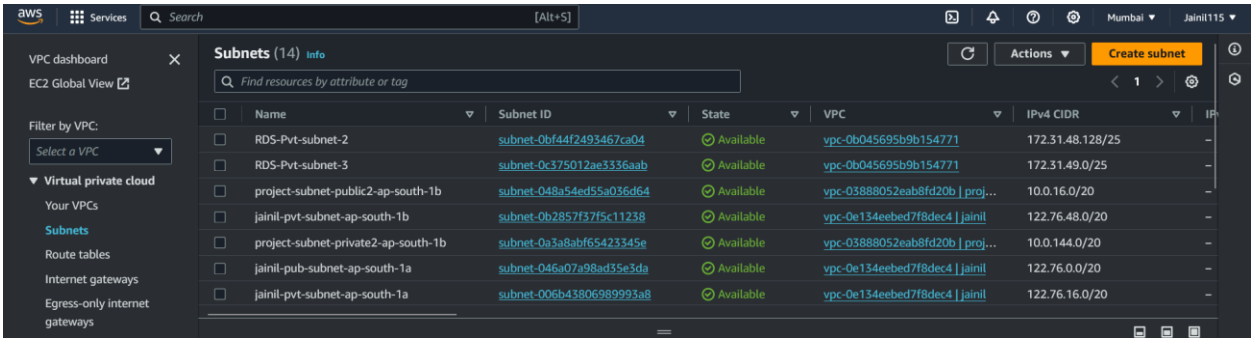
TASK 2: Subnet Configuration:

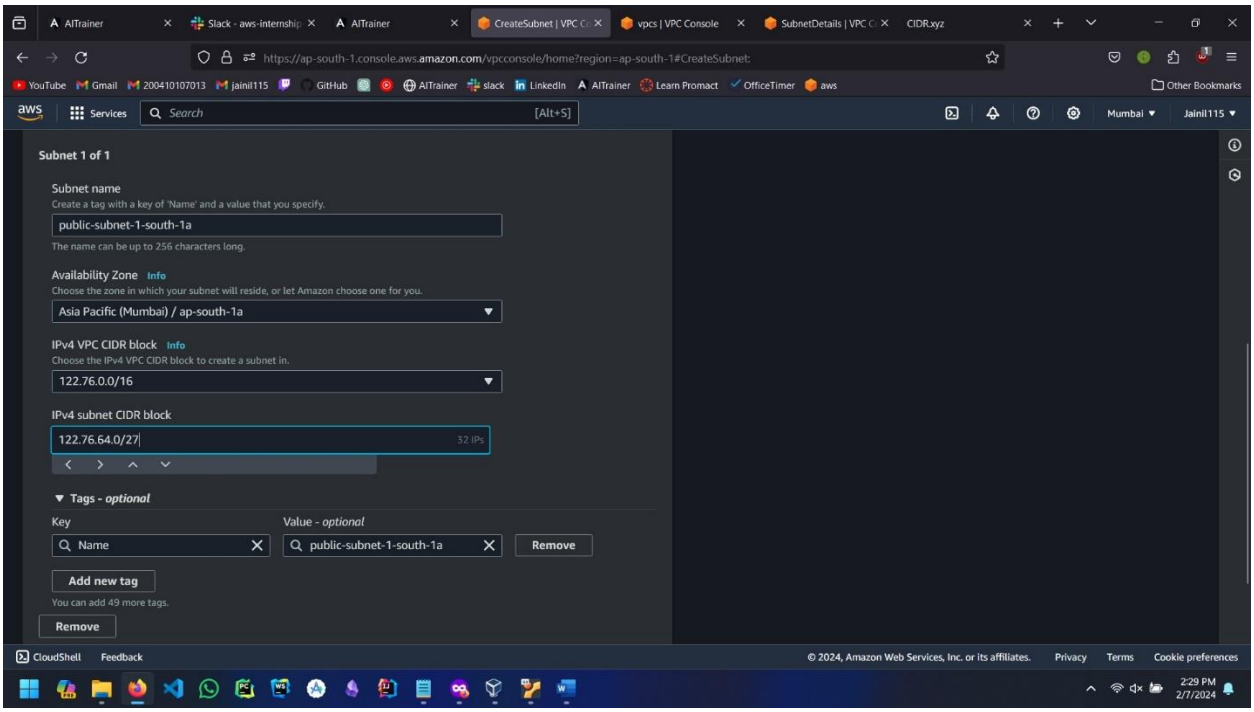
1. **Configure one subnet as a public subnet and the other as a private subnet.**
2. **Launch an EC2 instance in each subnet. The EC2 instance in the public subnet should be reachable from the Internet.**

We need to create 2 new subnets. Steps to create 2 new subnet:

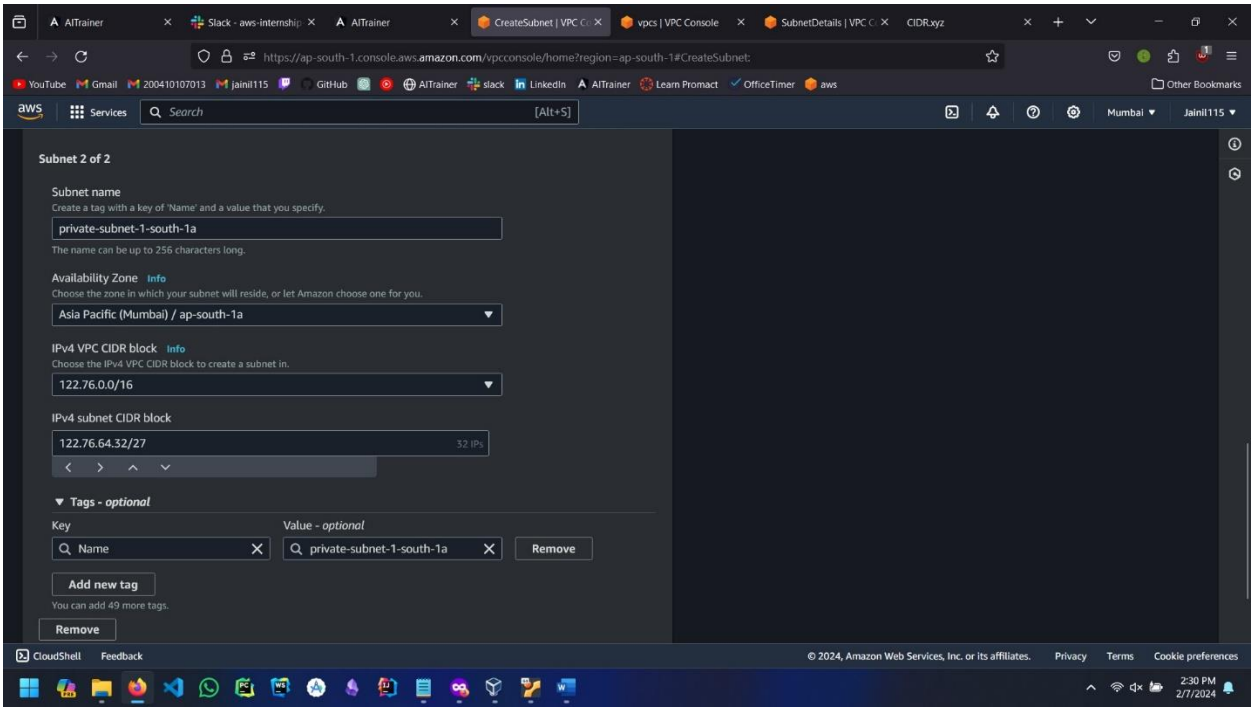
1. In VPC dashboard and click on Subnets. Then click on create subnet.



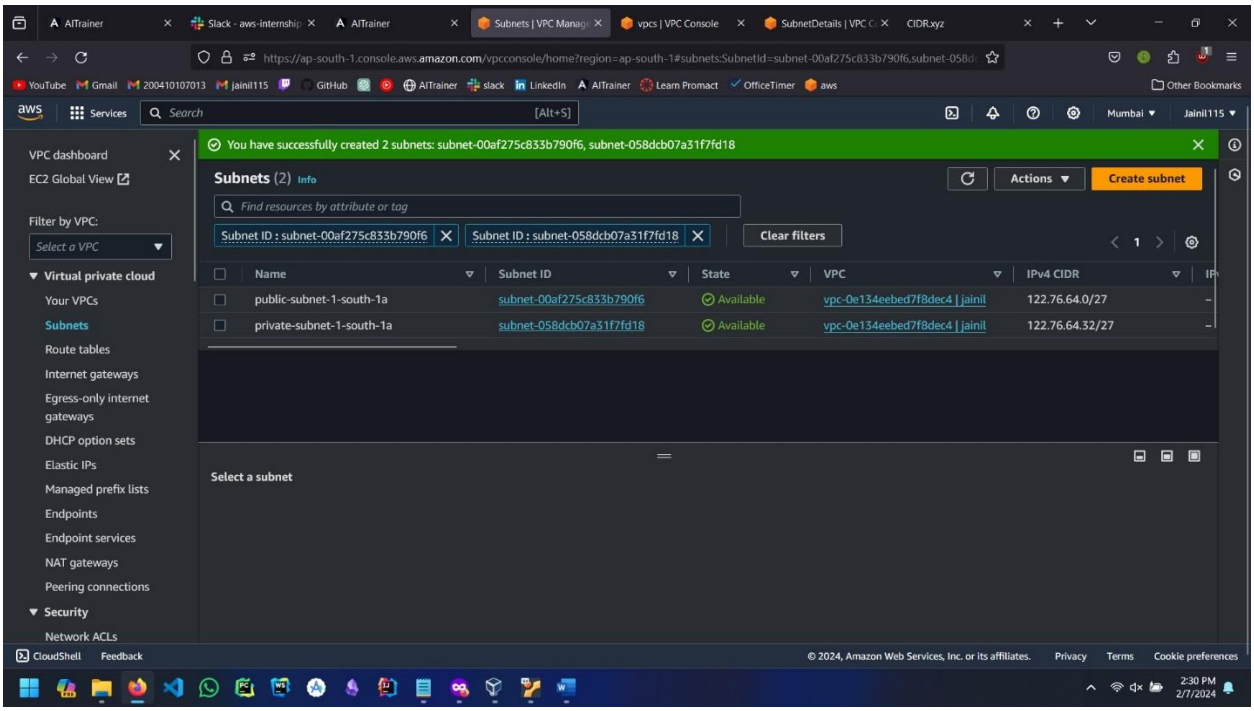
2. Under subnet setting fill out the following.:
    i. Subnet name: public-subnet-1-south-1a
    ii. Availability zone: ap-south-1a
    iii. IPv4 VPC CIDR block: 122.76.0.0/16
    iv. IPv4 subnet CIDR block: 122.76.64.0/27



