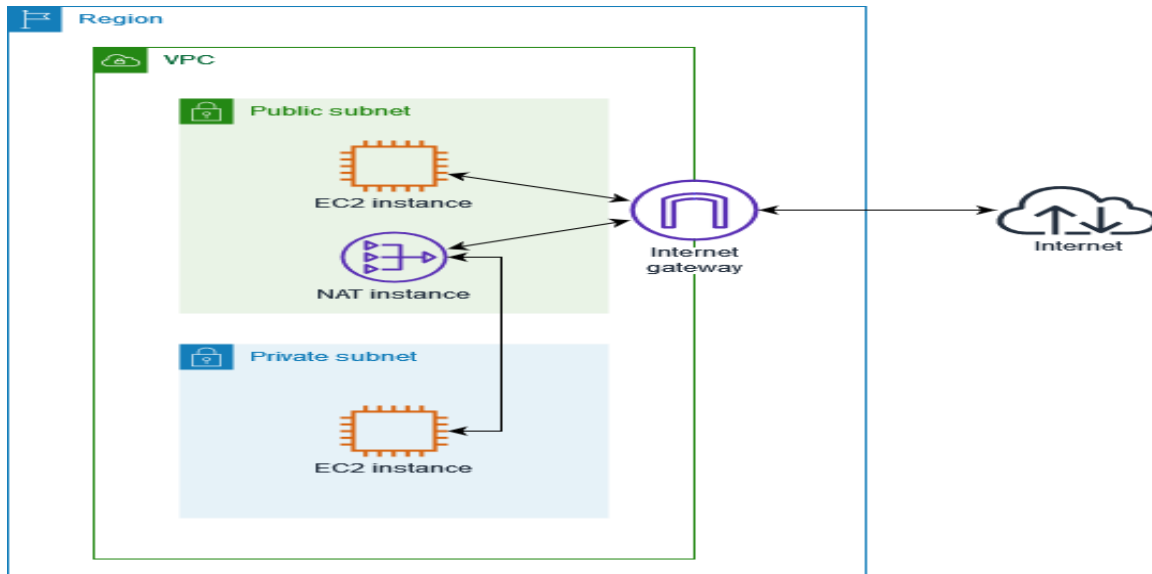**AIM: Create and Configure Amazon Virtual Private Cloud (VPC).**



1.Create Your own VPC

2.Create Public Subnet

3.Create Private Subnet

4.Create Internet GateWay

5. Attache Internet GAteWay to your VPC

6.Create Public Routing Table,associate subnet and add routing rules.
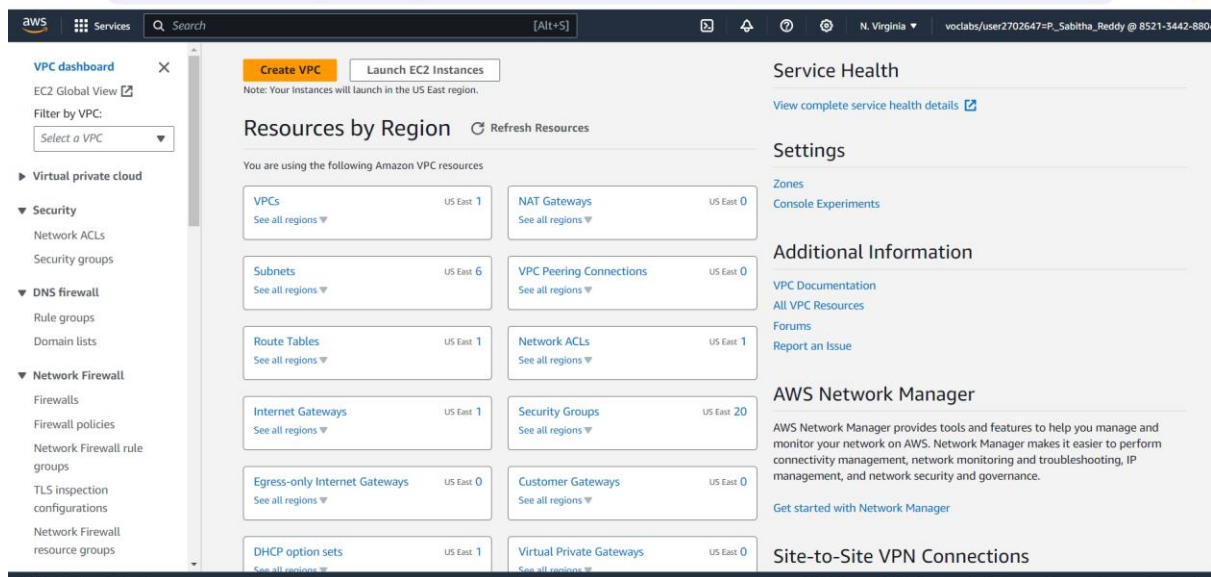
7. Create Private Routing Table,associate subnet and add routing rules.
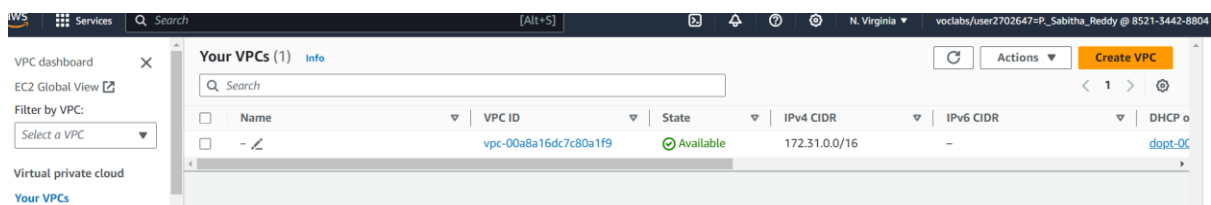

