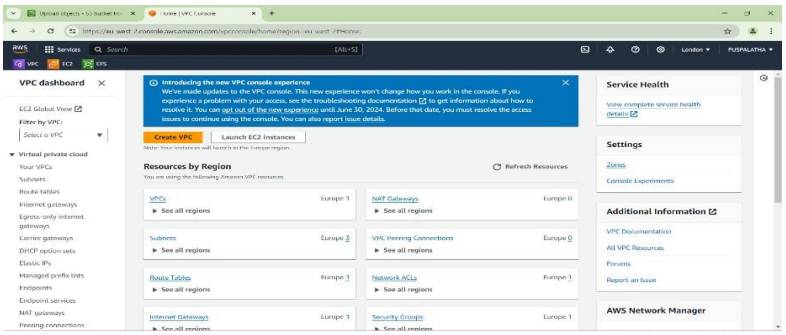
# Virtual Private Cloud(VPC) Creation

**VPC:** VPC stands for Virtual Private Cloud. It's a virtual network dedicated to your AWS account. It enables us to launch resources like EC2 instances into a virtual network that we define. This provides us with control over our virtual networking environment, including selecting the IP address range, creating subnets, and configuring route tables and network gateways. VPC helps in isolating the resources from other parts of the cloud, giving us a secure and private environment to run our applications.

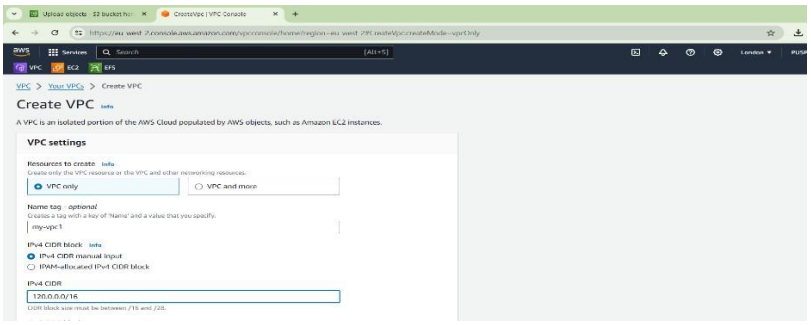
**Creation:** Login to the AWS account.

**STEP 1 :To create VPC**

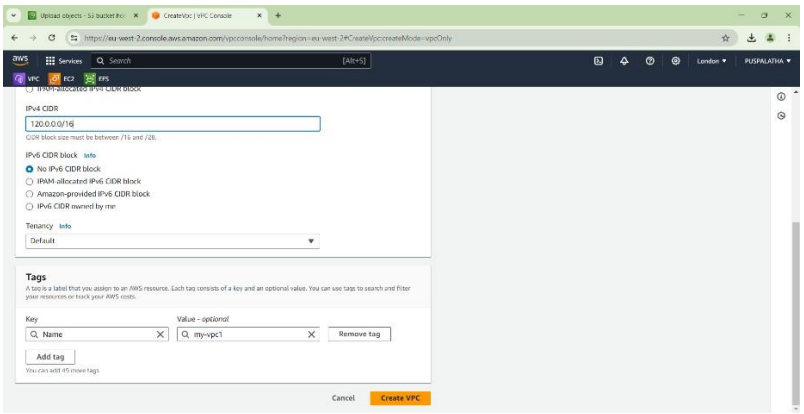
Click on VPC, Create VPC.




Select VPC only. Name the VPC as **"my-vpc1"**.



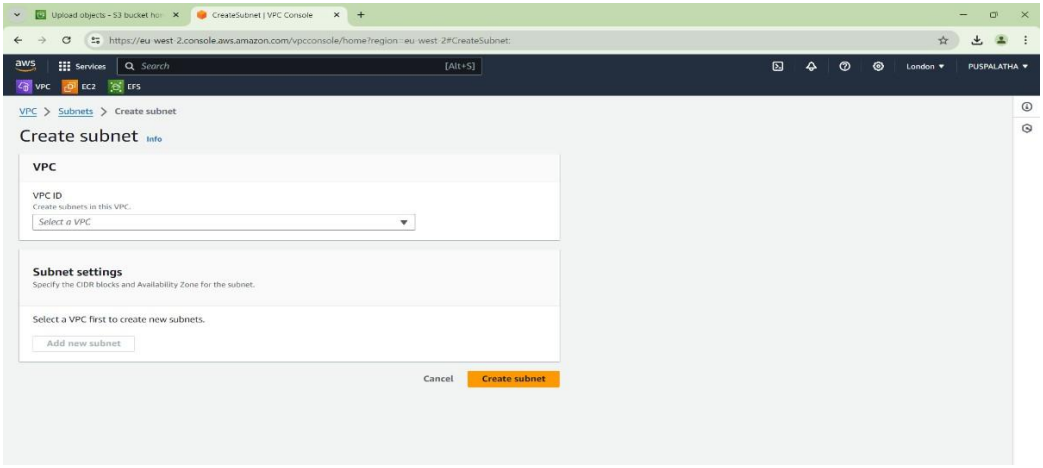

Give IPv4 CIDR rang as **"120.0.0.0/16"**.Scroll down and click on create VPC.



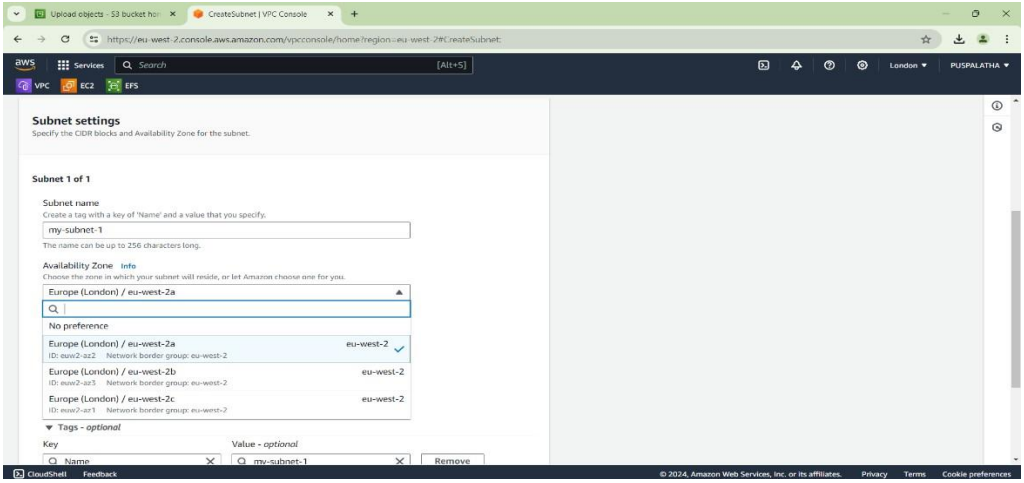
# Virtual Private Cloud(VPC) Creation

## STEP 2 :To create a Subnet

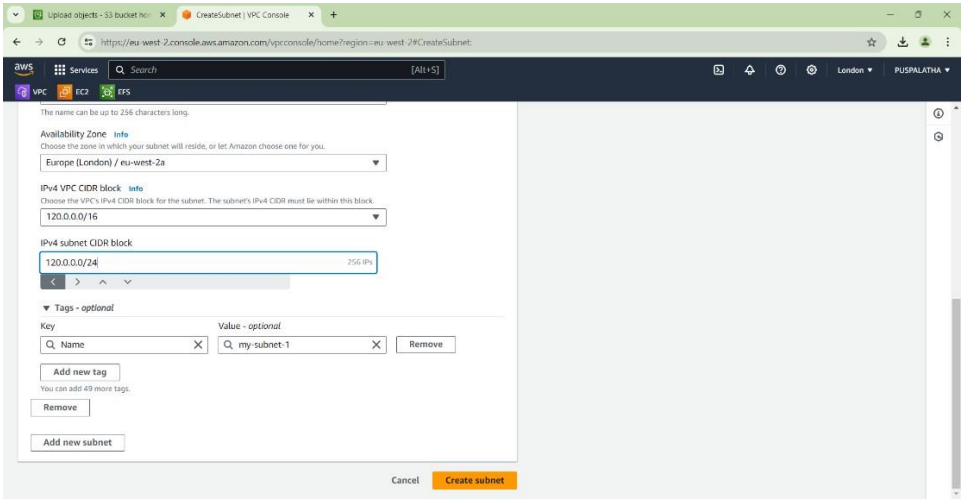
Click on **“Subnets”**.Create subnet.




