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AWS CLOUD COMPUTING

CONFIGURATION OF AMAZON VIRTUAL PRIVATE CLOUD

Configuration of Amazon Virtual Private Cloud

Configuration of Amazon Virtual Private Cloud (VPC)

Amazon Virtual Private Cloud (Amazon VPC) lets you provision a logically isolated section of the Amazon Web Services (AWS) cloud where you can launch AWS resources in a virtual network that you define. You have complete control over your virtual networking environment, including selection of your own IP address range, creation of subnets, and configuration of route tables and network gateways. You can use both IPv4 and IPv6 in your VPC for secure and easy access to resources and applications. You can easily customize the network configuration for your Amazon Virtual Private Cloud.

For example, you can create a public-facing subnet for your web servers that has access to the Internet, and place your backend systems such as databases or application servers in a private-facing subnet with no Internet access. You can leverage multiple layers of security, including security groups and network access control lists, to help control access to Amazon EC2 instances in each subnet.

Subnetwork or subnet is a logical subdivision of an IP network. The practice of dividing a network into two or more networks is called subnetting. AWS provides two types of subnetting one is Public which allows the internet to access the machine and another is private which is hidden from the internet.

Internet gateway is a horizontally scaled, redundant, and highly available VPC component that allows communication between instances in your VPC and the internet. An internet gateway serves two purposes: to provide a target in your VPC route tables for internet-routable traffic and to perform network address translation (NAT) for instances that have been assigned public IPv4 addresses.

Route tables contain a set of rules, called routes, that are used to determine where network traffic is directed. Each subnet in your VPC must be associated with a route table; the table controls the routing for the subnet. A subnet can only be associated with one route table at a time, but you can associate multiple subnets with the same route table.

Features and Benefits

- Multiple Connectivity Options
- Secure
- Simple
- Use All the Scalability and Reliability of AWS

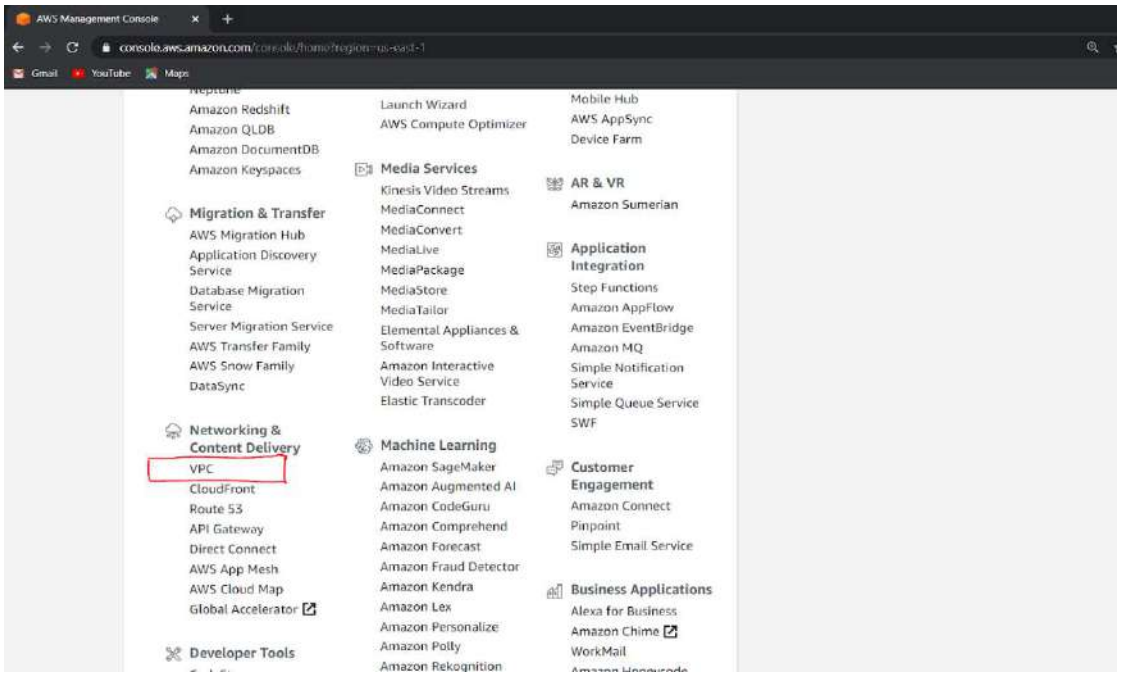
Use Cases

- Host a simple, public-facing website
- Host multi-tier web applications
- Host scalable web applications in the AWS cloud that are connected to your
- Datacentre
- Extend your corporate network into the cloud
- Disaster Recovery

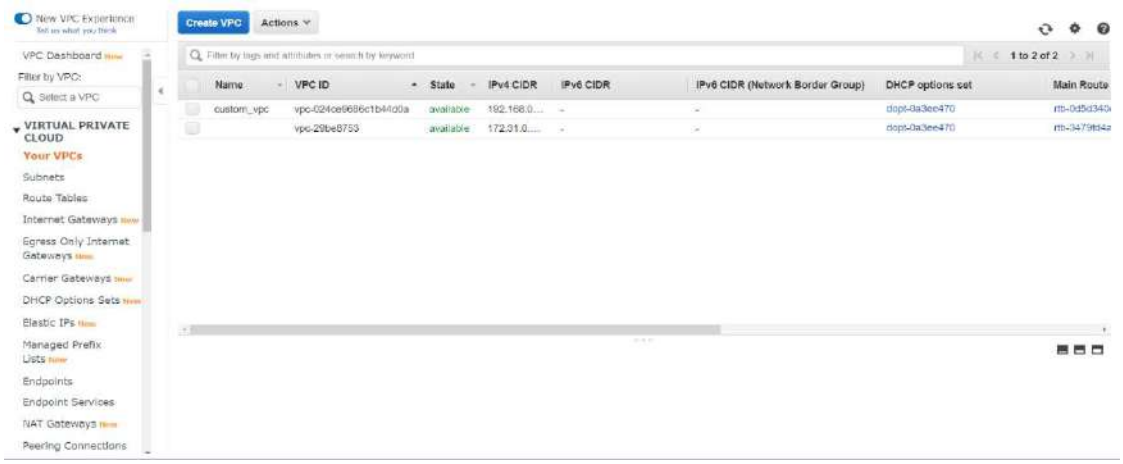
To Create your own VPC

Amazon VPC enables you to launch AWS resources into a virtual network that you've defined.

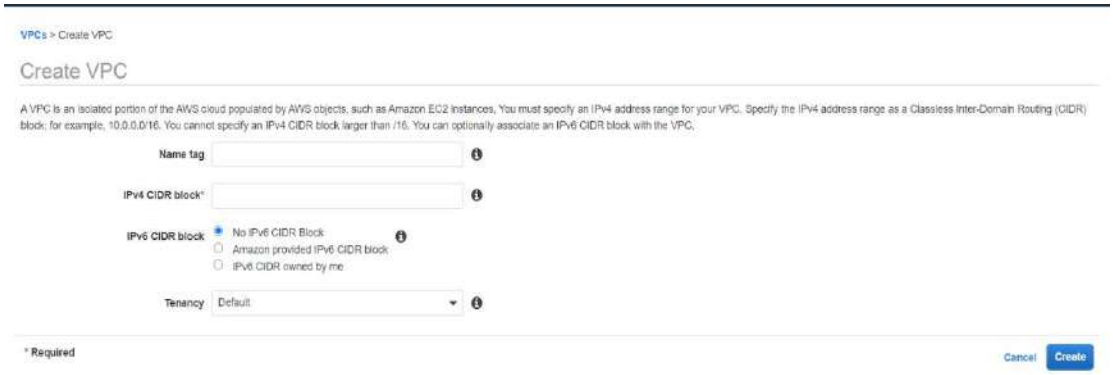
Open AWS console
Click on Services
Select Networking and Content Delivery
Click on VPC



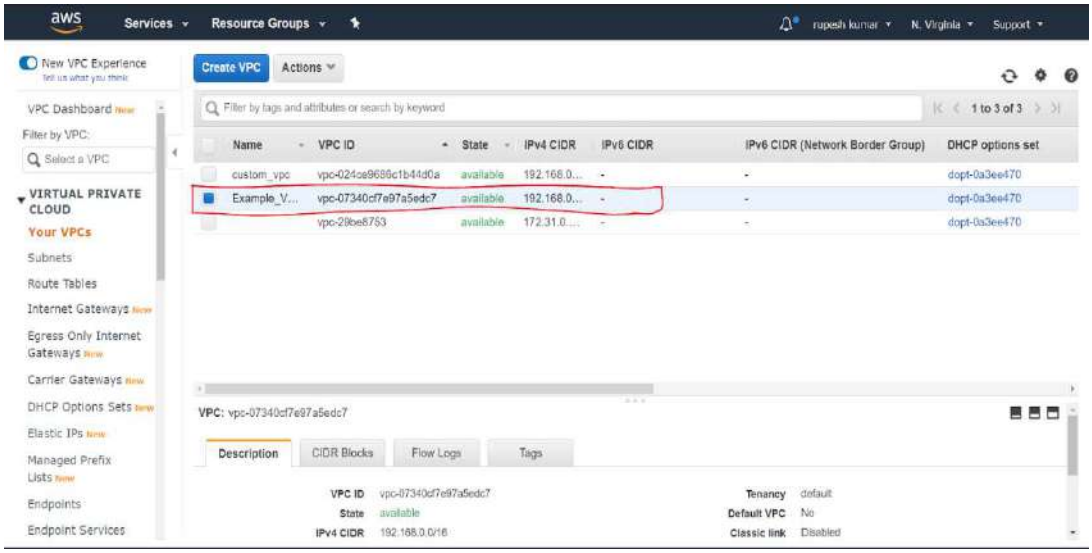
On VPC Dashboard panel
Click on Your VPC
Click on Create VPC button