# Implementation:

**Step1:** Open AWS console,

Search for VPC in Search Bar,

Click on **VPC**



On **VPC Dashboard** Panel,

Click on **YOUR VPC,**

Click on **CREATE VPC** Button



On Create VPC page,

For Name Tag→lab_vpc,

For IPv4CIDR Block→10.0.0.0/16

Leave remaining fields as default,

Click on CREATE VPC Button.

## VPC settings

### Resources to create   Info
Create only the VPC resource or the VPC and other networking resources.

| ● VPC only | ○ VPC and more |
|---|---|

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

```
lab_vpc
```

### IPv4 CIDR block   Info
● IPv4 CIDR manual input
○ IPAM-allocated IPv4 CIDR block

### IPv4 CIDR
```
10.0.0.0/16
```
CIDR block size must be between /16 and /28.

### IPv6 CIDR block   Info
● No IPv6 CIDR block
○ IPAM-allocated IPv6 CIDR block
○ Amazon-provided IPv6 CIDR block
○ IPv6 CIDR owned by me

### Tenancy   Info
```
Default                                    ▼
```

---

### IPv4 CIDR
```
10.0.0.0/16
```
CIDR block size must be between /16 and /28.

### IPv6 CIDR block   Info
● No IPv6 CIDR block
○ IPAM-allocated IPv6 CIDR block
○ Amazon-provided IPv6 CIDR block
○ IPv6 CIDR owned by me

### Tenancy   Info
```
Default                                    ▼
```

## 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.

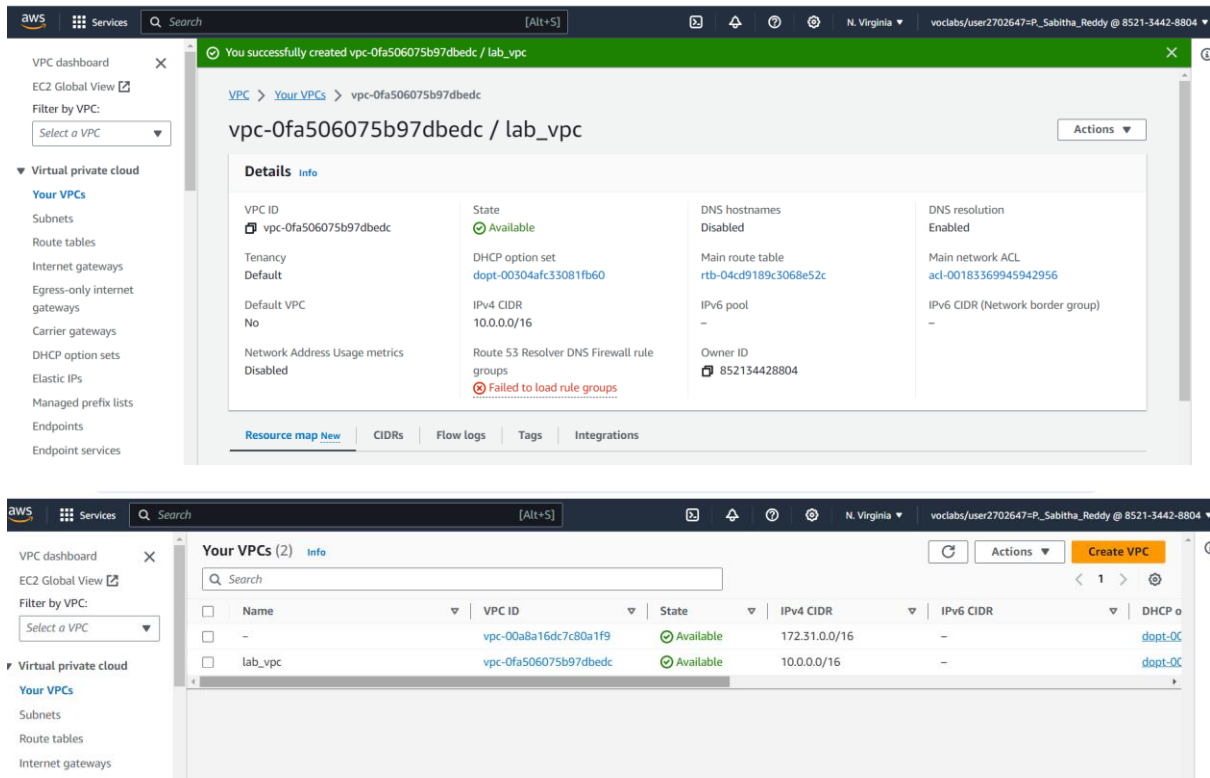| Key | Value - *optional* | |
|---|---|---|
| 🔍 Name   ✕ | 🔍 lab_vpc   ✕ | Remove tag |