Now select the subnet VPC (i.e.;my-vpc1). And name the subnet as **“my-subnet-1”**
**.**Select the availability zone **“a”**(i.e:2a zone).

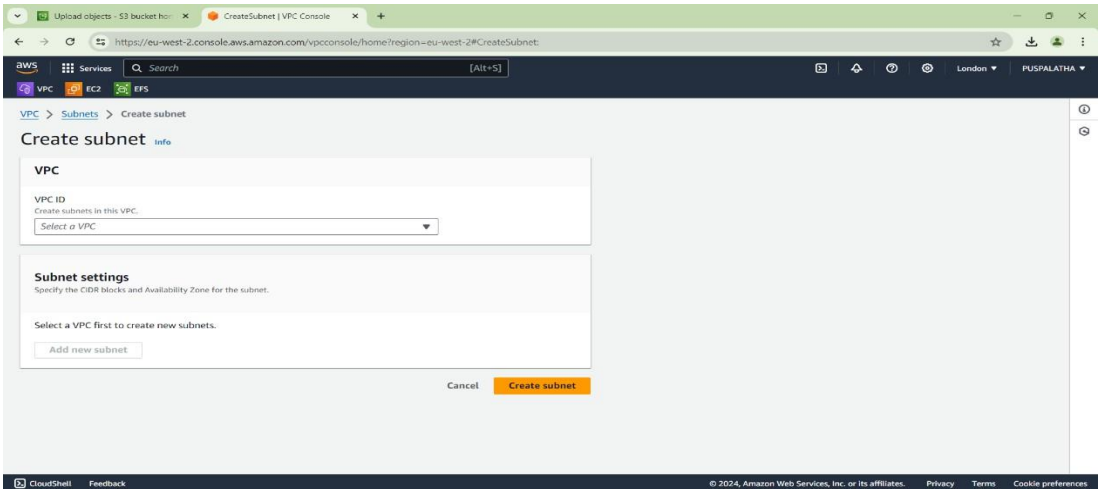



Give IPv4 subnet CIDR range as **“120.0.0.0/24”**.Then we can see **“256IPS”**, but it will use only 251, the remaining are stored for future purpose.Click on create subnet.

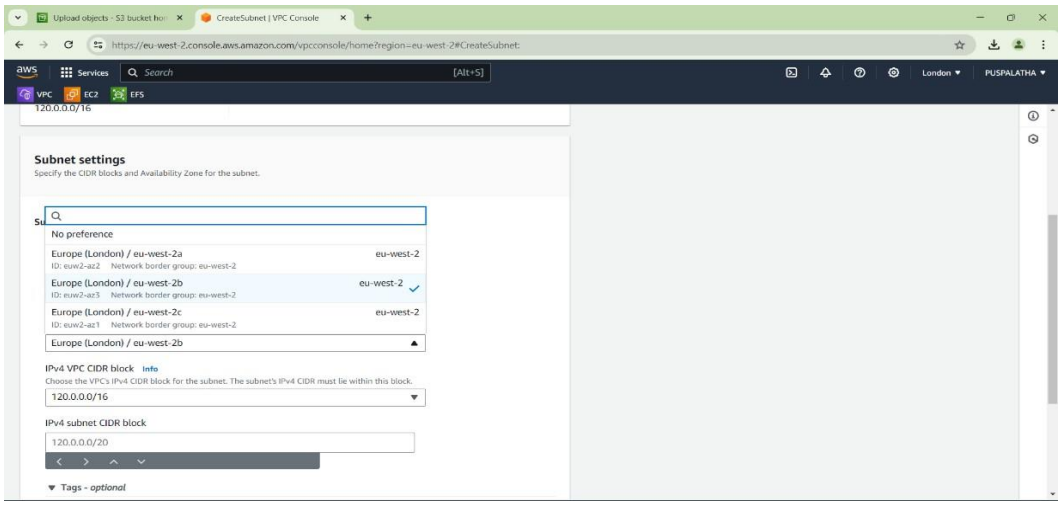


# Virtual Private Cloud(VPC) Creation

Now create one more subnet. Click on Create a subnet, select the VPV(i.e.my-vpc1).



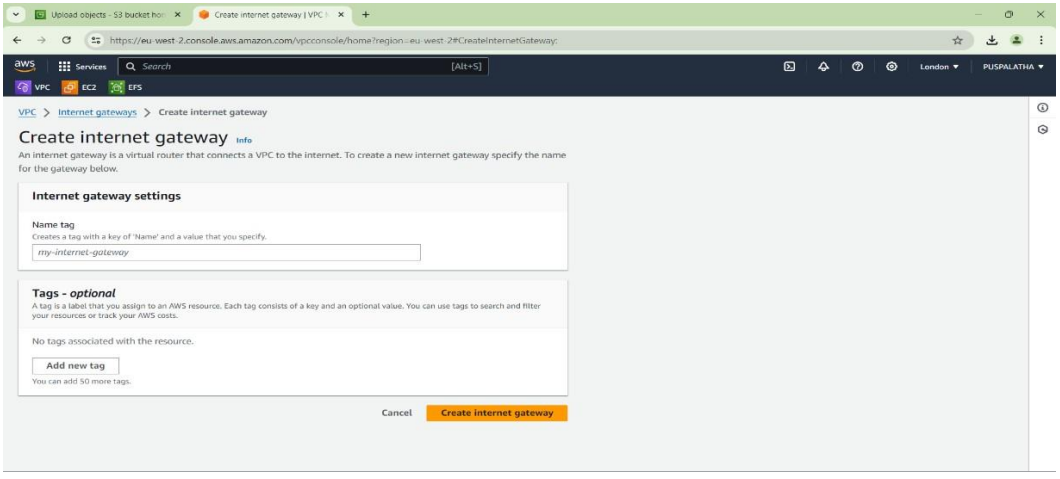

Now select the availability zone **"b"** (i.e. 2b).




Give the IPv4 CIDR range as **"120.0.3.0/24"**, scroll down, and click on Create Subnet.

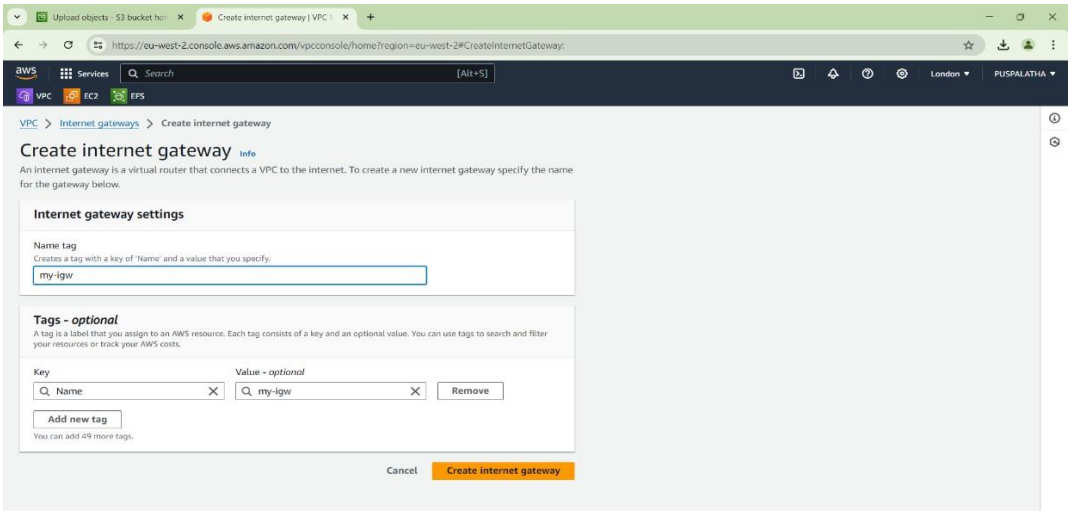
## STEP 3: To Create an Internet Gateway

Click on **"Internet Gateway",** Create internet gateway.