Click on “Create VPC”, page
For Name tag → Example_VPC
For IPv4 CIDR block → 192.168.0.0/16
Click on “Create” button

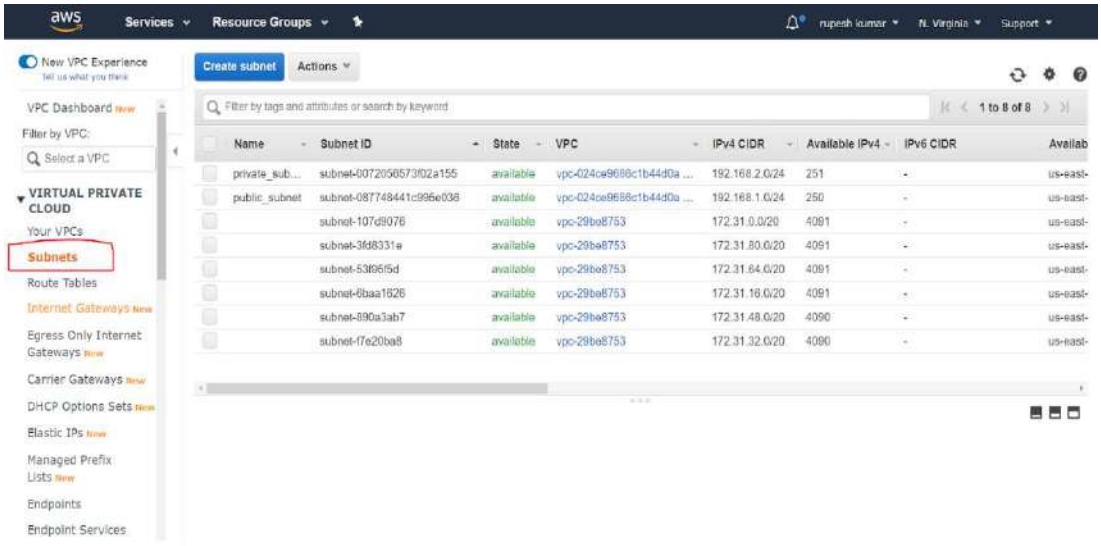


Verify
Example_VPC was created

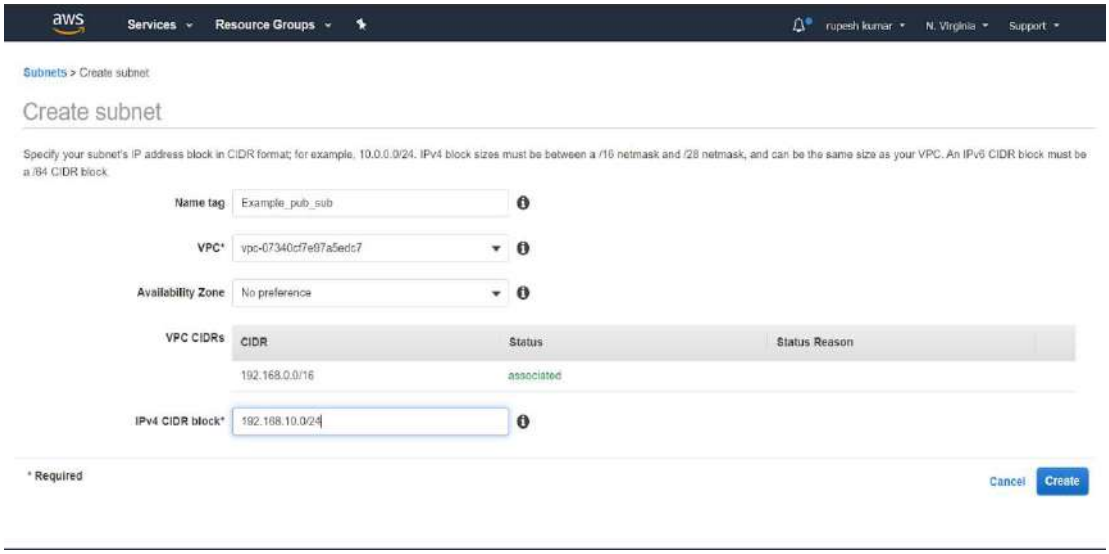


To Create public subnet

Click on Subnet
Click on Create Subnet button

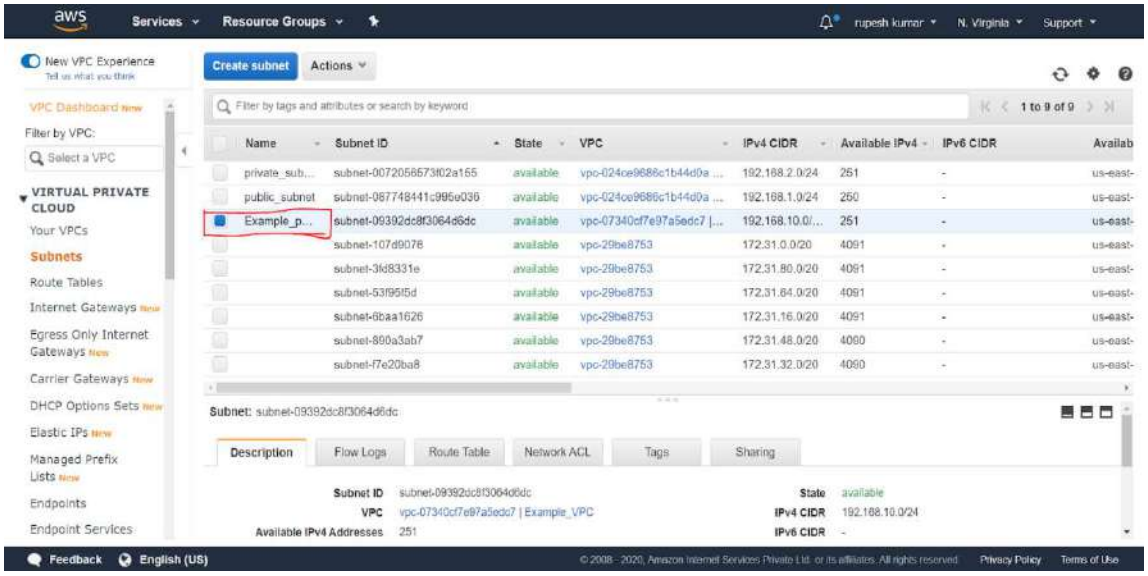


On Create Subnet, page
For Name tag → Example_pub_sub
For VPC → Example_VPC
For IPv4 CIDR block → 192.168.10.0/24
Click on Create button