3. And then click on add subnet. And enter the following details in under subnet setting:
    i. Subnet name: private-subnet-1-south-1a
    ii. Availability zone: ap-south-1a
    iii. IPv4 VPC CIDR block: 122.76.0.0/16
    iv. IPv4 subnet CIDR block: 122.76.64.32/27

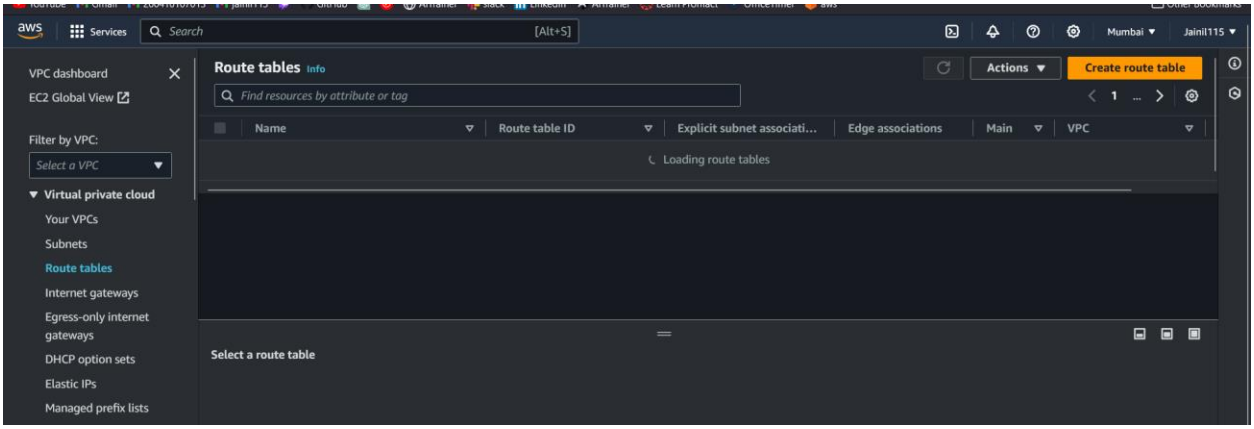


4. Then click on Create subnet. Now you will be able to see the subnets were successfully created.



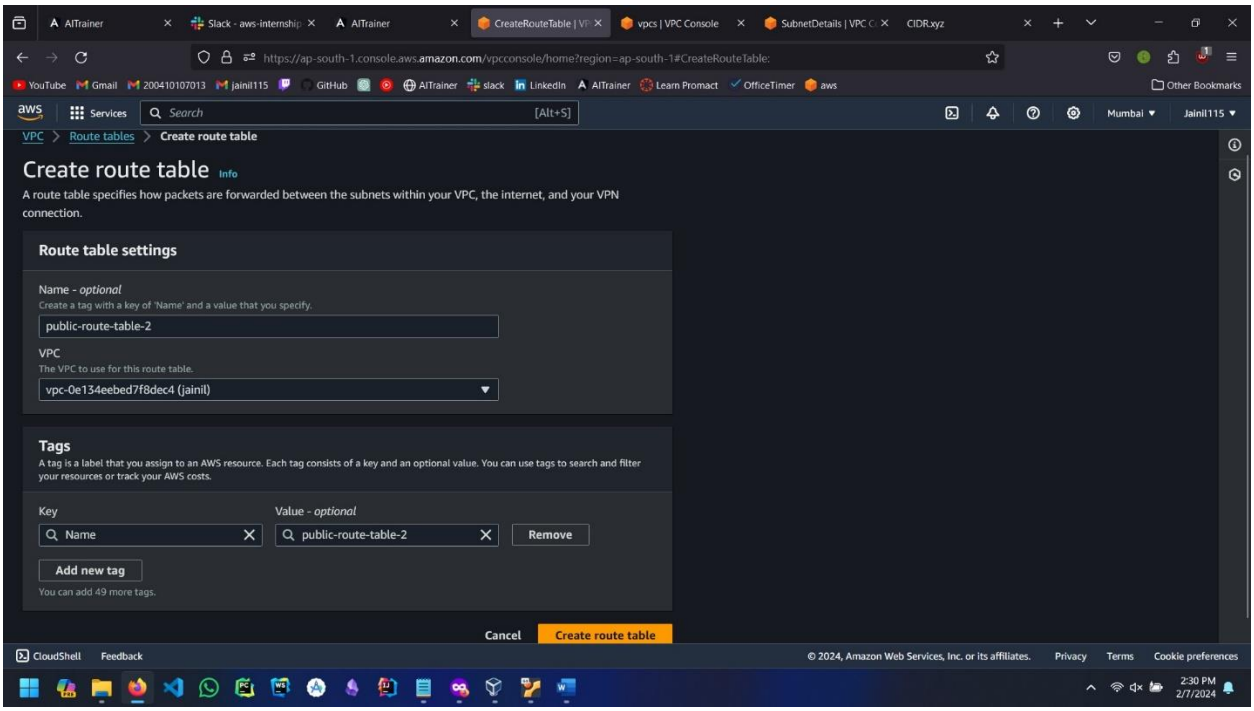
Now we need to create route tables. Here are the steps to create route table:

1. Now we need to create public route table by going to VPC dashboard and click on route table and click on create route table.

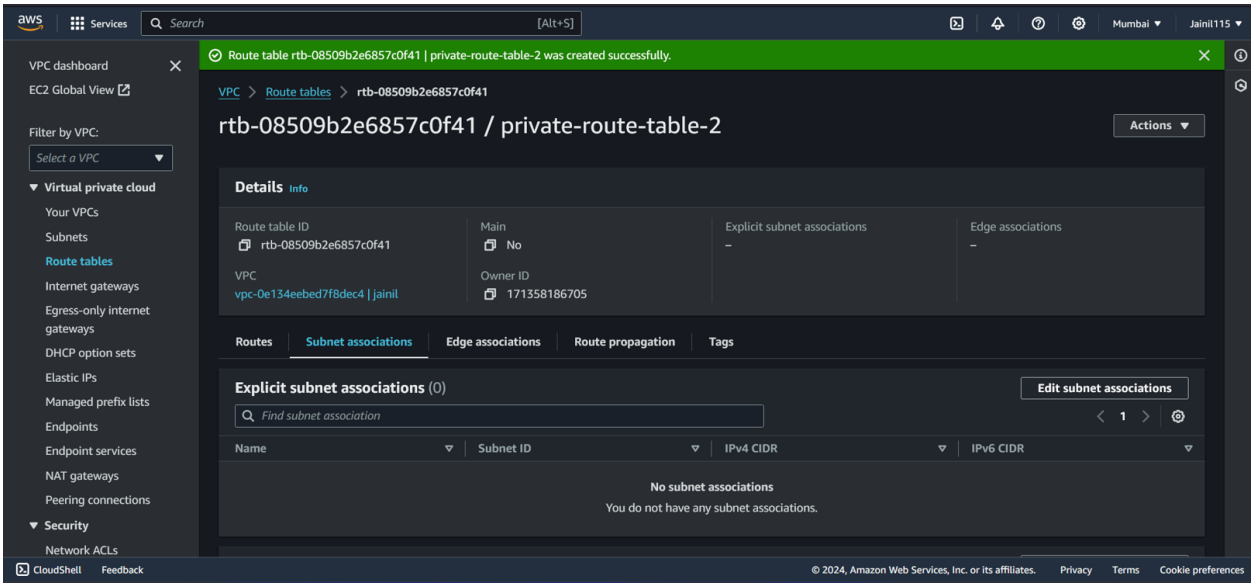


2. Fill out the route table setting:

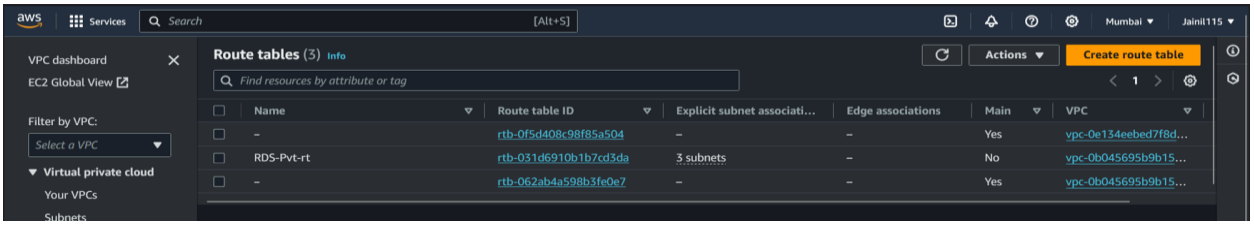
    i. Name: public-route-table-2
    ii. VPC: vpc-0e134eebed7f8dec4 (jainil)