**Add tag**

You can add 49 more tags

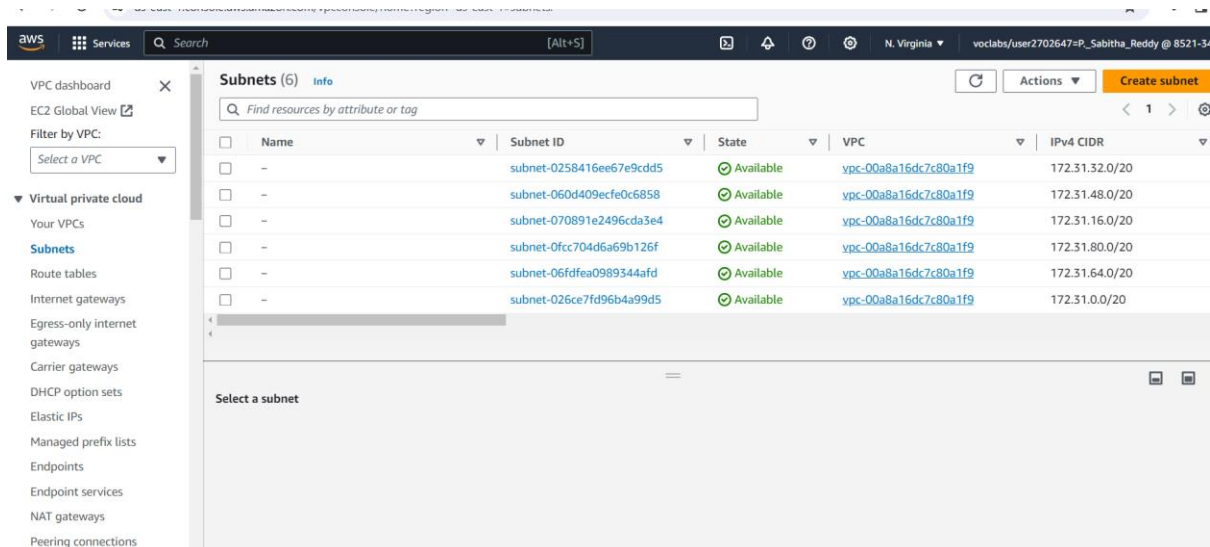Cancel        **Create VPC**

## Verify

Lab_vpc is Created.