Verify

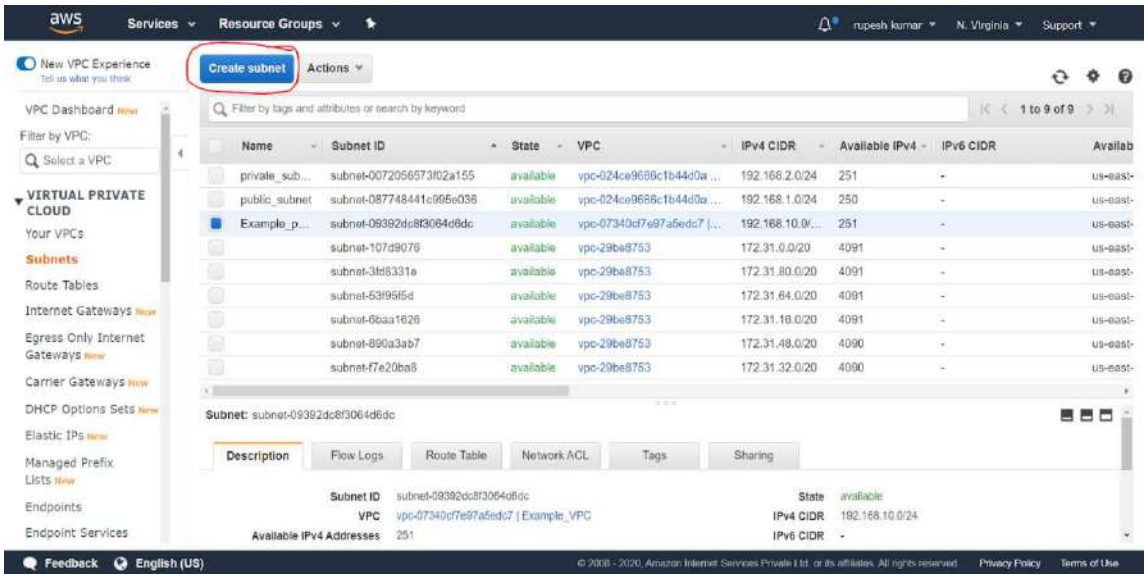
Example_pub_sub got created



To Create private subnet

Click on Subnet

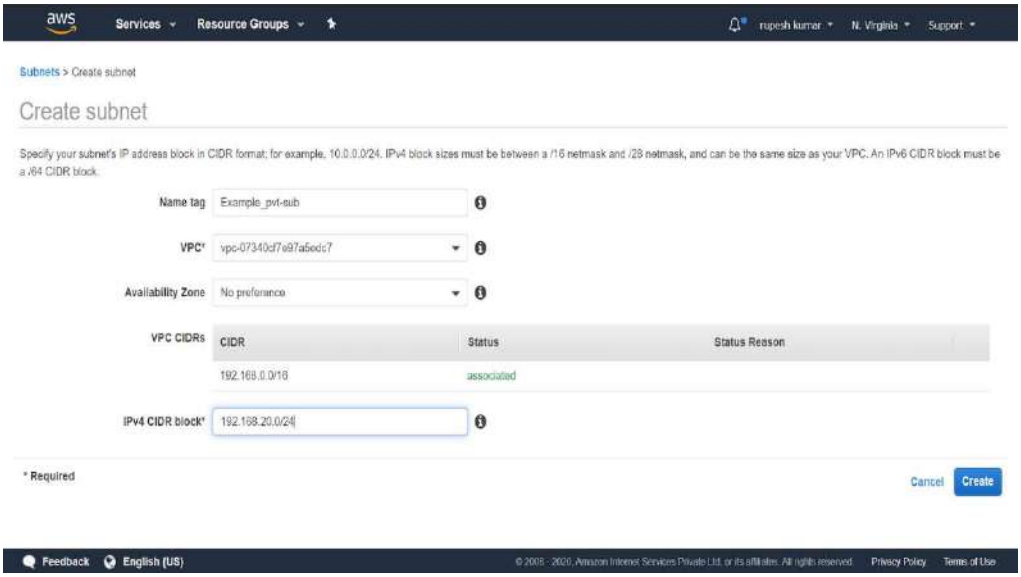
Click on Create subnet button



On create subnet page

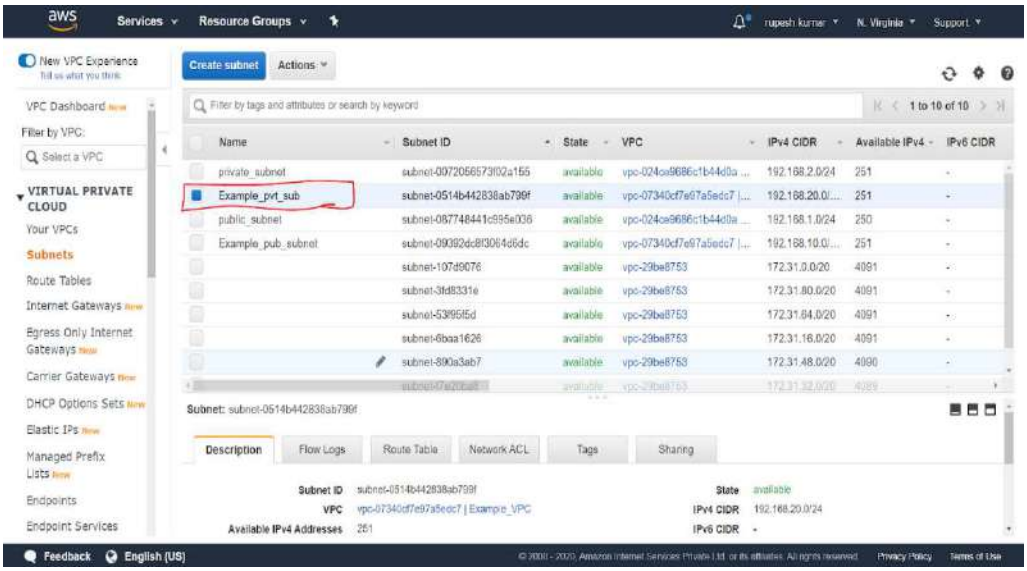
For Name tag → Example_pvt_sub
For VPC → Example_VPC
For IPv4 CIDR block → 192.168.20.0/24

Click on Create button



Verify

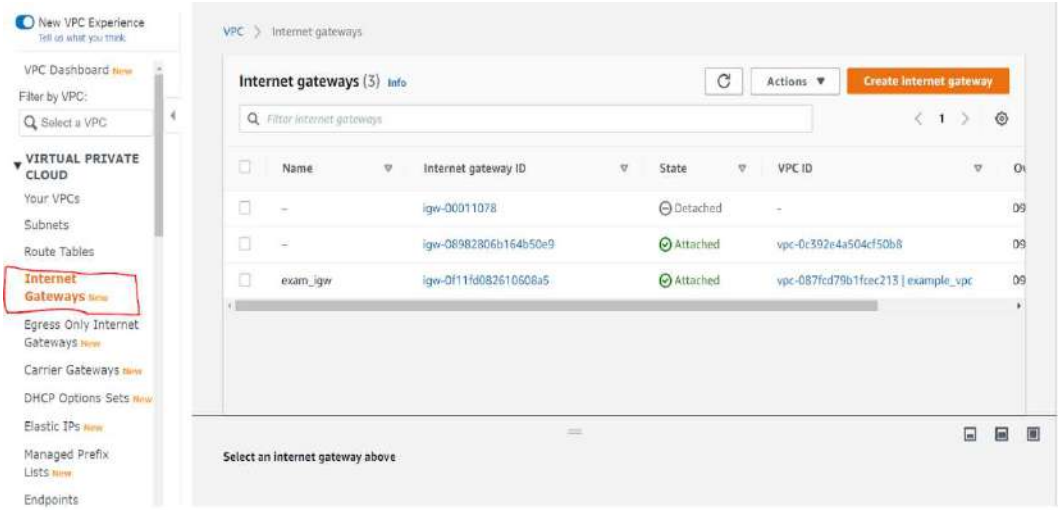
Example_pvt_sub got created



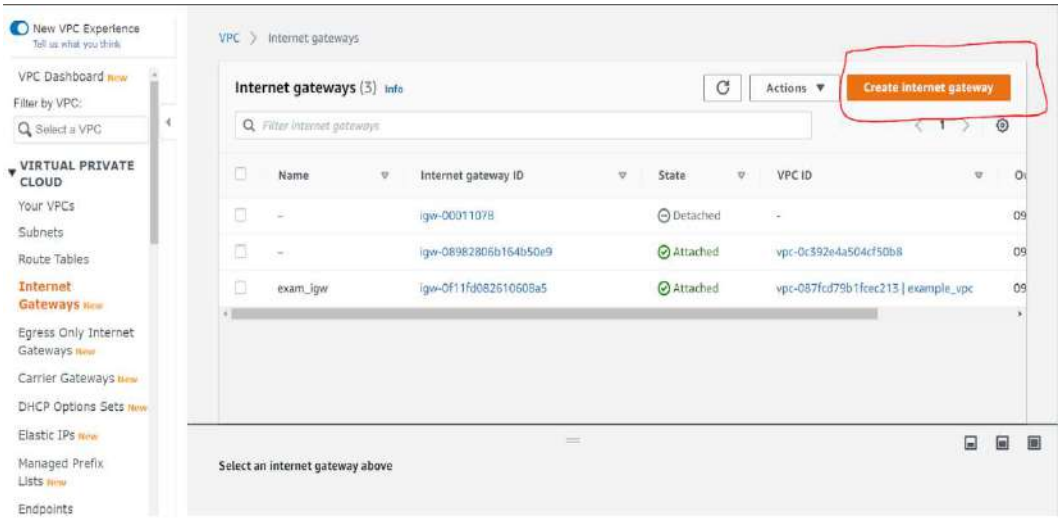
Create an Internet gateway and attach to your VPC