3. Then click on Create route table. Now you will be able to see the public-route-table-2.

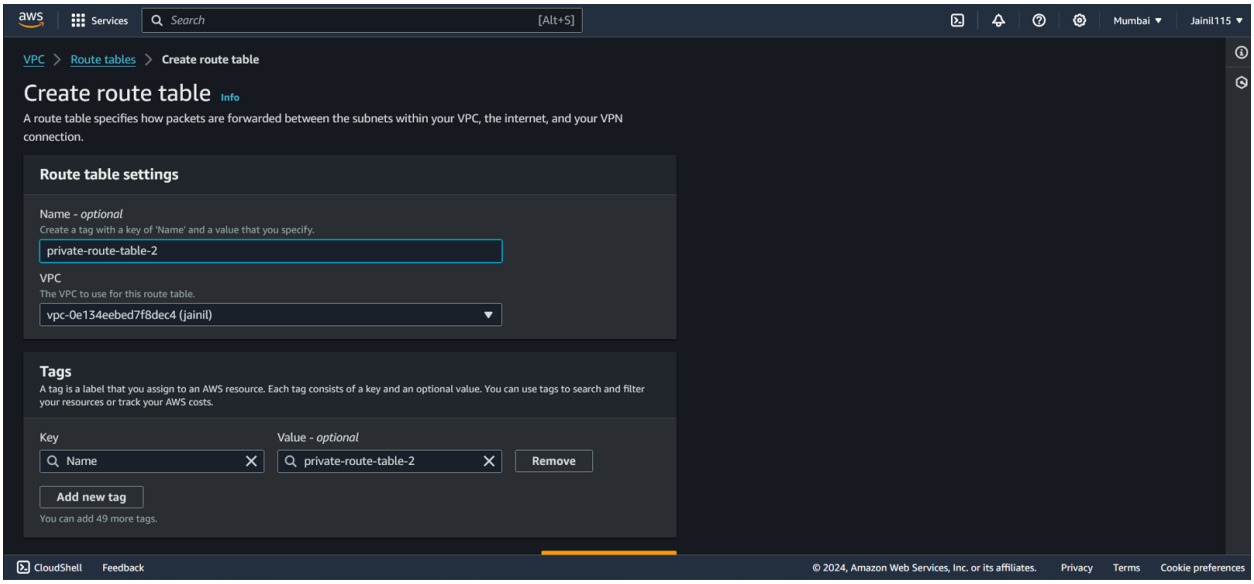


4. Now go to route tables again, and click on create route table.

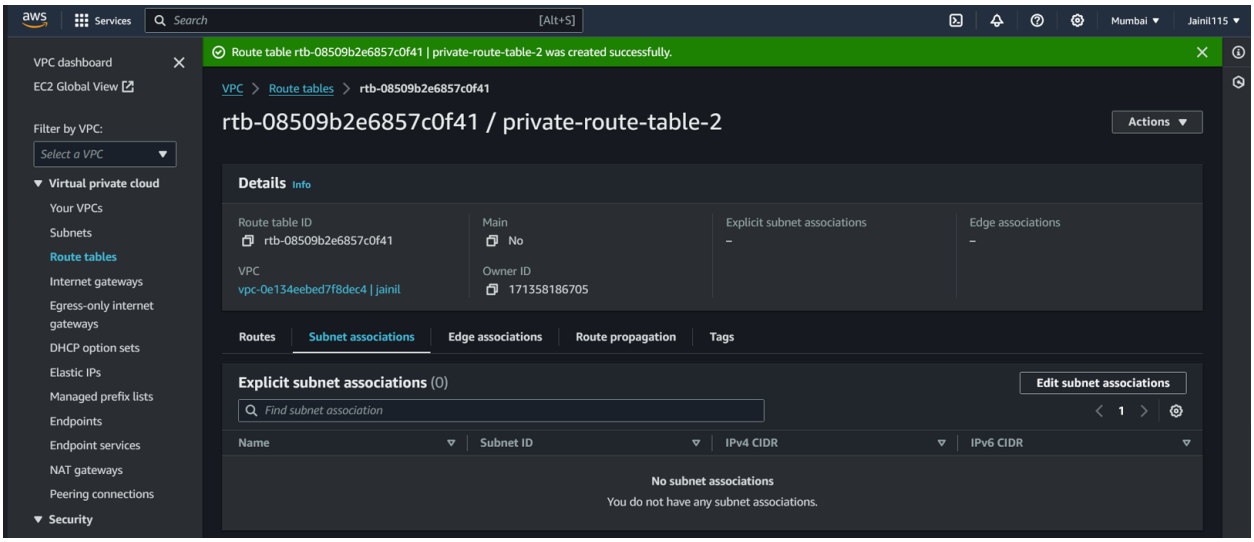


5. Fill out the route table setting:

    i. Name: private-route-table-2
    ii. VPC: vpc-0e134eebed7f8dec4 (jainil)