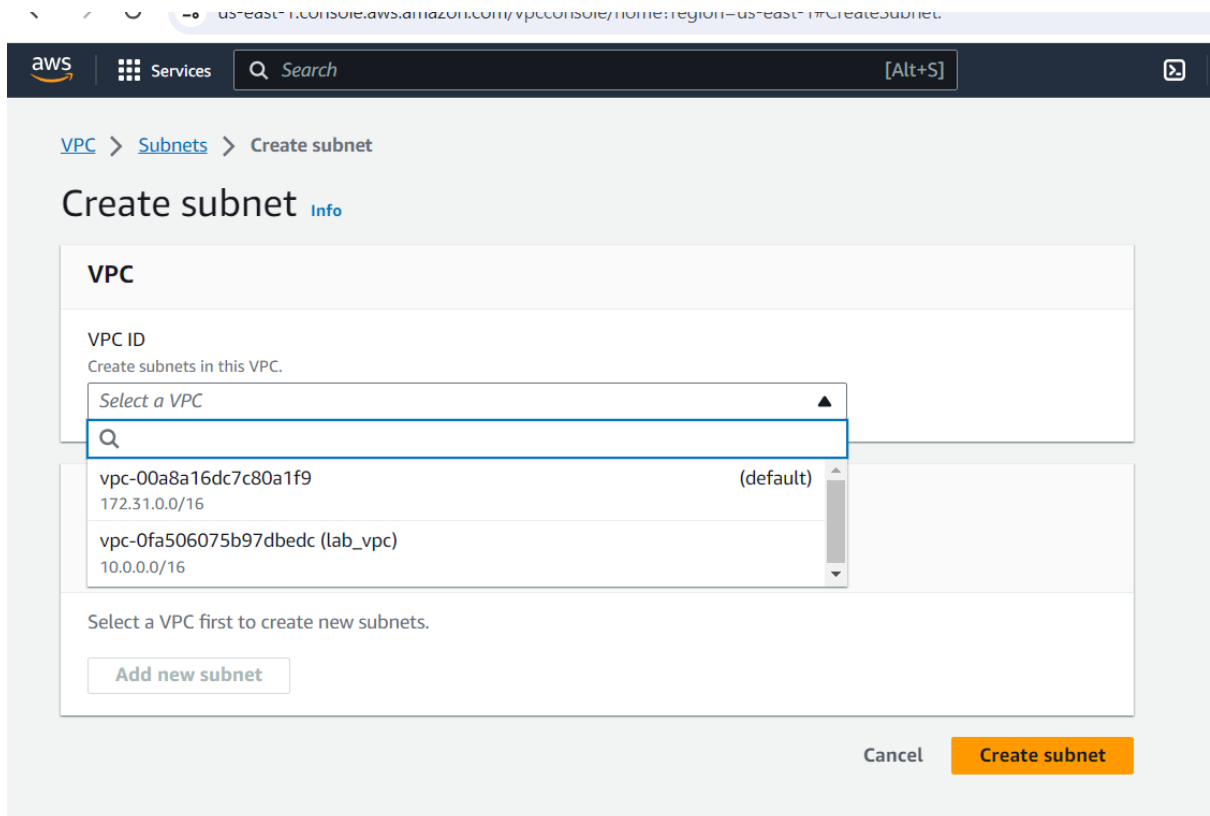


## Step2:

To Create Public Subnet

Click on Subnet

Click on Create Subnet button

On Create Subnet page

For VPC Id: lab_vpc

Click on Create Subnet button

For Subnet Name→ public_subnet

Availability Zone→US East(N.Virginia)/us-east-1a

IPv4 VPC CIDR block→10.0.0.0/16

IPv4 subnet CIDR block→10.0.0.0/24

Click on Create Subnet button

**VPC ID**
Create subnets in this VPC.

vpc-0fa506075b97dbedc (lab_vpc) ▼

**Associated VPC CIDRs**
IPv4 CIDRs

10.0.0.0/16

**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.

my-subnet-01

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 IPv4 VPC CIDR block to create a subnet in.

## 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.

| Public_subnet |

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.

| United States (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.

| 10.0.0.0/16 ▼ |

**IPv4 subnet CIDR block**

| 10.0.0.0/24 | 256 IPs |

| < | > | ^ | v |

**▼ Tags - optional**

| Key | Value - optional | |
|---|---|---|
| 🔍 Name ✕ | 🔍 Public_subnet ✕ | Remove |

# Step 3:

Click on ADD NEW SUBNET BUTTON

For Subnet Name→ private_subnet

Availability Zone→US East(N.Virginia)/us-east-1a

IPv4 VPC CIDR block→10.0.0.0/16

IPv4 subnet CIDR block→10.0.1.0/24

Click on Create Subnet button

**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.

Private_subnet

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.

United States (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.

10.0.0.0/16 ▼

**IPv4 subnet CIDR block**

10.0.1.0/24                                                        256 IPs

< > ^ v

▼ **Tags - optional**

| Key | Value - optional | |
|---|---|---|
| Q Name ✕ | Q Private_subnet ✕ | Remove |
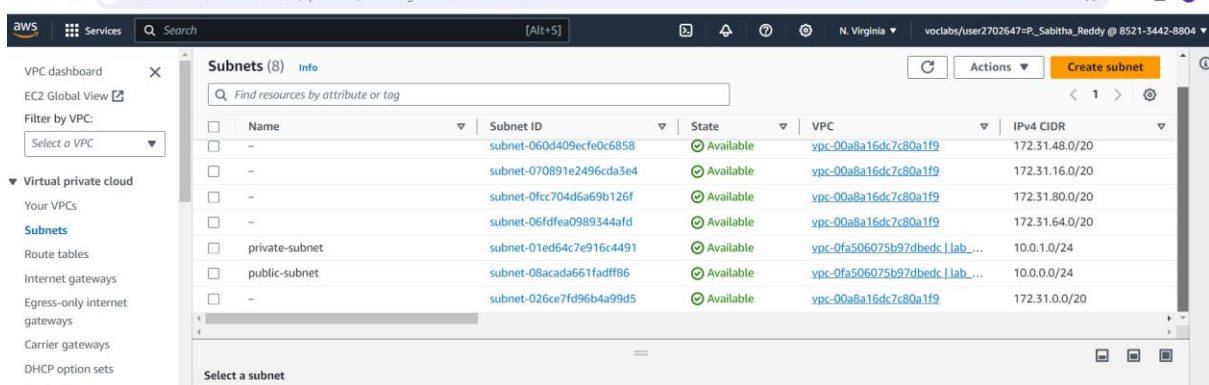
Add new tag

You can add 49 more tags.