In VPC Dashboard panel

Click on Internet Gateways

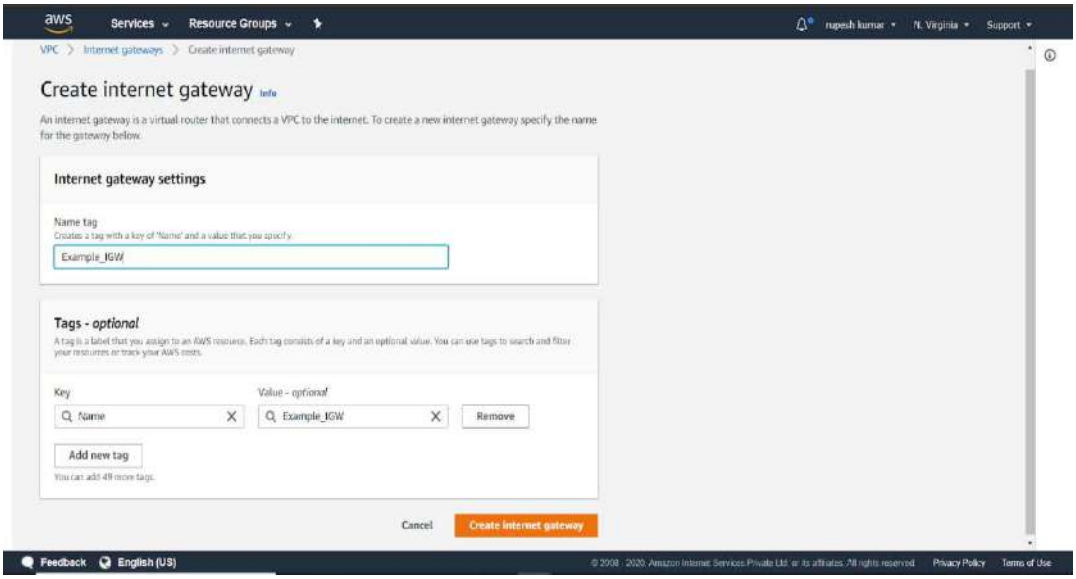


Click on Create Internet Gateway button

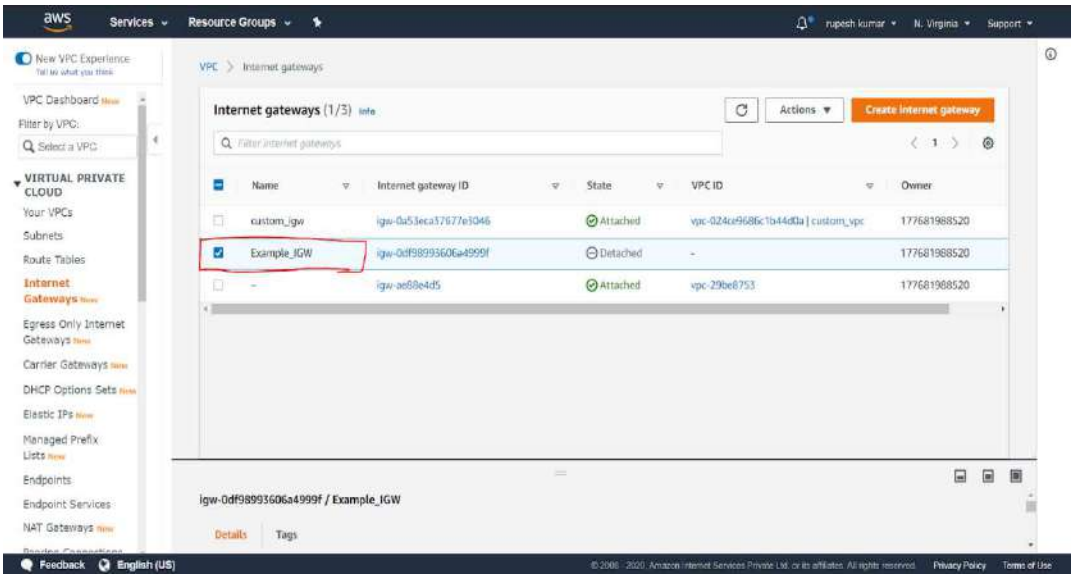


In Create Internet Gateway, box

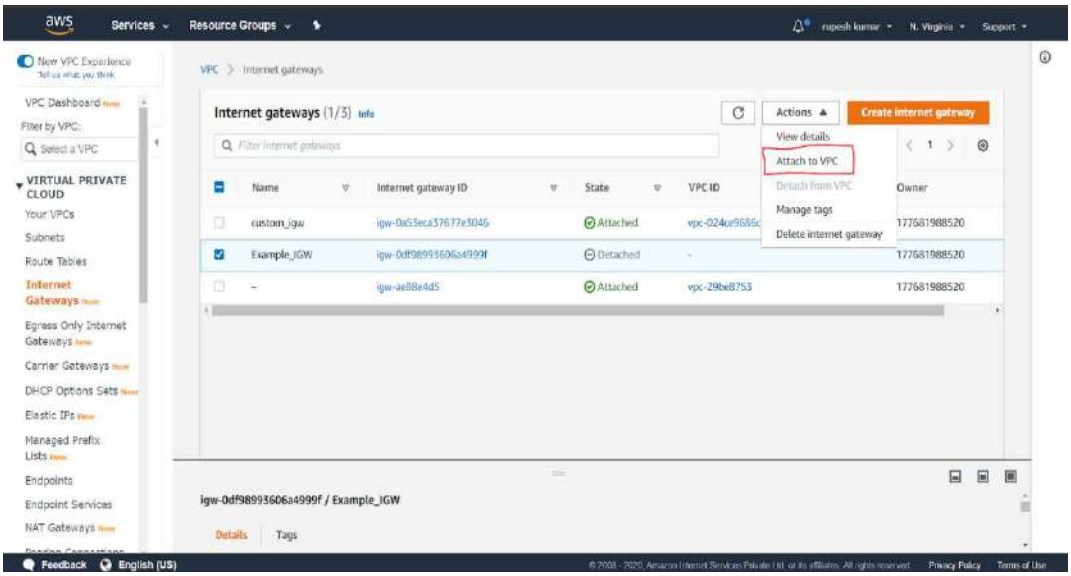
For Name tag → Example_IGW
Click on “Create internet gateway” button



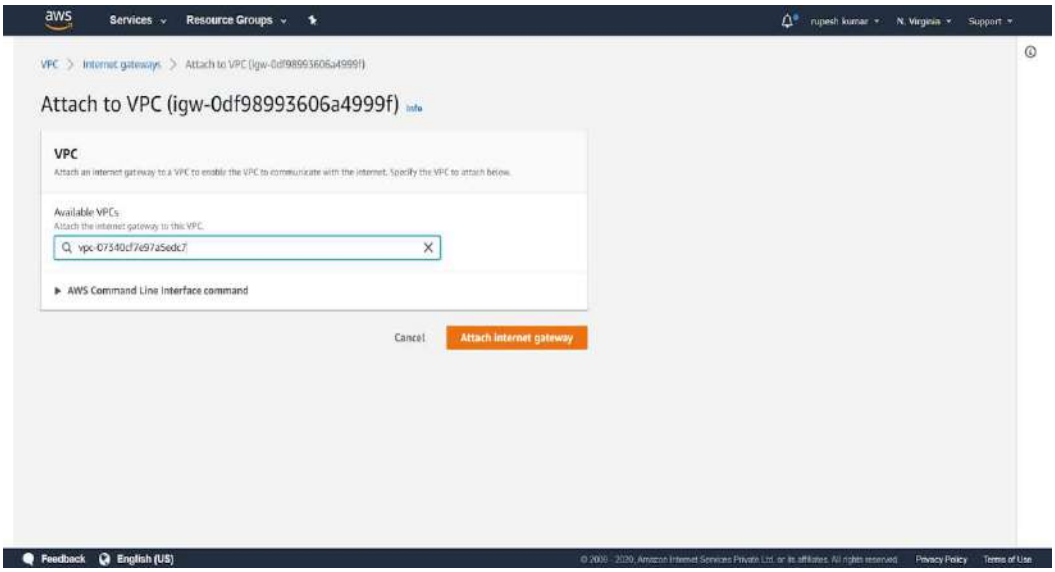
Verify
Internet gateway is created



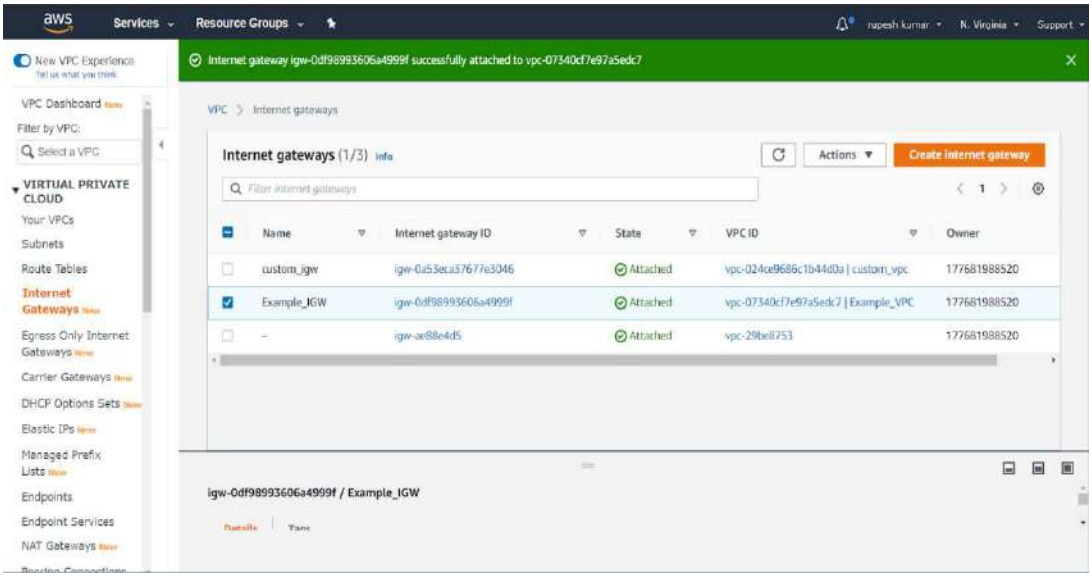
Select Example_IGW
Click on actions and select option " Attach to VPC"



In "Attach to VPC" box
For VPC -> Example_VPC
Click on "Attach internet gateway" button