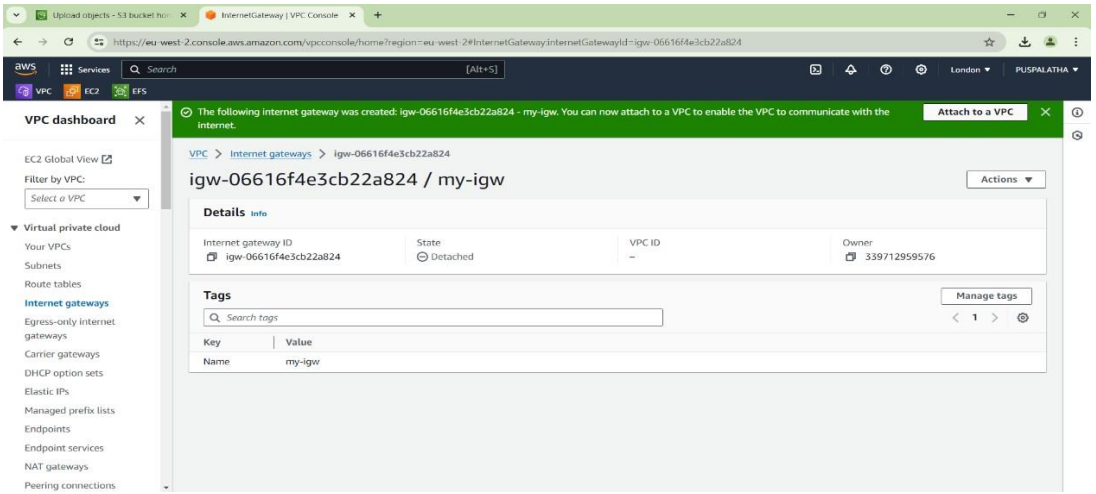


# Virtual Private Cloud(VPC) Creation

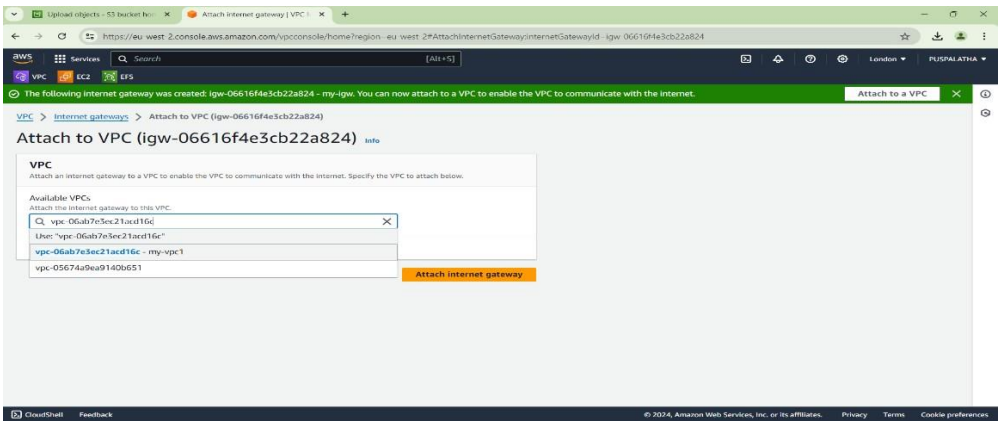
Name the internet gateway as **“my-igw”.** Click on create internet gateway.




Now it will show **“Attach VPC”** automatically at the top, click on it.



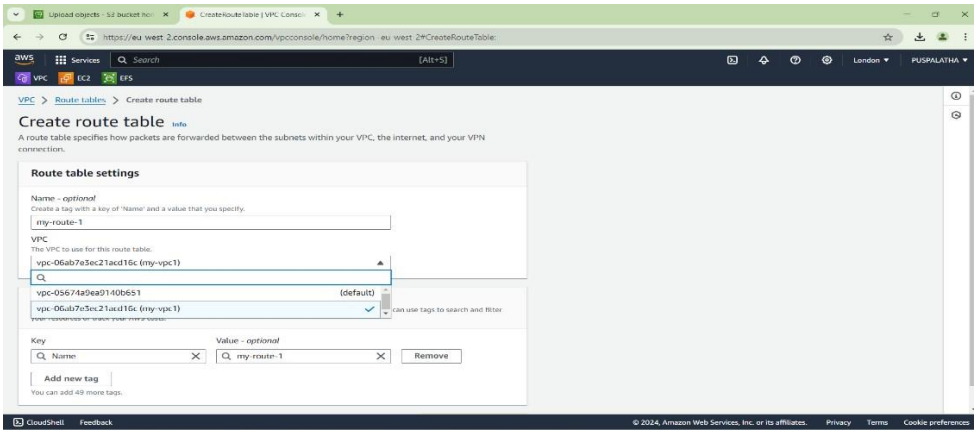

Now click on available VPC’s (i.e. my-vpc-1), click on attach internet gateway.



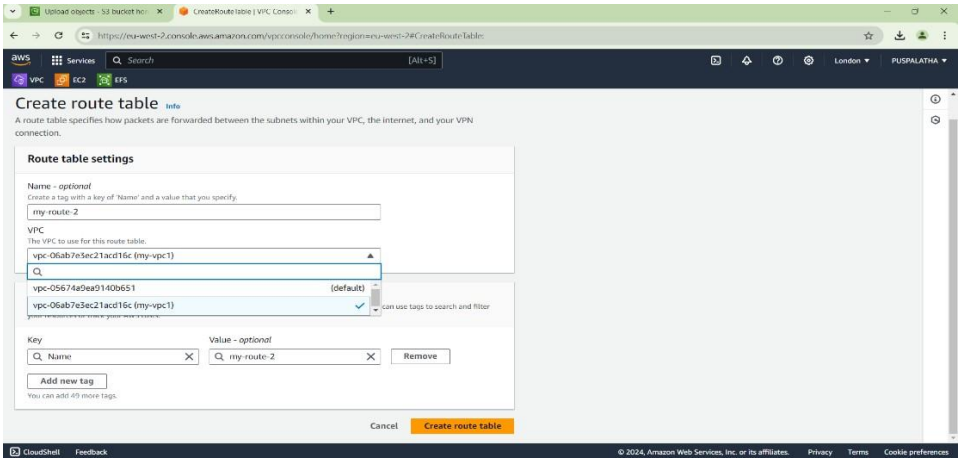
# Virtual Private Cloud(VPC) Creation

**STEP 4: To create Route Tables**

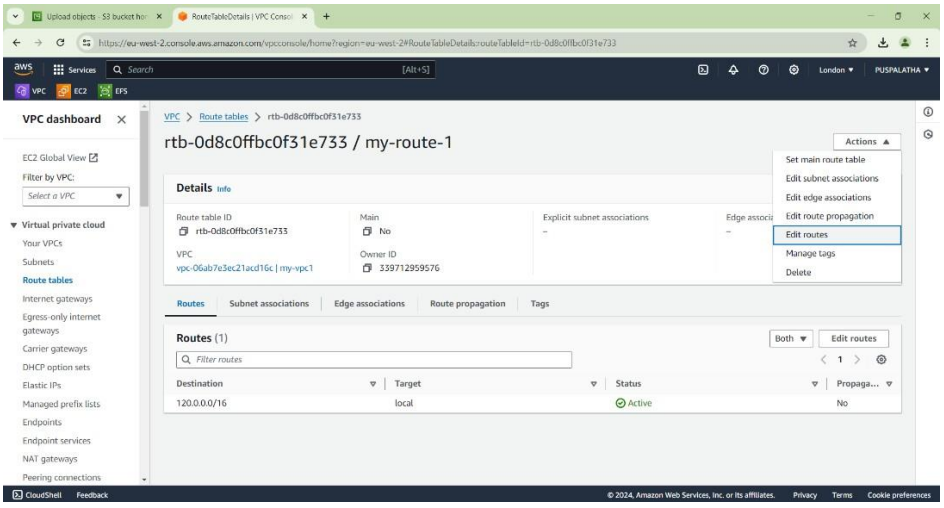
Click on **"Route Tables", and** create route tables. Name the route table as **"my-route-1".**Select the VPC (my-vpc-1). Click on Create Route Tables.