Remove

Add new subnet

Cancel   Create subn

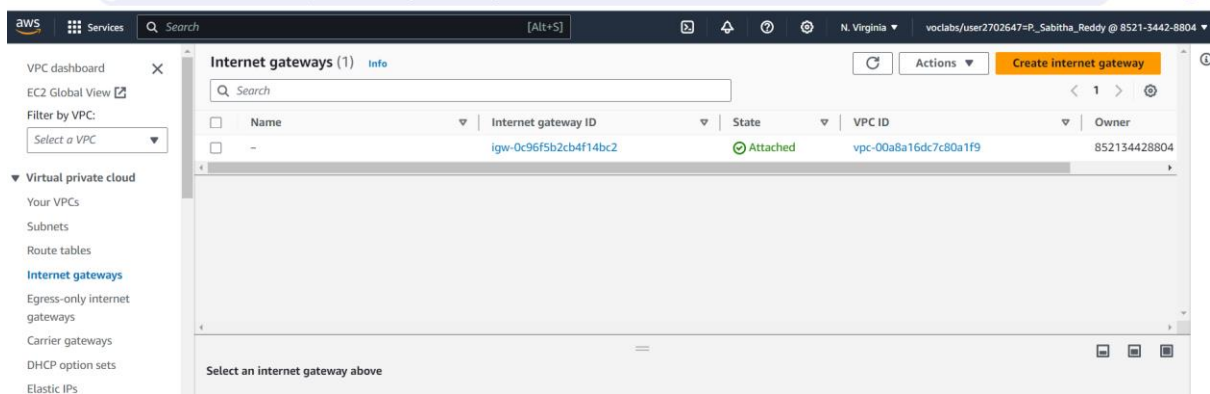Verify public, private subnets are created.



**Step 4:** Create INTERNET GATEWAY and ATTACH TO VPC

In VPC Dashboard Panel

Click on Internet Gateways

Click on Create  Internet Gateway button

In Create  Internet Gateway page

For Name Tag→ lab_vpc_IG

Click on Create  Internet Gateway button
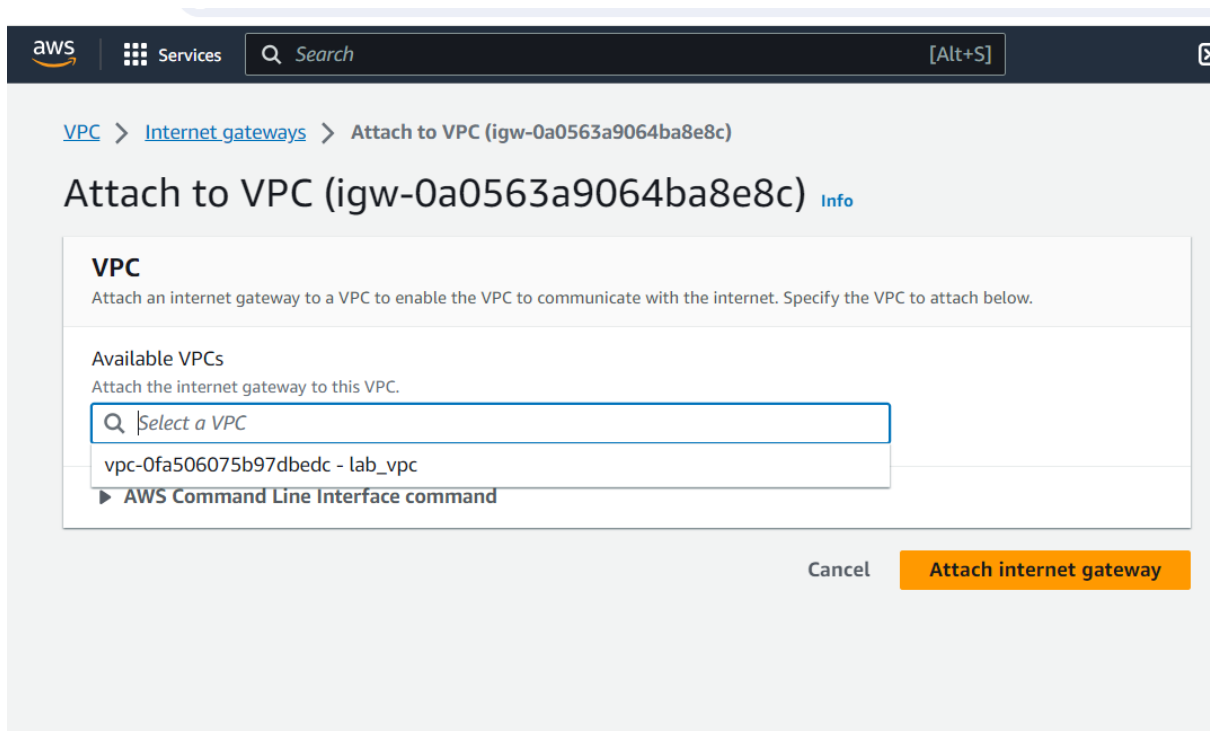