Verify
Internet gateway is connected to your VPC

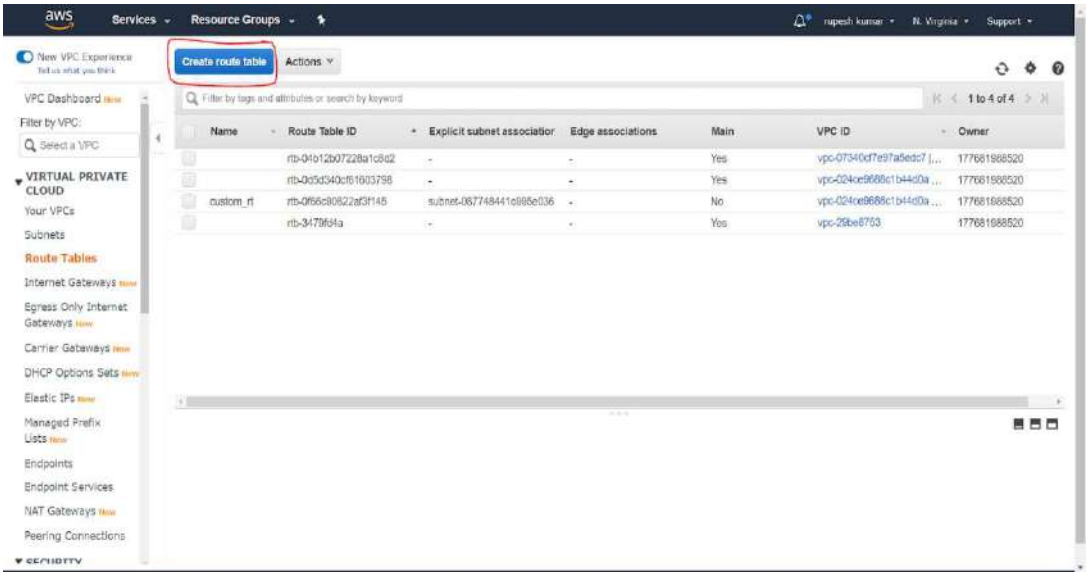


Create Pubic Routing Table, associate subnet and add routing rules

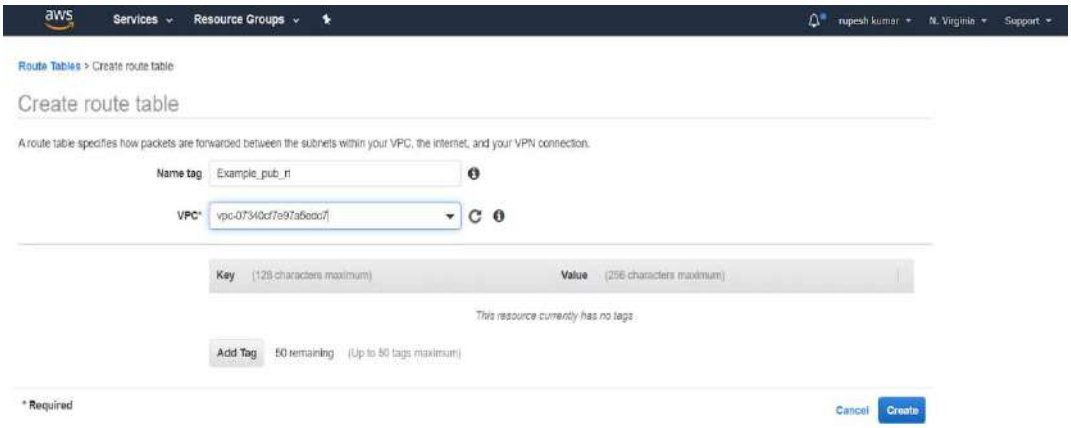
On VPC Dashboard panel

Click on Route Table

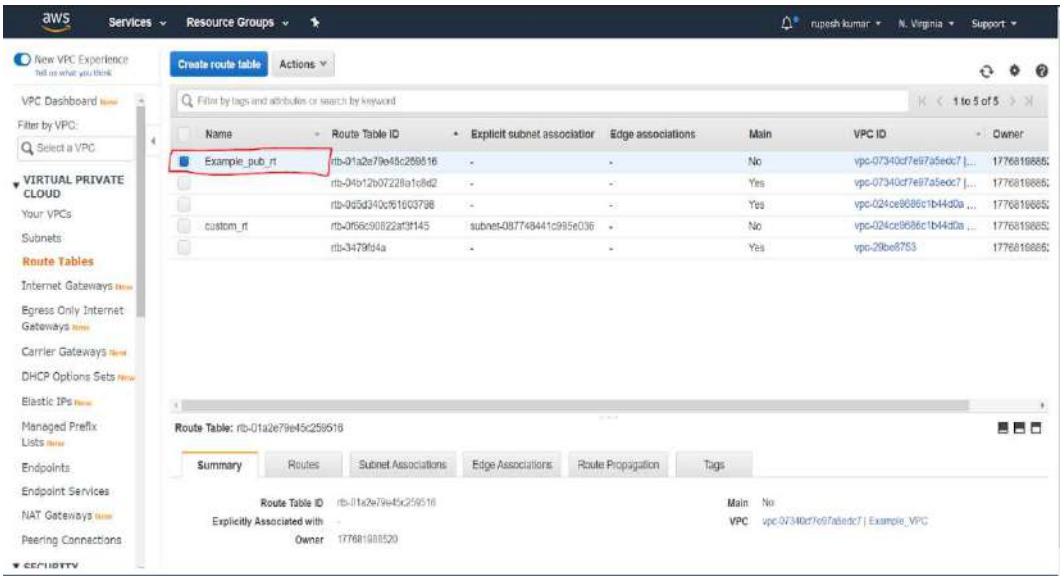
Click on “Create Route Table” button



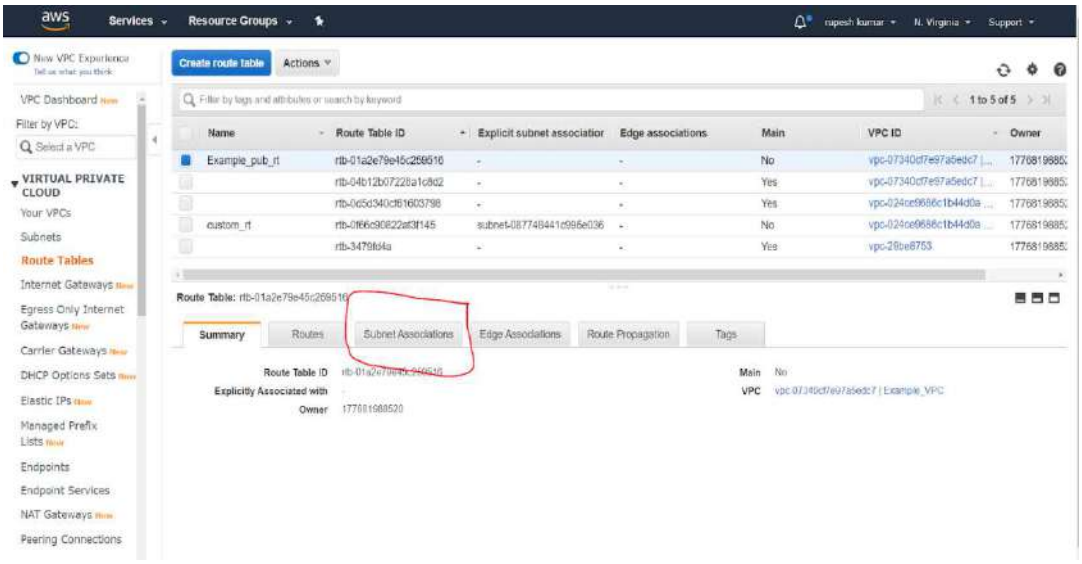
On “Create Route Table” box
For Name tag → Example_pub_rt
For VPC → Example_VPC
Click on “Create” button