Create one more route table and name it **"my-route-2".** Select the VPC (my-vpc-1). Click on Create Route Tables.

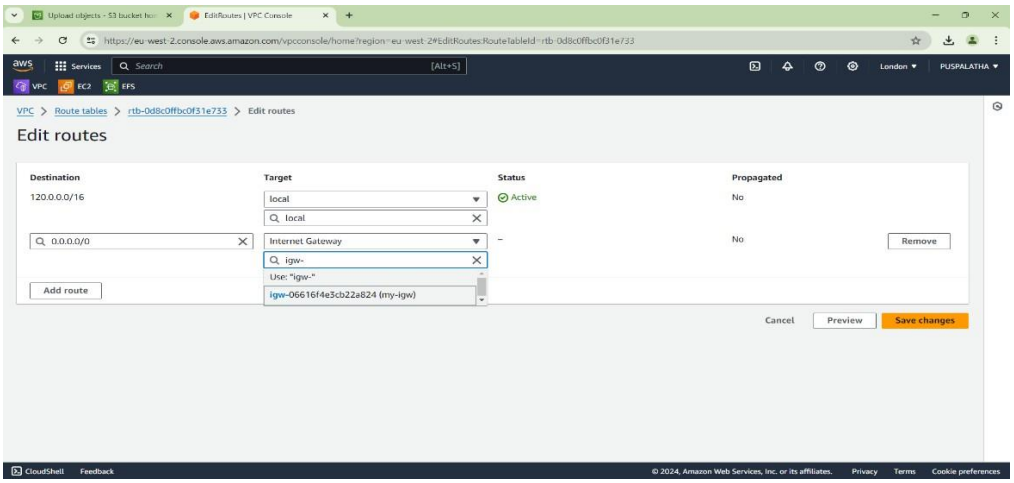



Now click on Route Table 1, then click on actions, edit routes.

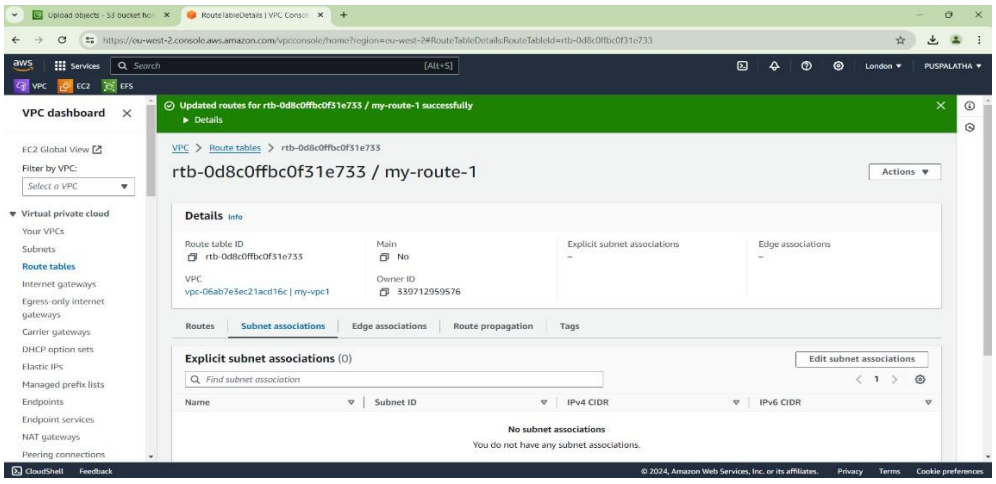


# Virtual Private Cloud(VPC) Creation

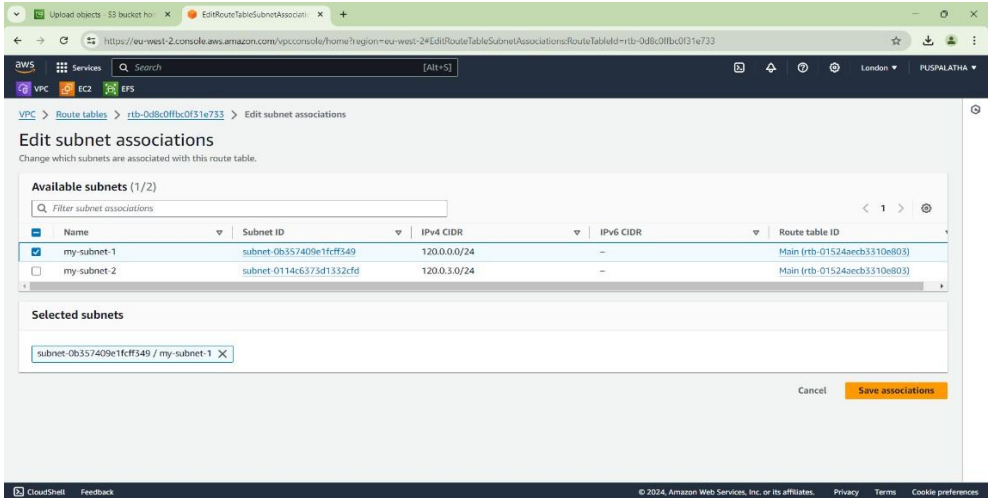
Click on Add Routes. Select IP as **“0.0.0.0/0”**, local **“internet gateway”.**Select **“my-igw”,** Save Changes.




Click on **“Subnet associations”** in route table 1.



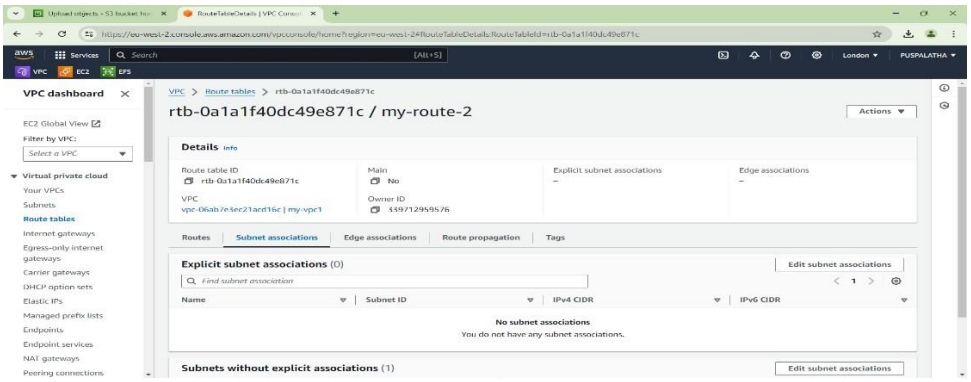

Click on edit subnet associations. Select **“Subnet-1”.**Save associations.



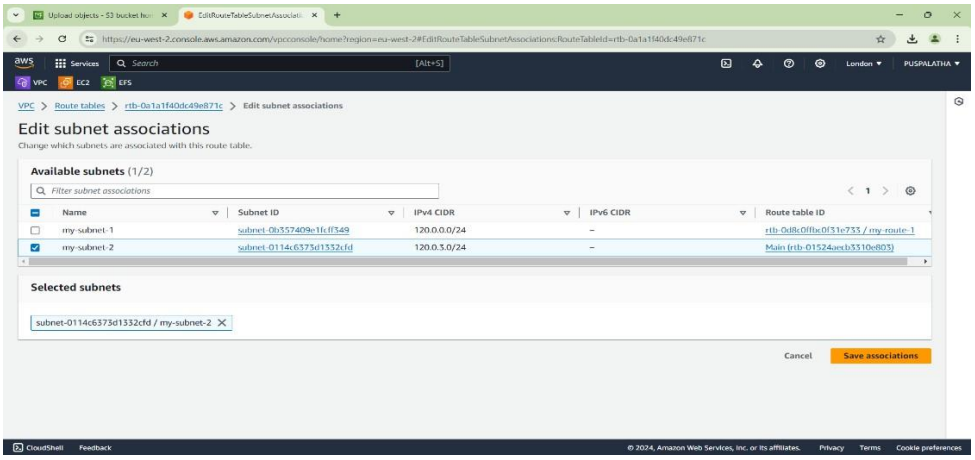
# Virtual Private Cloud(VPC) Creation

Now this route table is attached with the internet gateway. So it is a **“Public association”.**

Select route table 2, and Click on subnet associations.