**Verify**

 Internet Gateway created.
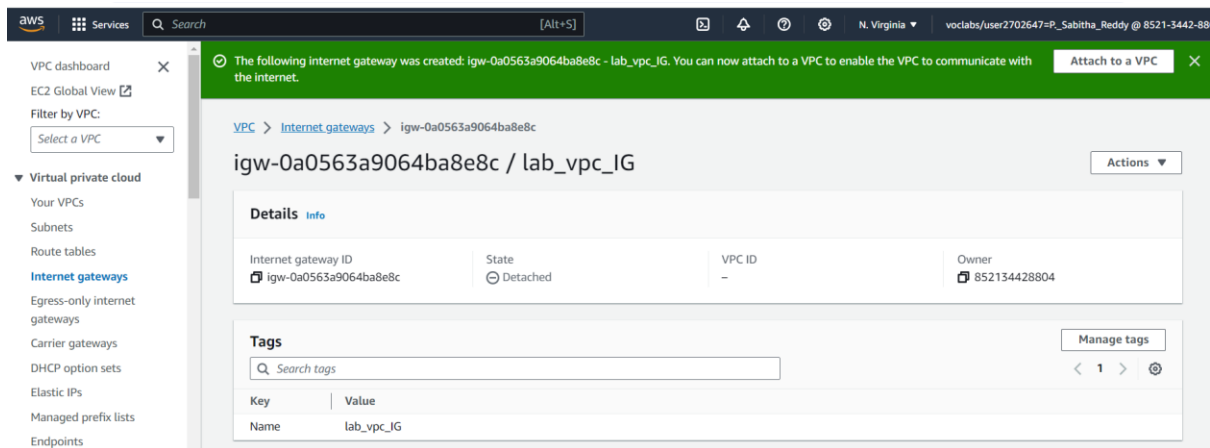
## Step 5:

Select lab_vpc_IG

Click on ATTACH to VPC
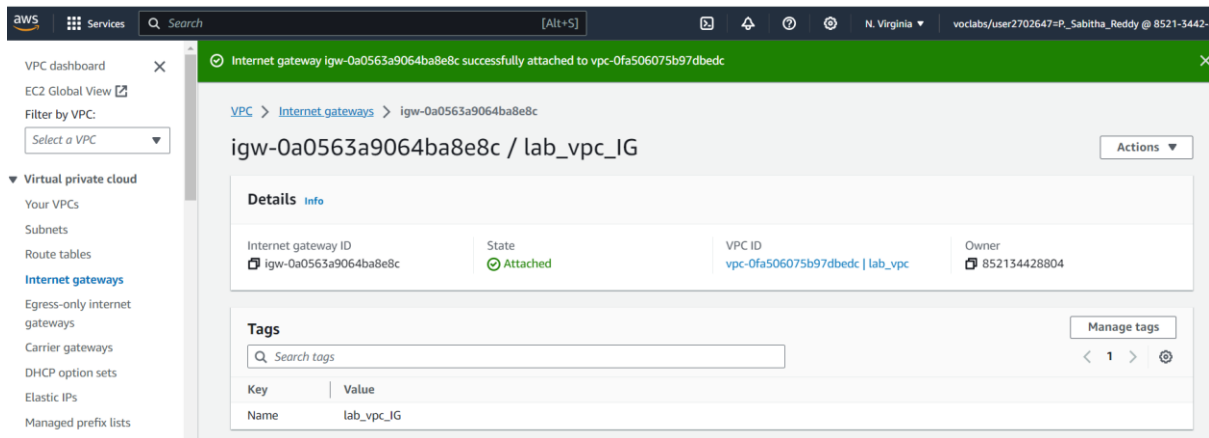
In ATTACH to VPC box

For VPC→lab_vpc

Click on attach internet gateway button.
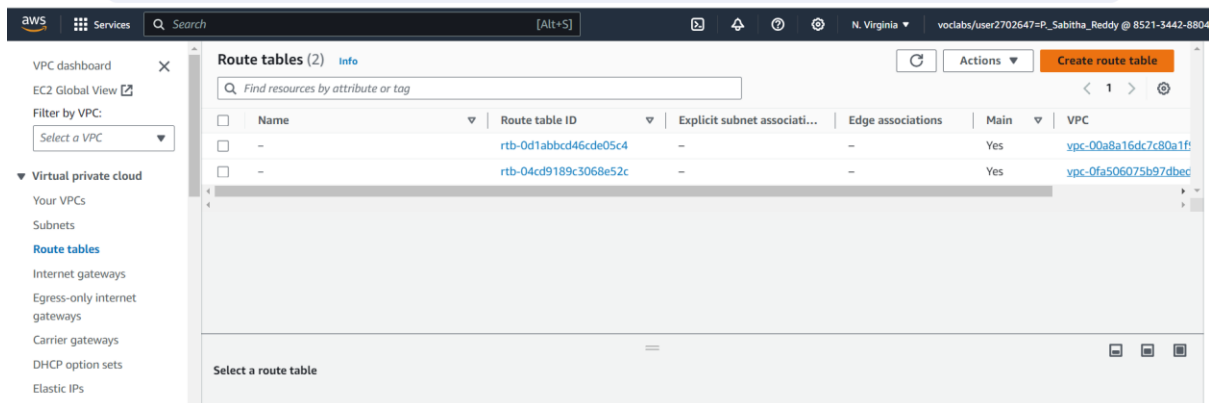


**Verify** Internet gateway is connected to your VPC

**Step 6:** Create Public Routing Table, associate subnet and add routing rules

On VPC Dashboard panel

Click on Route Table

Click on Create route table button



On route table box

For Name Tag→PUBLIC-RT-lab_vpc

For VPC→ lab_vpc

Click on Create route table button

## Create route table Info

A route table specifies how packets are forwarded between the subnets within your VPC, the internet, and your VPN connection.