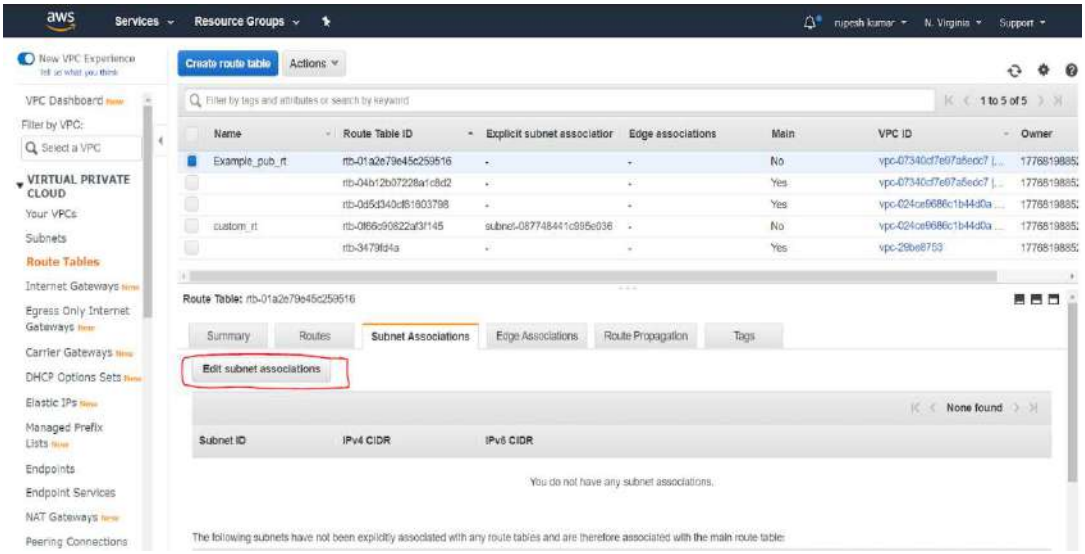
Verify
Example_pub_rt table is created



Click on “Subnet Association” button

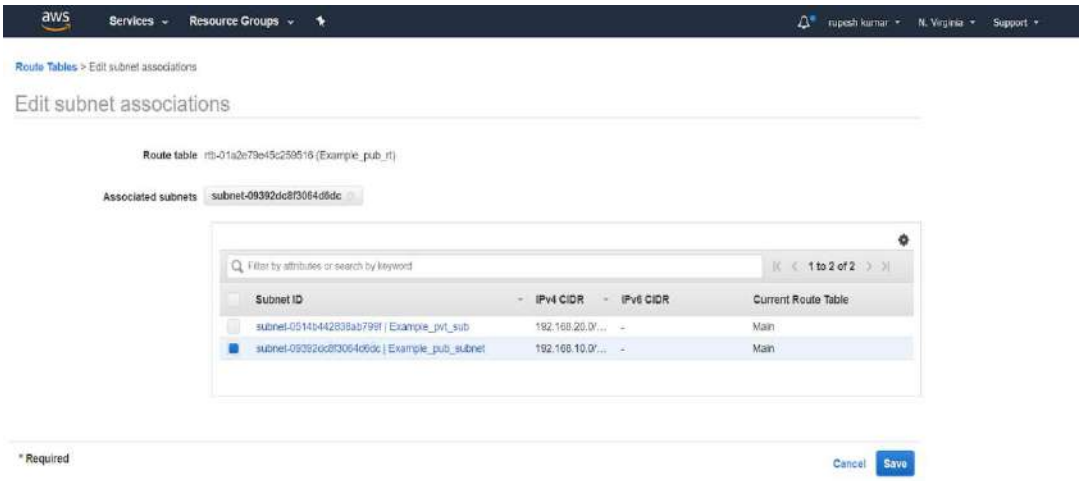


Click on Edit subnet association button



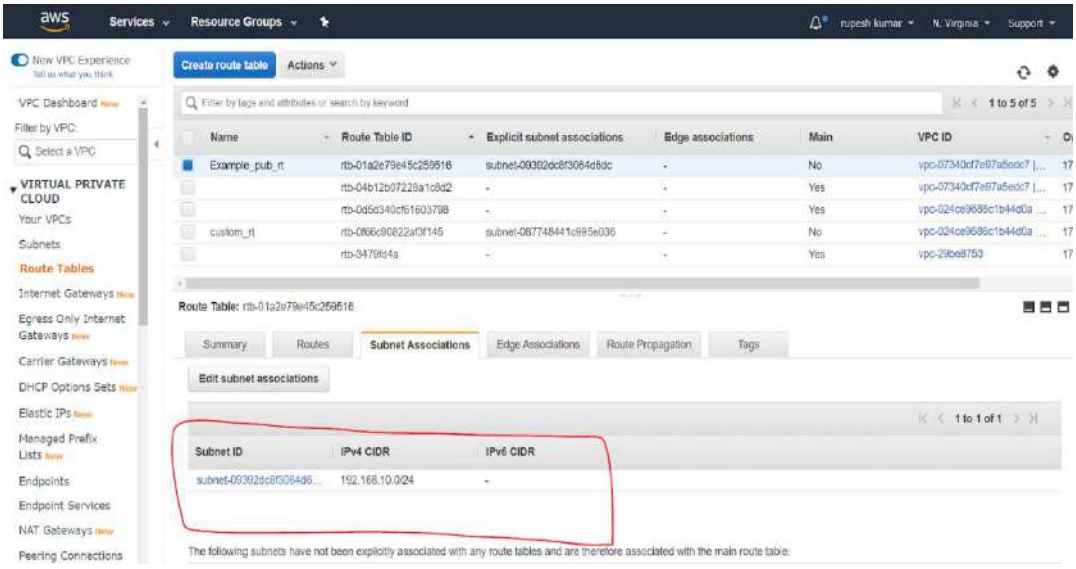
Select checkbox of Example_pub_sub → 192.168.10.0/24