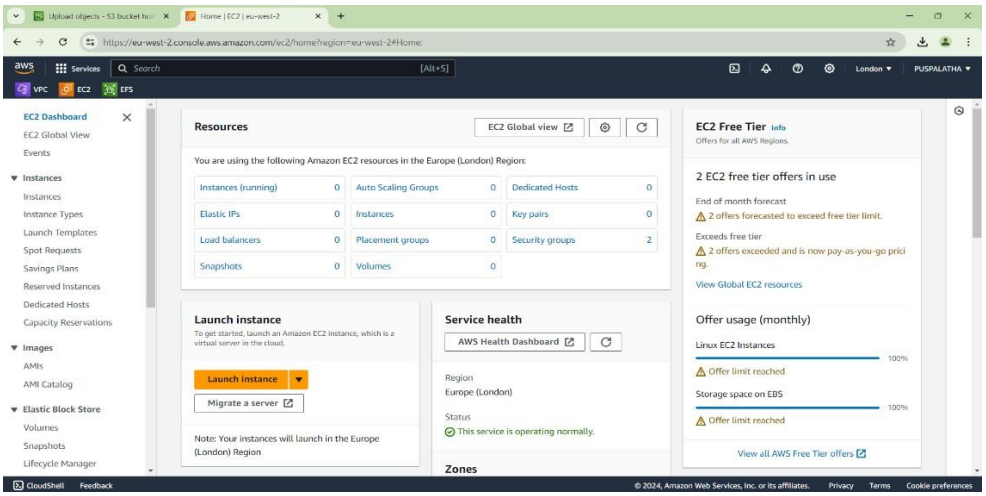



Click on edit subnet associations. Select subnet-2, Save associations.



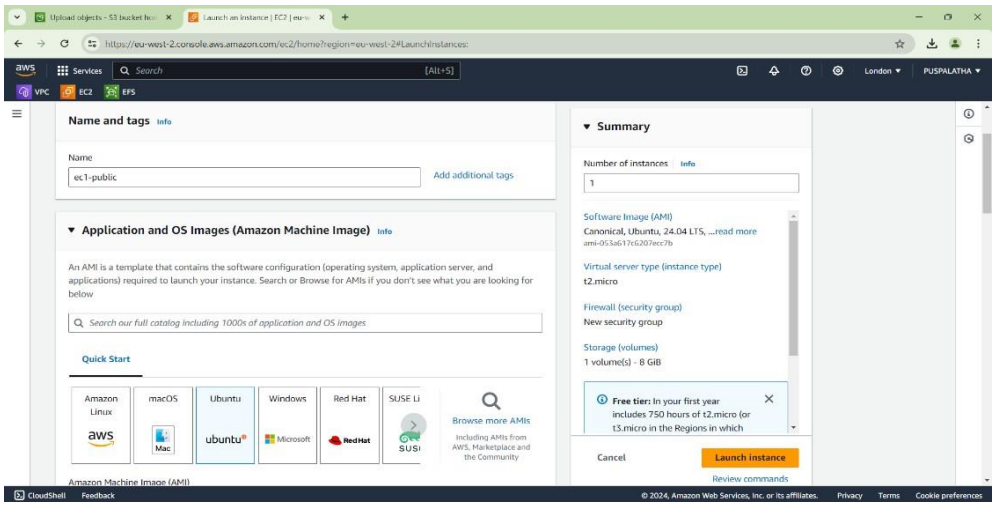

This route table is not attached to the internet gateway. So, it is a **“Private association”. STEP 5: To launch the Servers.**

Open **“E2 Instance”.**Click on instances, Launch instances.

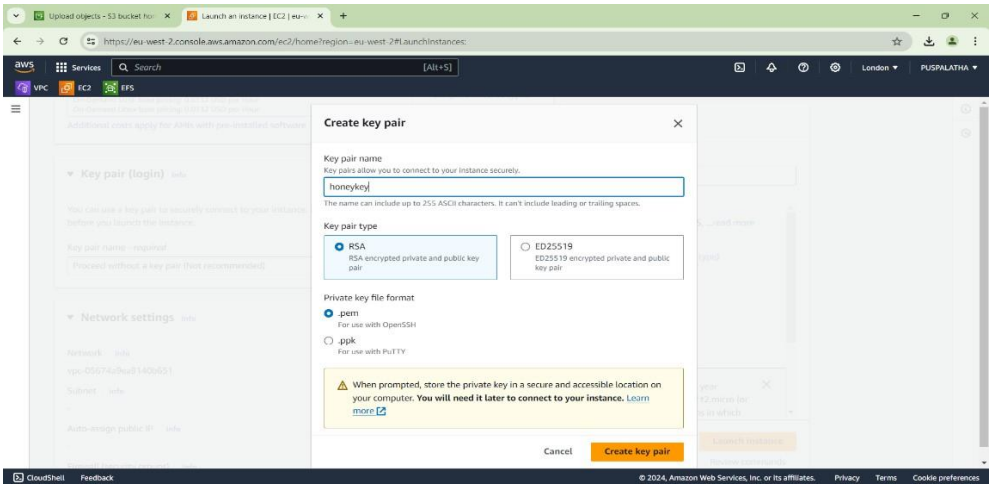


# Virtual Private Cloud(VPC) Creation

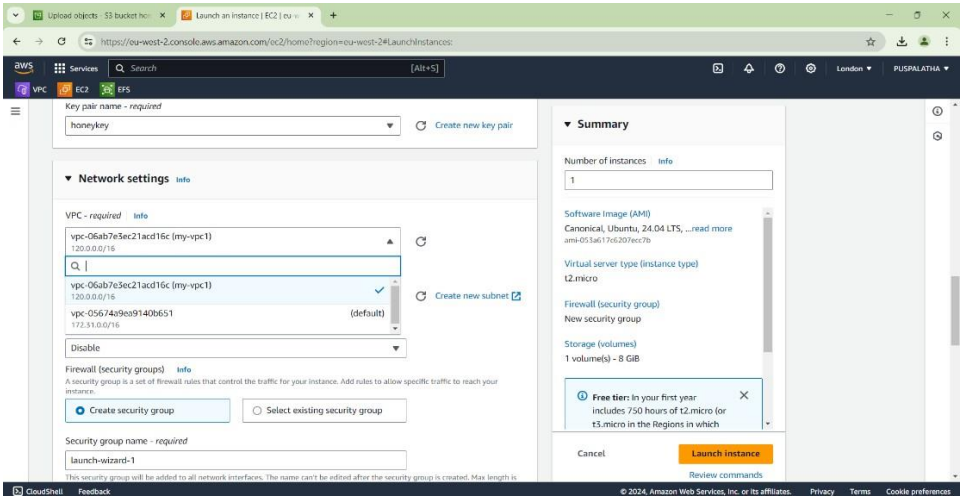
Name the instance as **“ec1-public”**.Select the server **“Ubuntu”.**




Click on Create a new key pair, and name the keypair **“honeykey”.**Click on Create keypair.

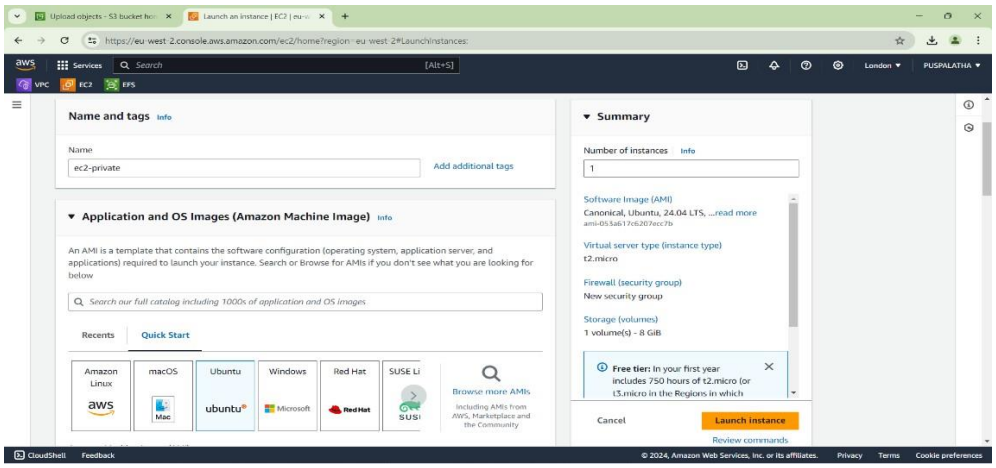



In Networking settings click on edit. Select the VPC (i.e. my-vpc1), Enable auto-assign, and click on the launch instance.