### Route table settings

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

PUBLIC-RT-lab_vpc

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

vpc-0fa506075b97dbedc (lab_vpc) ▼

### 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 | Value - optional | |
|-----|------------------|---|
| 🔍 Name ✕ | 🔍 PUBLIC-RT-lab_vpc ✕ | Remove |

Add new tag

You can add 49 more tags.

Cancel     **Create route table**

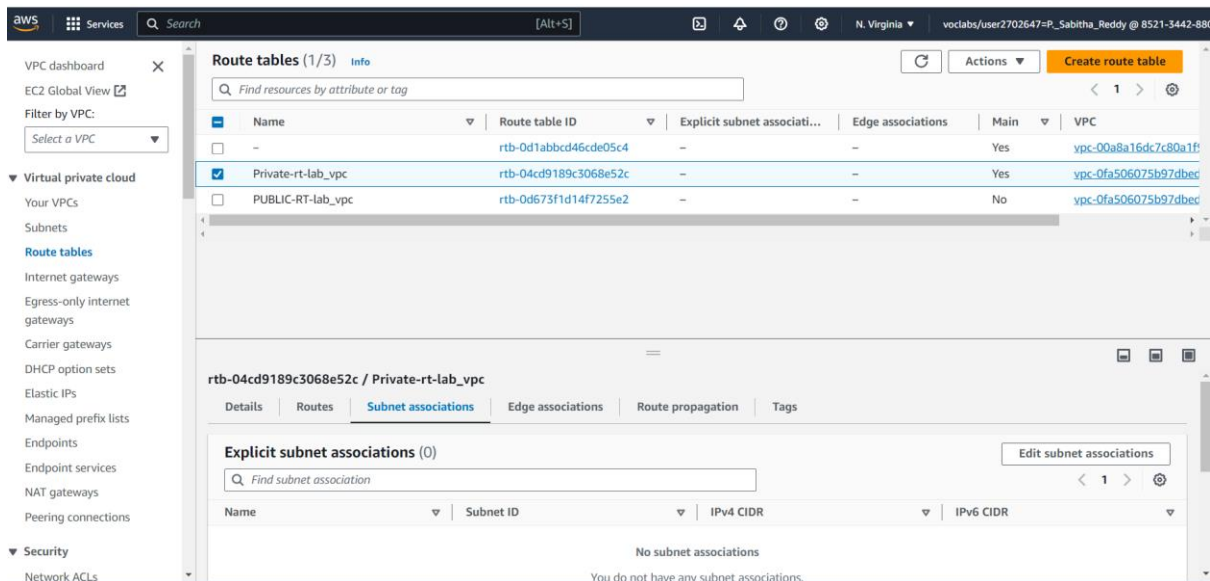## Verify ,

PUBLIC-RT-lab_vpc  Is created.

## Step 7:

For Name Tag→PRIVATE-RT-lab_vpc

For VPC→ lab_vpc

Click on Create route table button

 Select  Private-RT-lab_vpc  →Actions
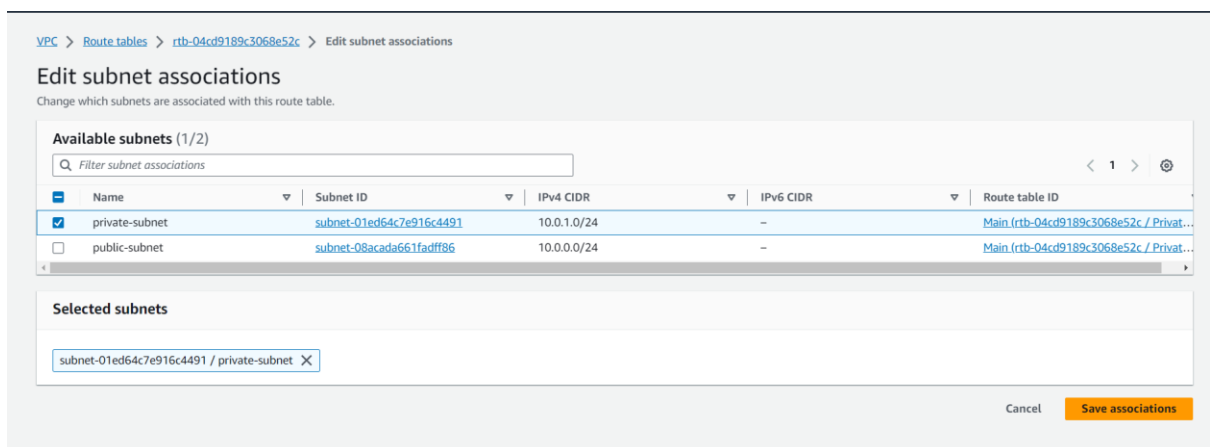
Click on subnet associations