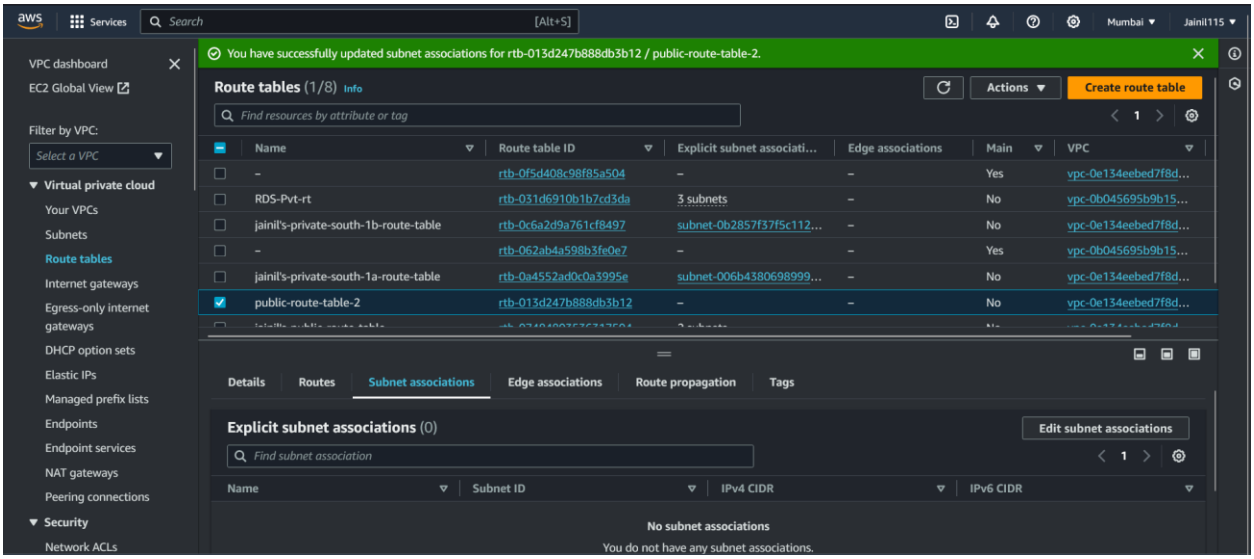


6. Then click on Create route table. Now you will be able to see the private-route-table-2.

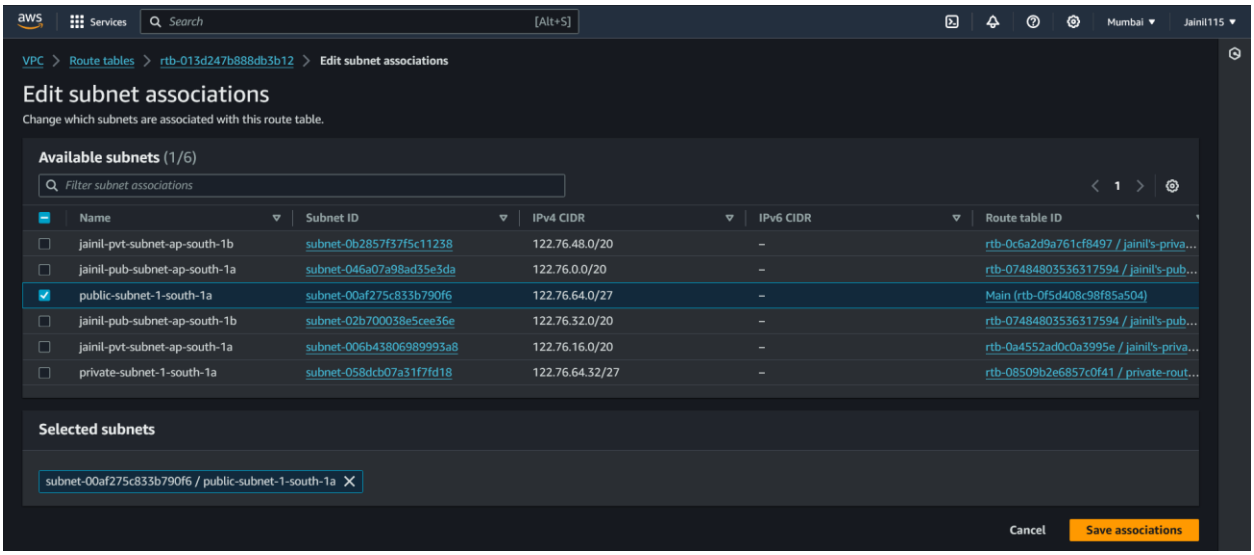


Now associate subnets with route table. Following are the steps to associate subnets to route table:

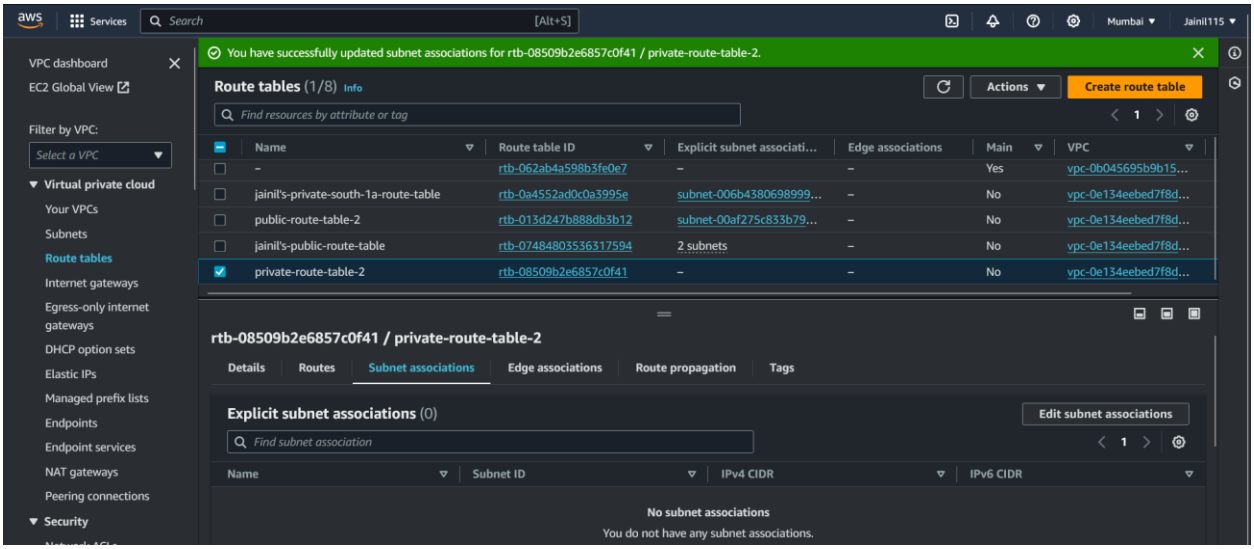
1. Go to Route tables and select public-route-table-2 and click on subnet associations.



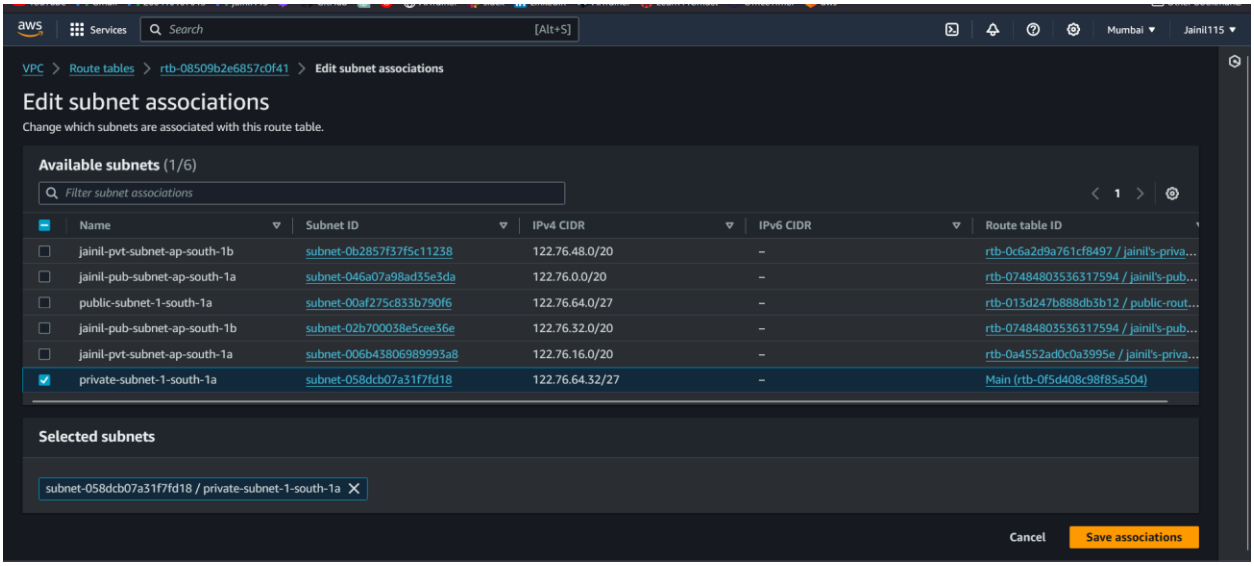
2. Now click on edit subnet associations. And then select public-subnet-1-south-1a and click on Save associations.