Click on save button



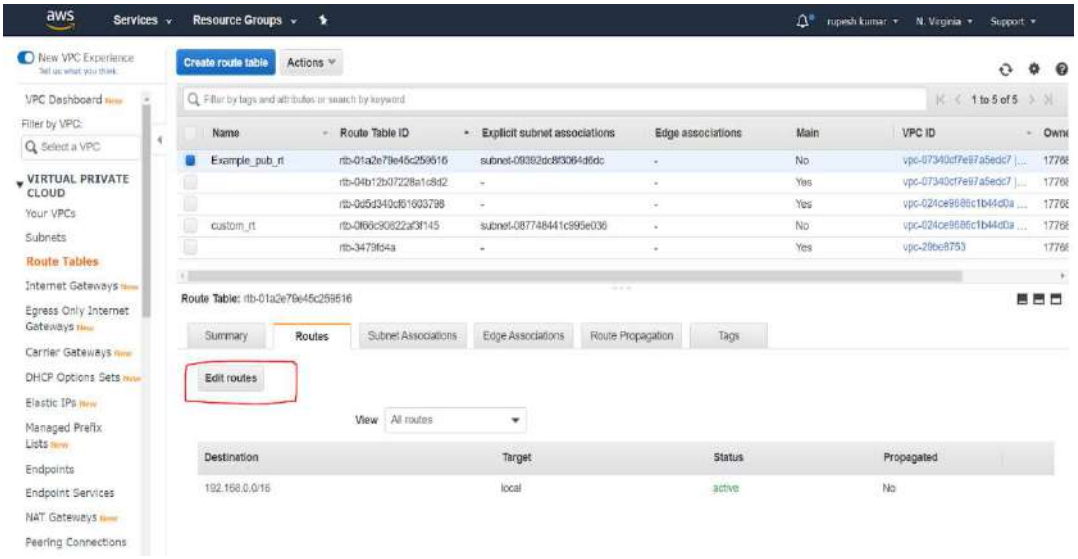
Verify

Example_pub_subnet is associated with routing table

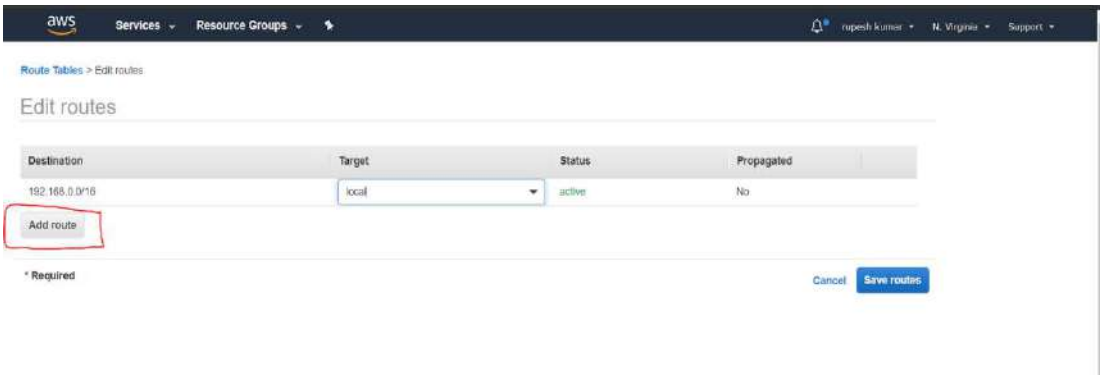


Click on Route button

Click on Edit button

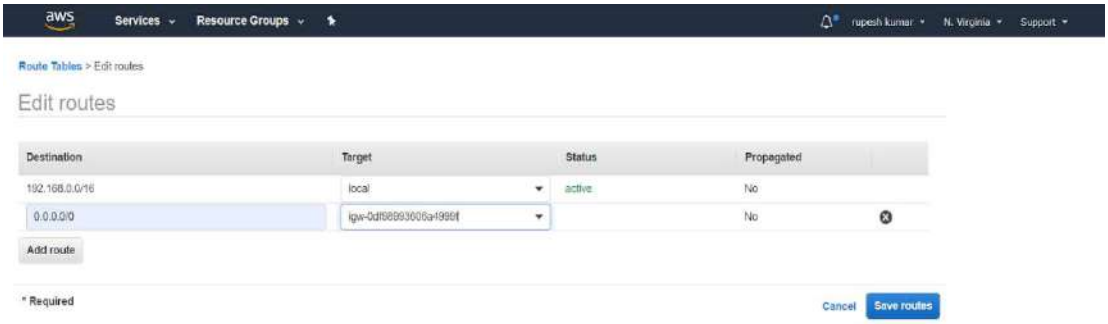


Click on "Add route" button



For Destination → 0.0.0.0/0
For Target →select Example_IGW

Click on Save button

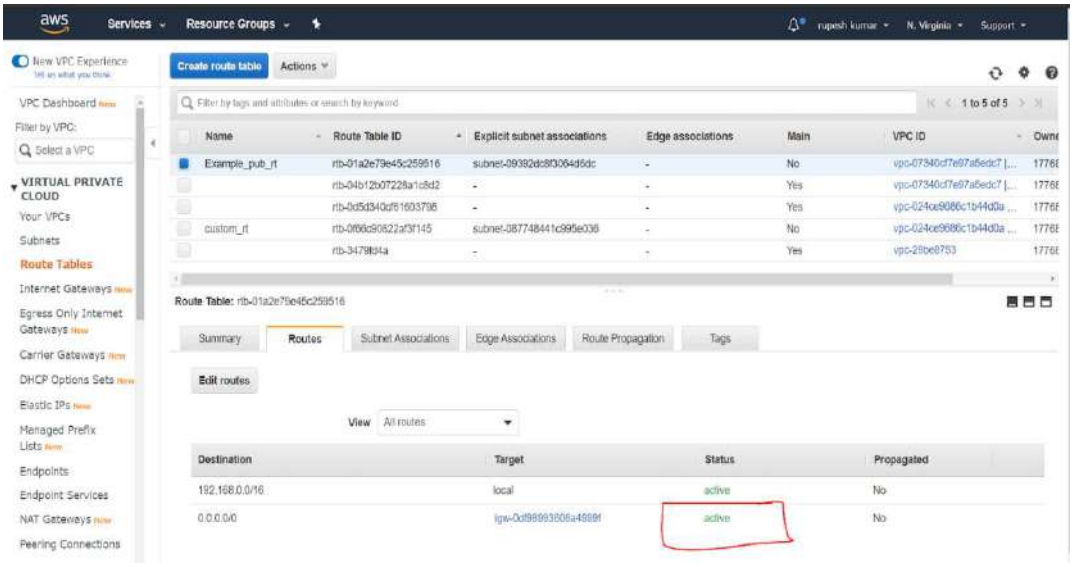


Verification

Public route is added through internet gateway

Verify

Status column show Active

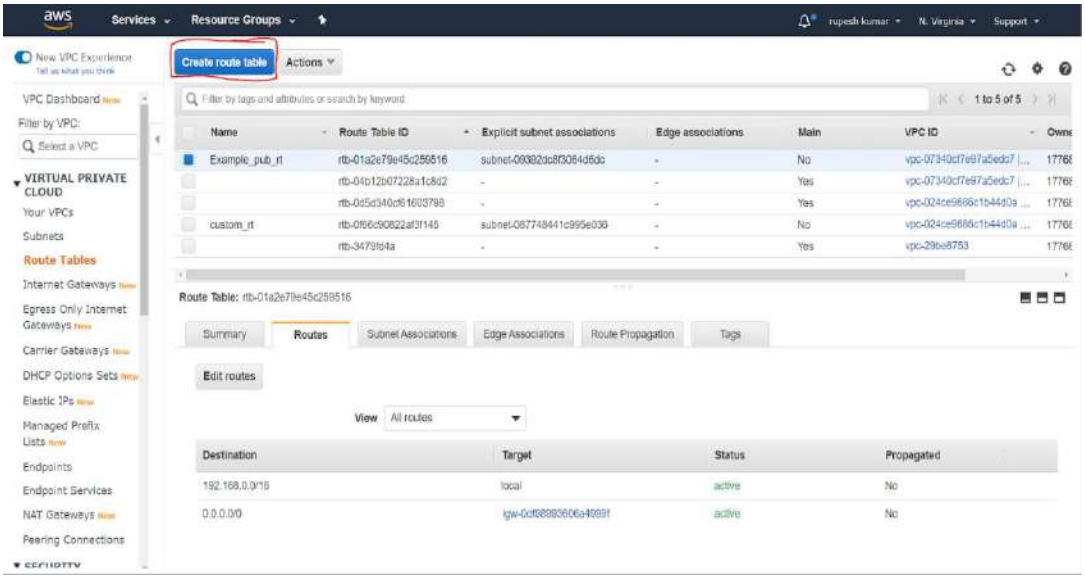


Create Private Routing Table, associate subnet and add routing rules

On VPC Dashboard panel

Select Route table

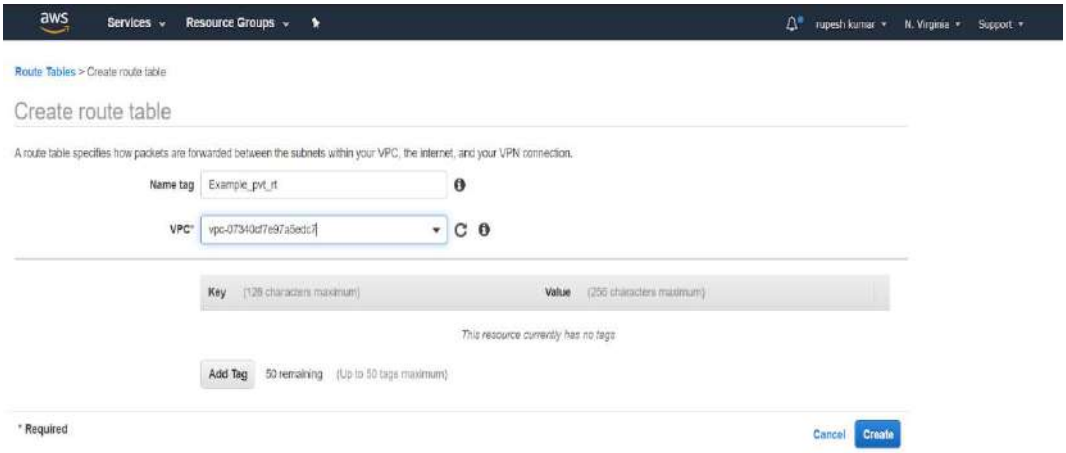
Click on “Create Route Table”



On “Create Route Table” box

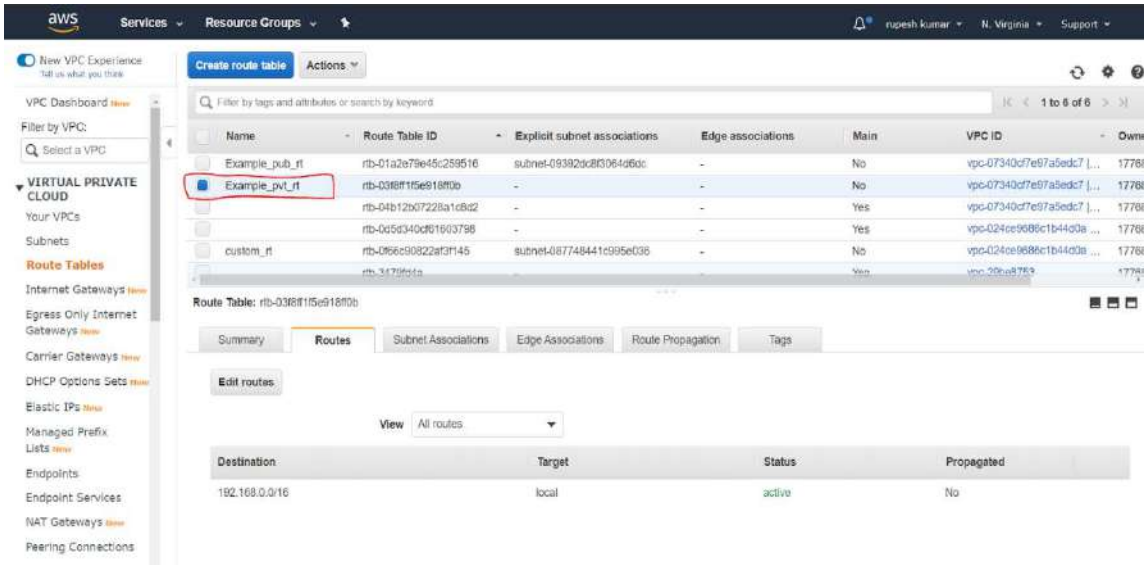
For name tag → Example_pvt_rt
For VPC → Example_VPC

Click on “Create button”