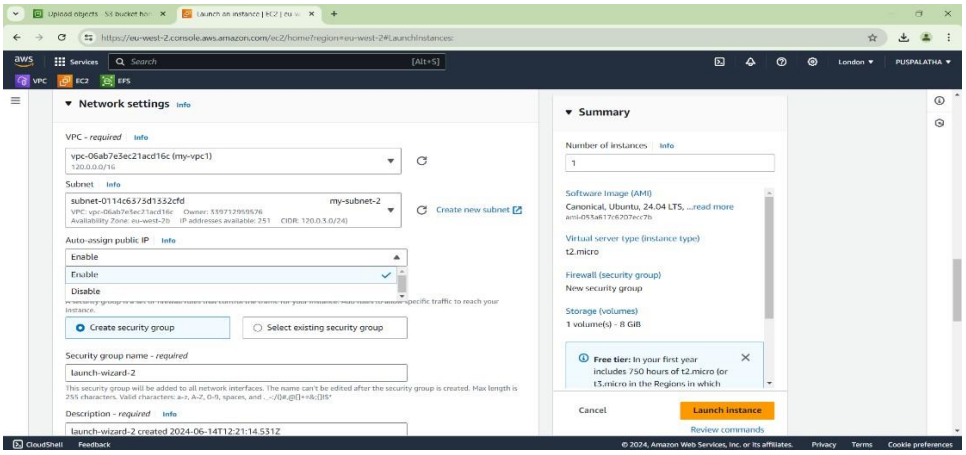


# Virtual Private Cloud(VPC) Creation

Create one more instance and name it as **“ec2-private”** Select the Ubuntu server and keypair(i.e.honeykey).

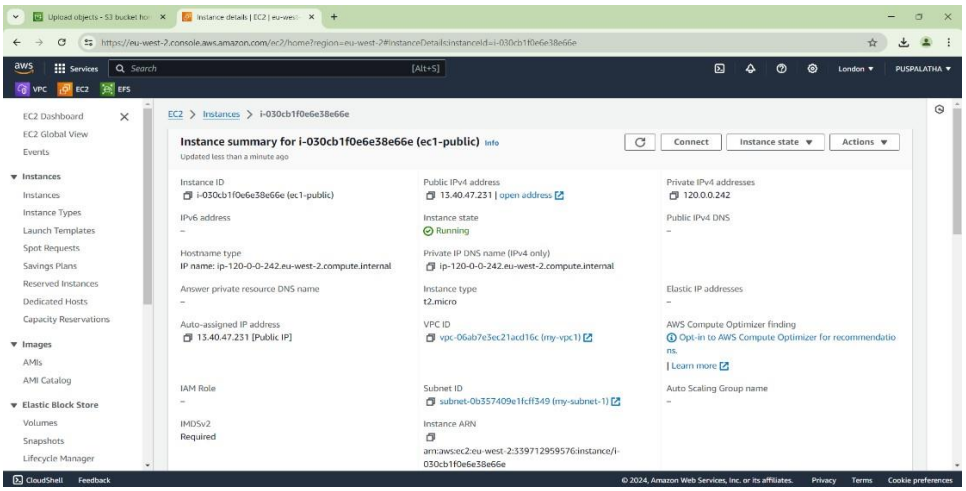



In Networking settings click on edit, select VPC (i.e. my-vpc1), Enable auto-assign, and click on the launch instance.



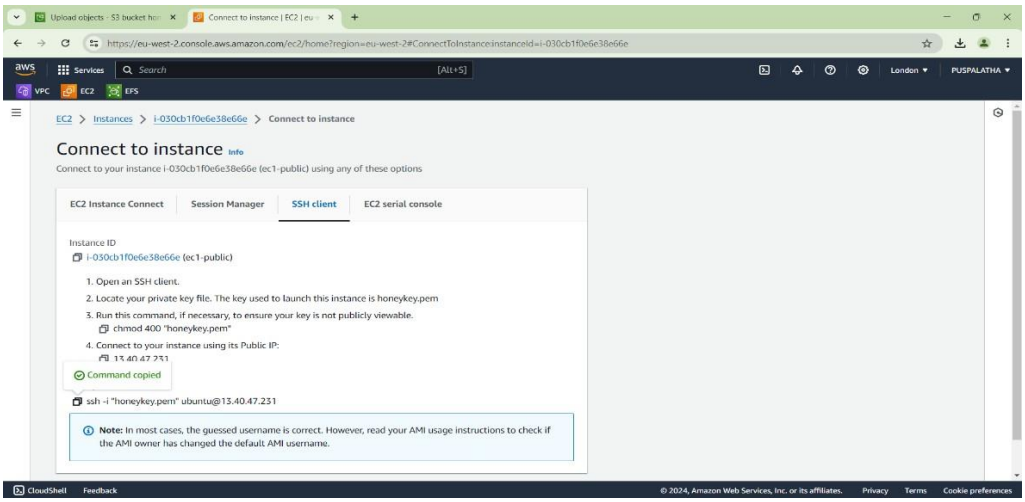

**STEP 6: To check whether it is connected to the Public or not.**

In instances click on **“ec1-public id”**.Click on Connect.