Click on  Edit subnet associations

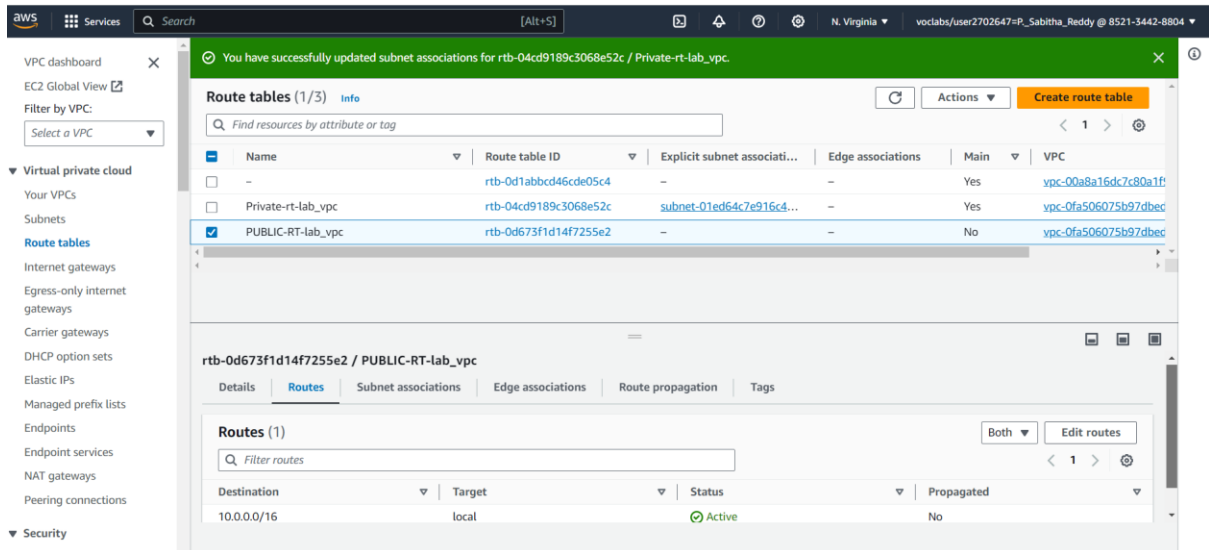Select check box of private_subnet→10.0.1.0/24

Click on save associations



Verify private_subnet is associated with routing table .

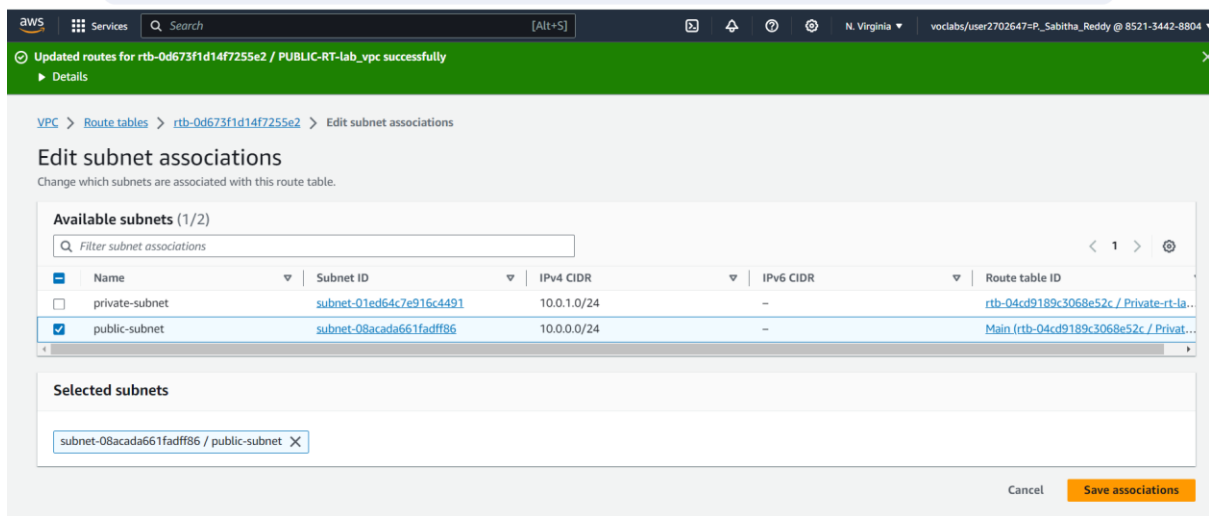Select  PUBLIC-RT-lab_vpc  →Actions

Click on subnet associations

Click on  Edit subnet associations

Select check box of public_subnet→10.0.0.0/24

Click on save associations

Verify public_subnet is associated with routing table



Select  PUBLIC-RT-lab_vpc→     Actions

Click on Edit routes button,

Click on add route button,

For Destination→ 0.0.0.0/0

Target→internet gateway→ igw-0a0563a9064ba8e8c(lab_vpc_IG)

Click on Save changes button



Verification

PUBLIC-RT-lab_vpc is added through Internet Gateway

Verify Status column is Active.