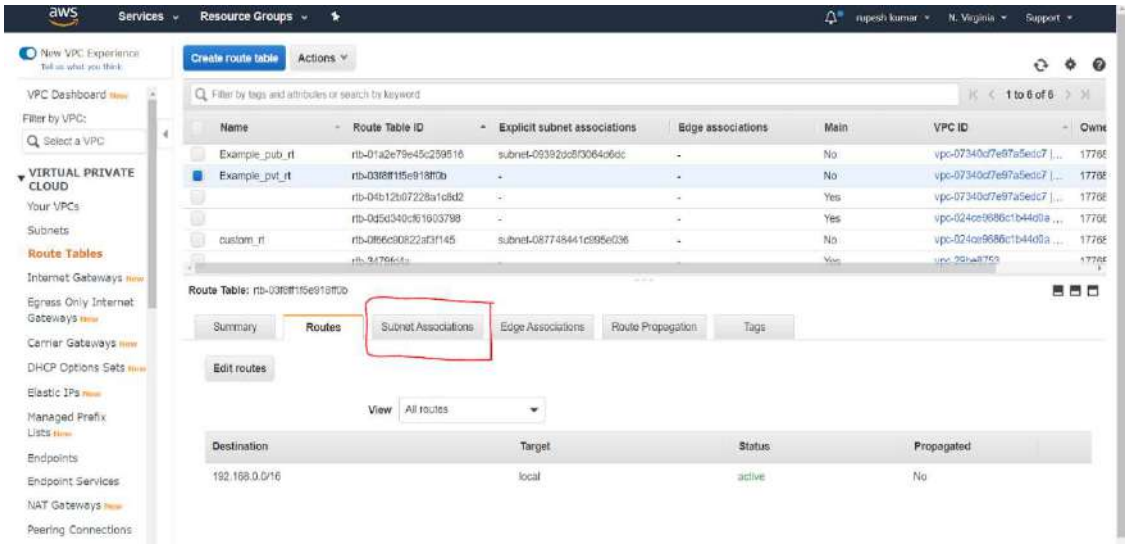


Verify

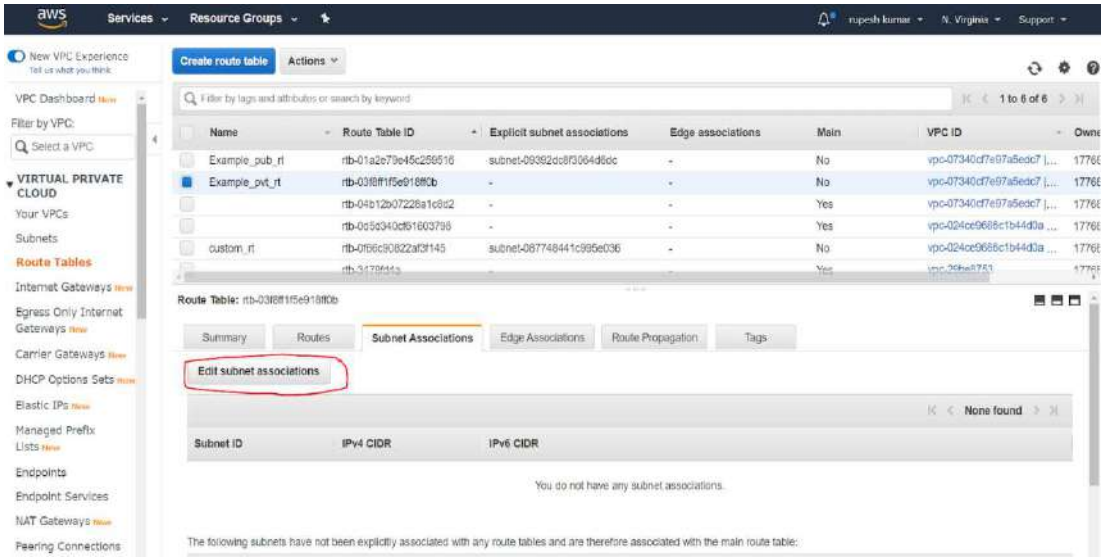
Example_pvt_rt table is create



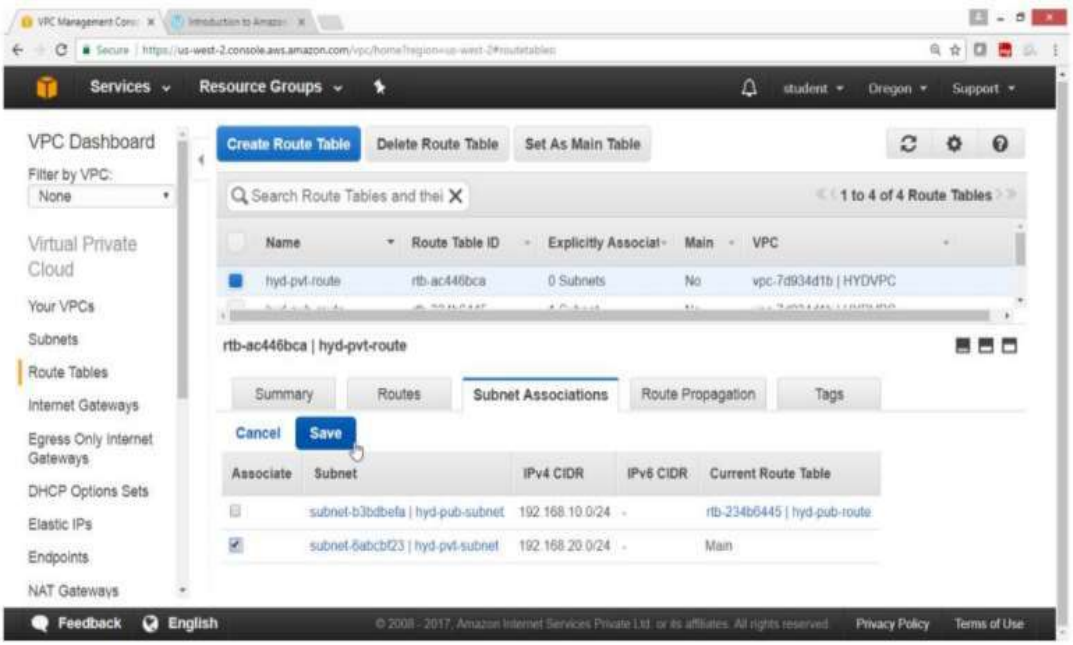
Click on Subnet Association button



Click on Edit button



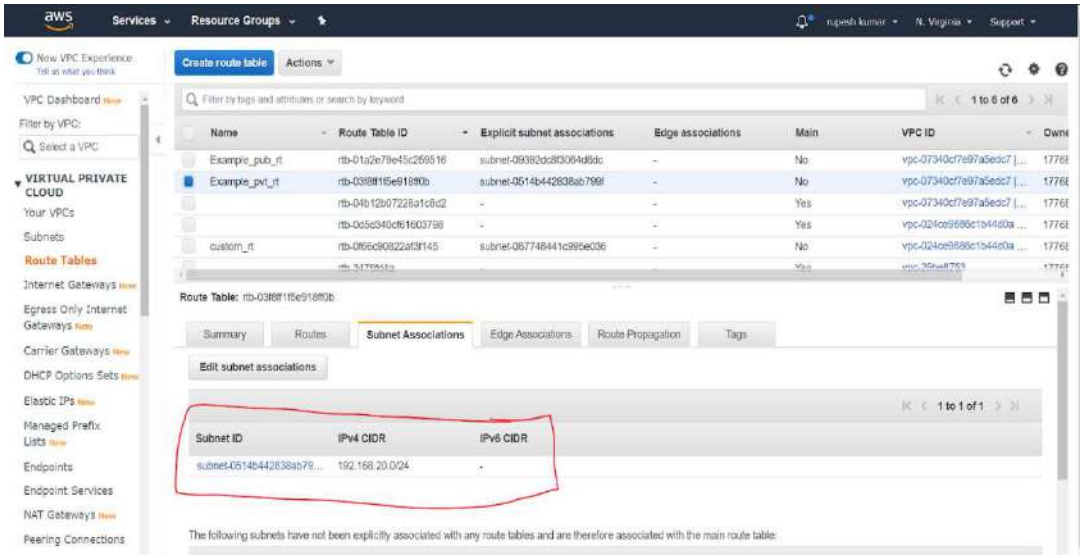
Select Checkbox Example_pvt_sub → 192.168.20.0/24



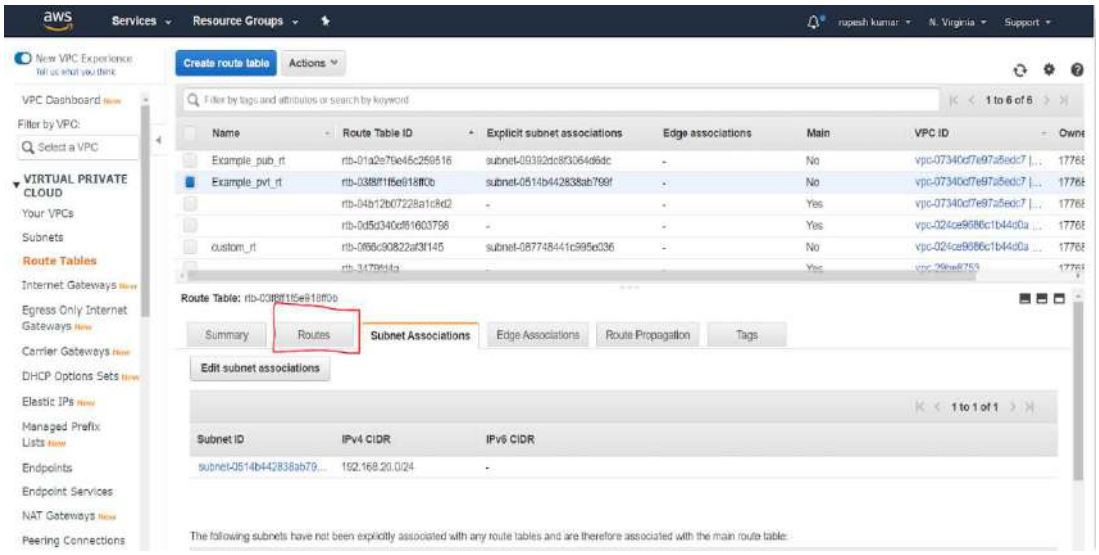
Click on Save button

Verify

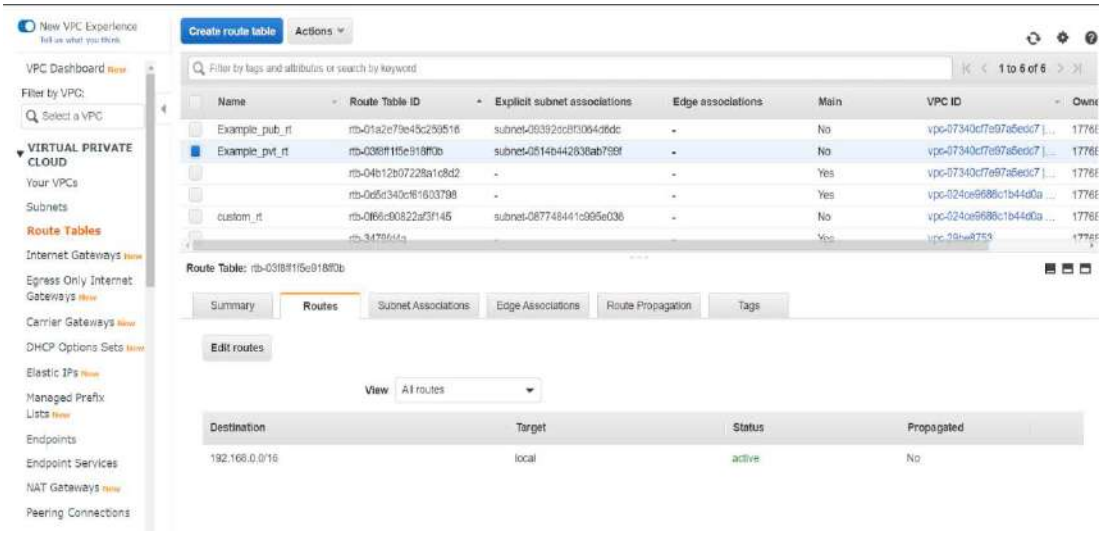
Example_pvt_sub is associated with Example_pvt_rt table



Click on Route button



Note: No need to add IGW in private route



The general pictorial representation of the VPC under the public and private subnet is shown below.