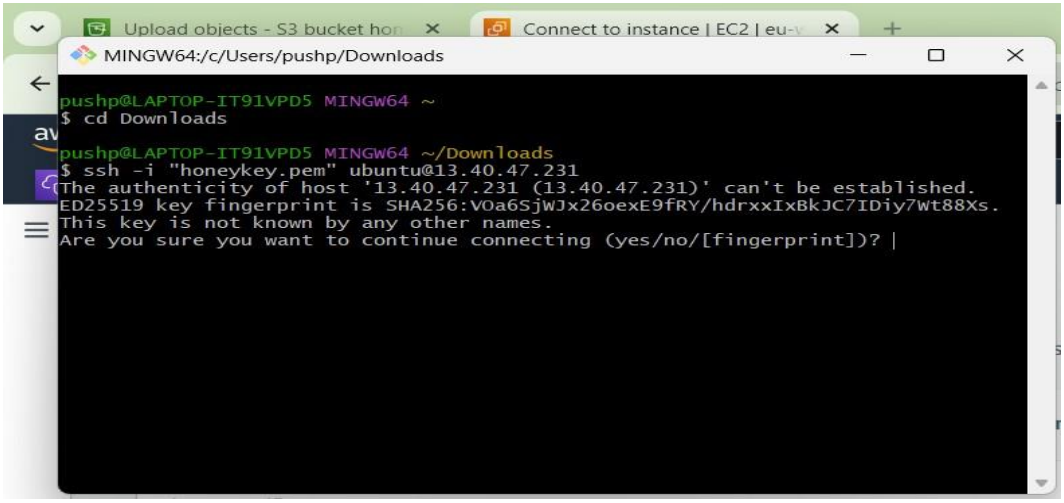


# Virtual Private Cloud(VPC) Creation

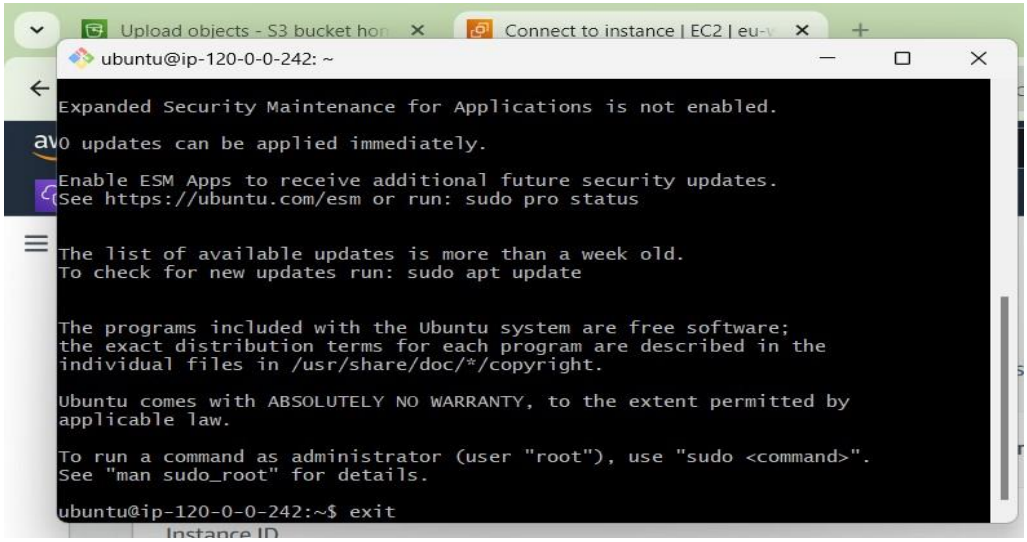
Go to SSH scroll down and copy the **“pem”** file.




Open the **“Git bash”**.Paste the pem file and click on enter.

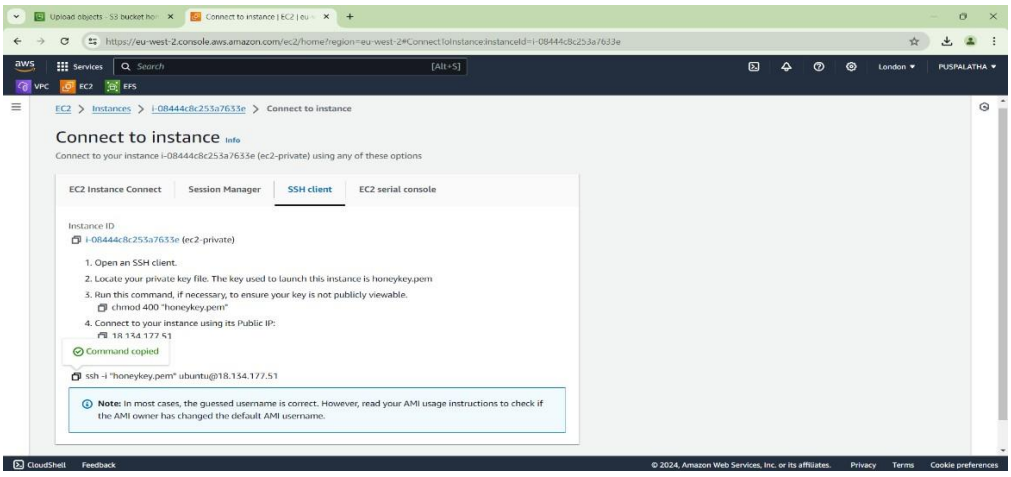



Click yes/no: yes, then it will connect to the server and exit.

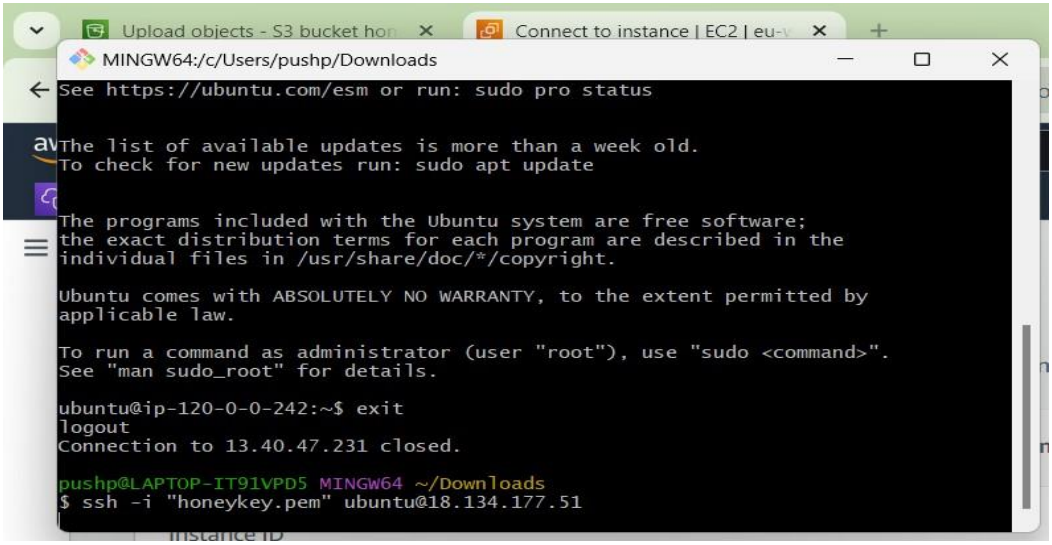


# Virtual Private Cloud(VPC) Creation

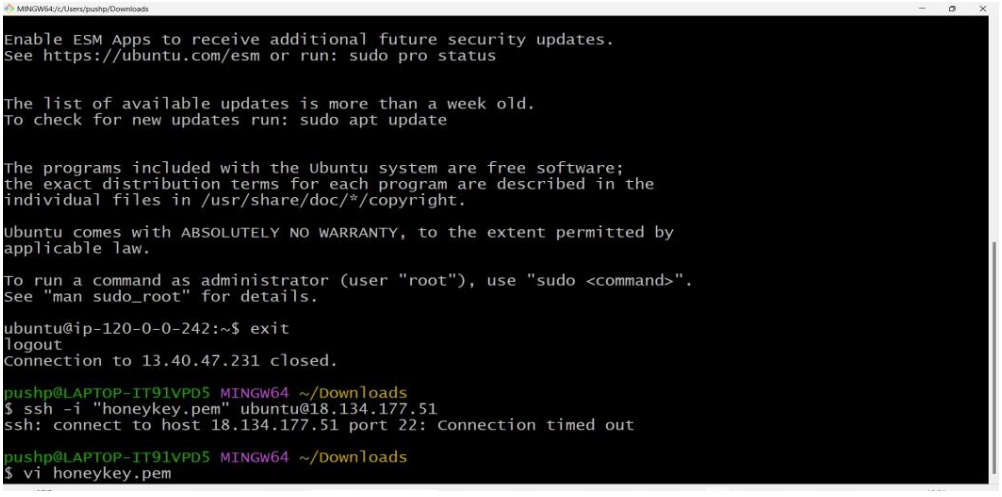
Do the same process for private instances. Click on **“ec2-private id”**.Click on Connect and copy the **“pem”** file.




Paste the pem file in git bash and click enter. It will not connect to the server.



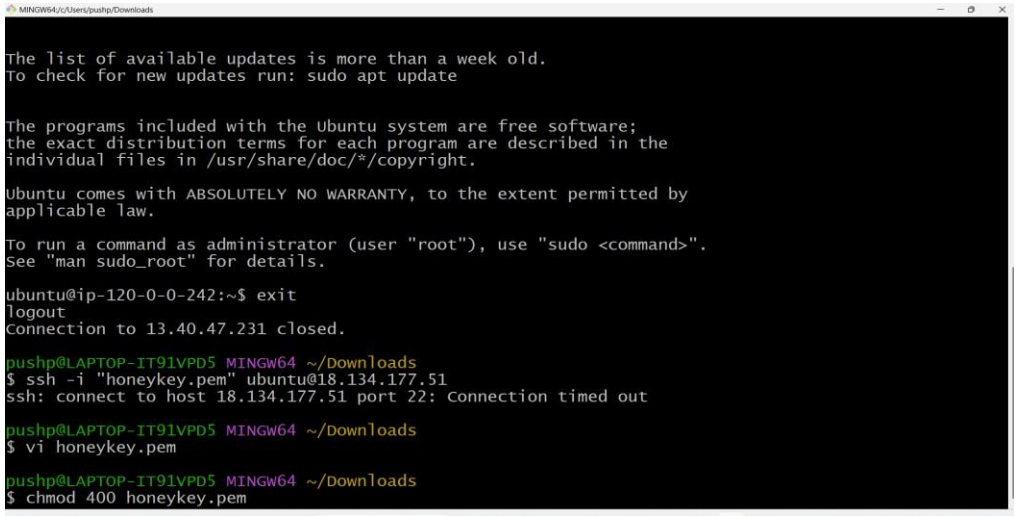

Now create a file in git bash as **“Vi honeykey.pem”.**



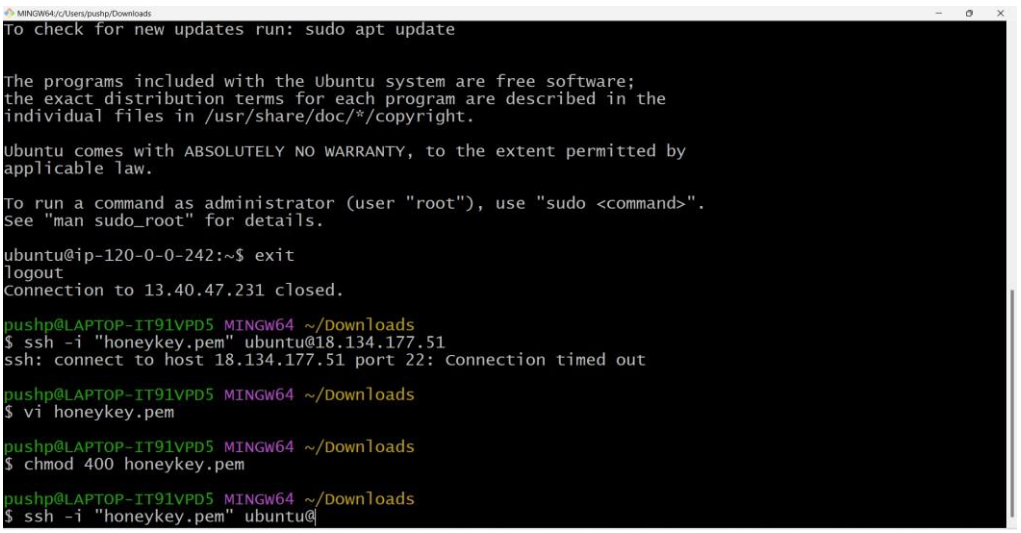
# Virtual Private Cloud(VPC) Creation

Now open the pem file through notepad copy the data in the pem file and paste it into git bash and save it (:wq).


For this file, we need read permission. So use the command **“chmod 400 honeykey.pem”.**

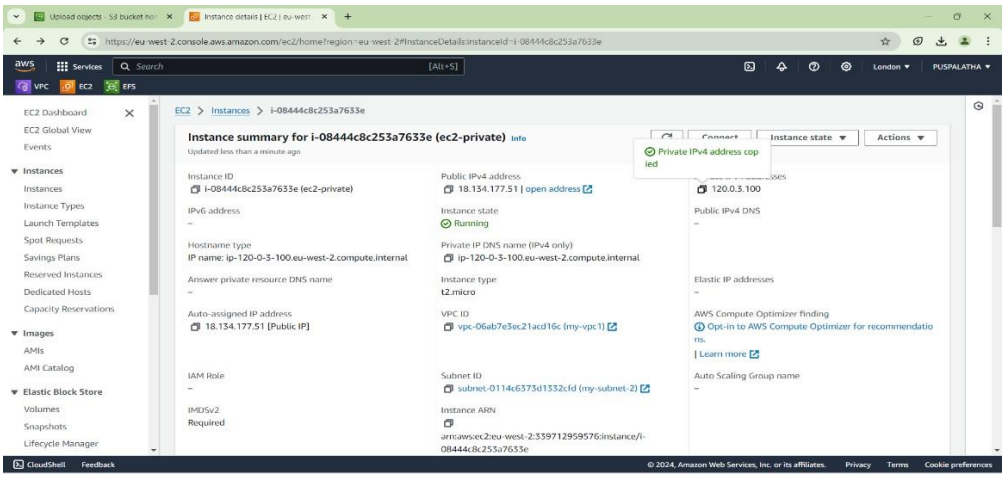



In the ec2-private instance copy the pem command paste it into git bash and remove the last IP address digits.

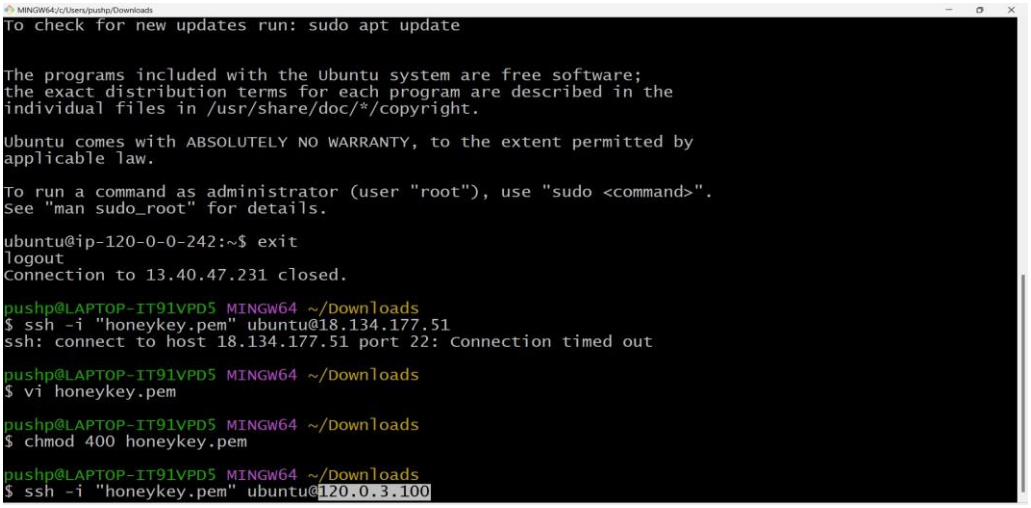


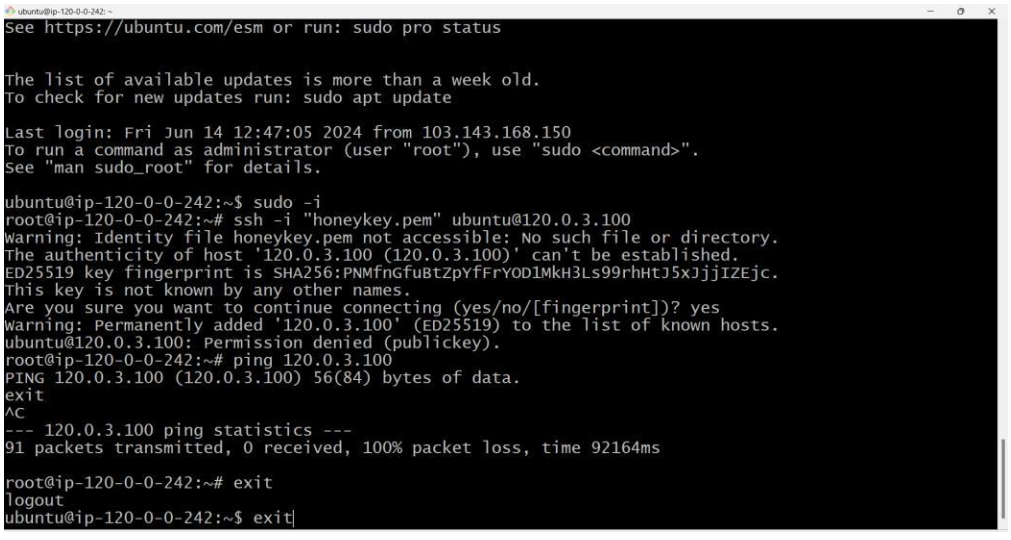
# Virtual Private Cloud(VPC) Creation

Now copy the private IPv4 address of the ec2-private instance.




Paste that ipv4 address in git bash.Click enter and then exit.




This is the process of how we create a **"Virtual Private Cloud(VPC).**