3. Now go to Route tables again and select private-route-table-2 and click on subnet associations.

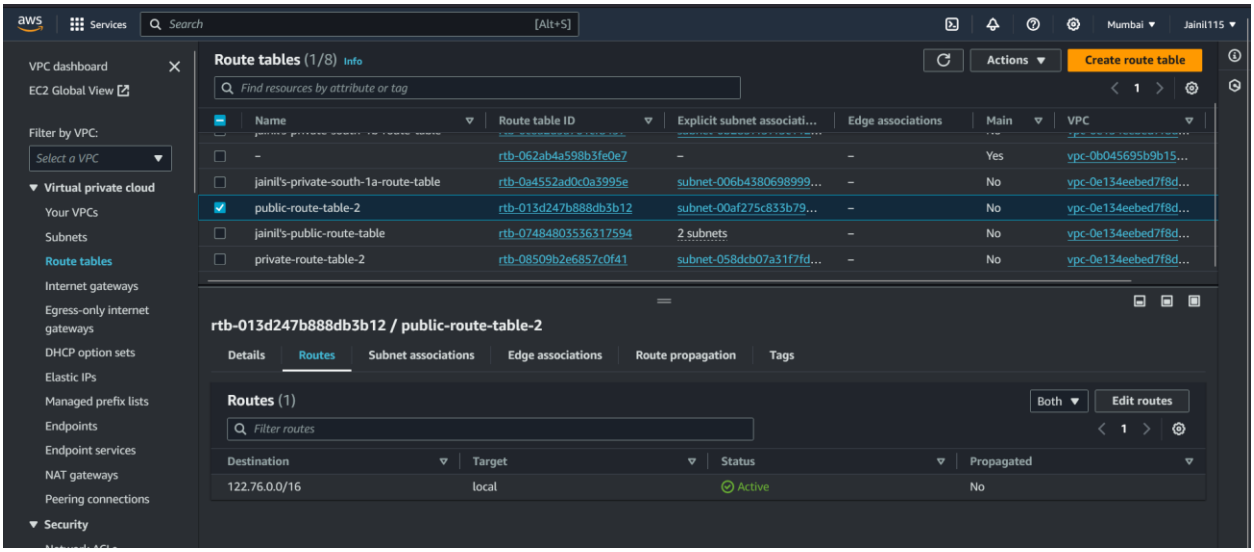


4. Then click on edit subnet associations. Then select private-subnet-1-south-1a and click on save associations.

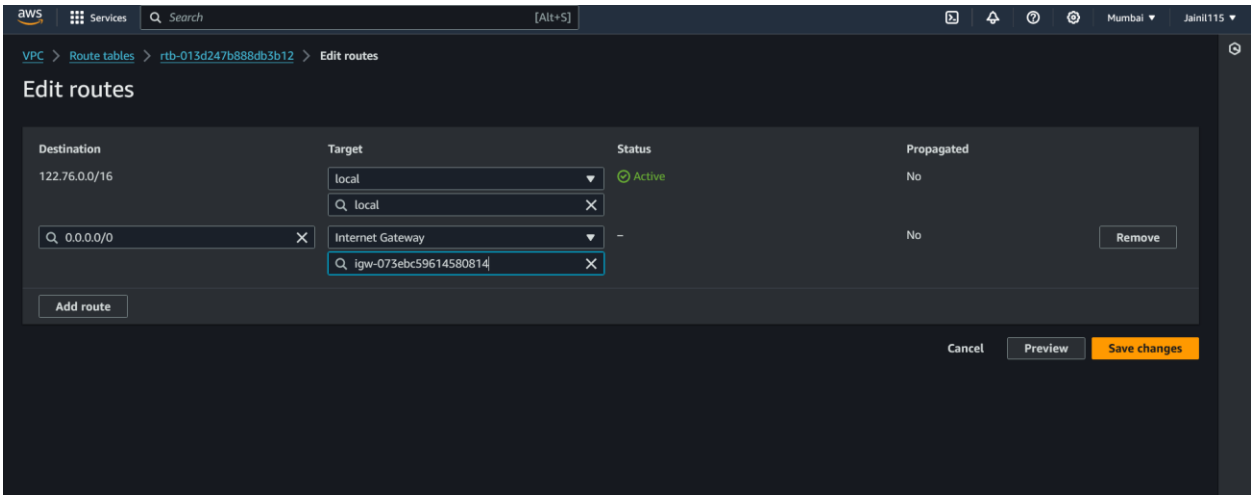


Now add Internet-Gateway to public subnet.

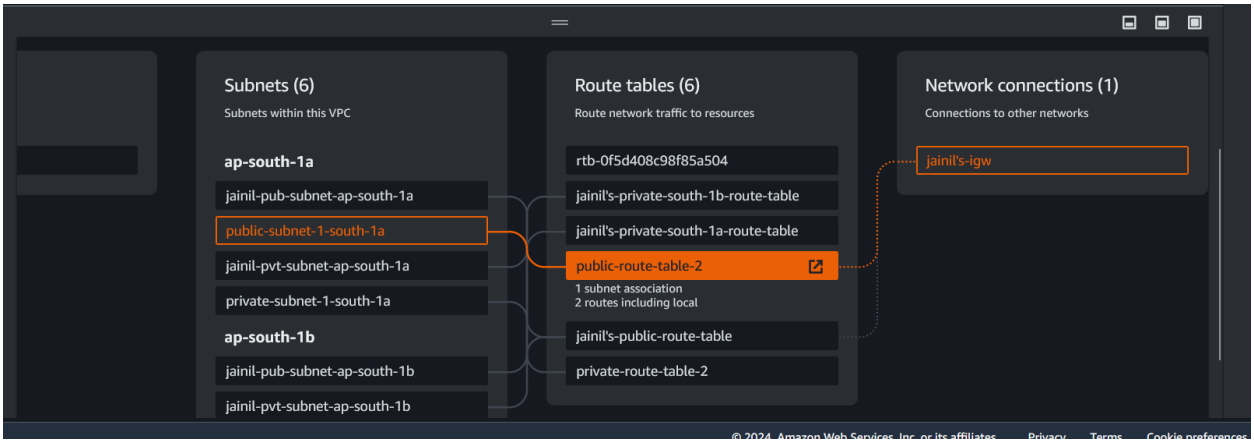
1. To add internet gateway to public subnet, go to Route tables and select public-route-table-2 and click on routes.

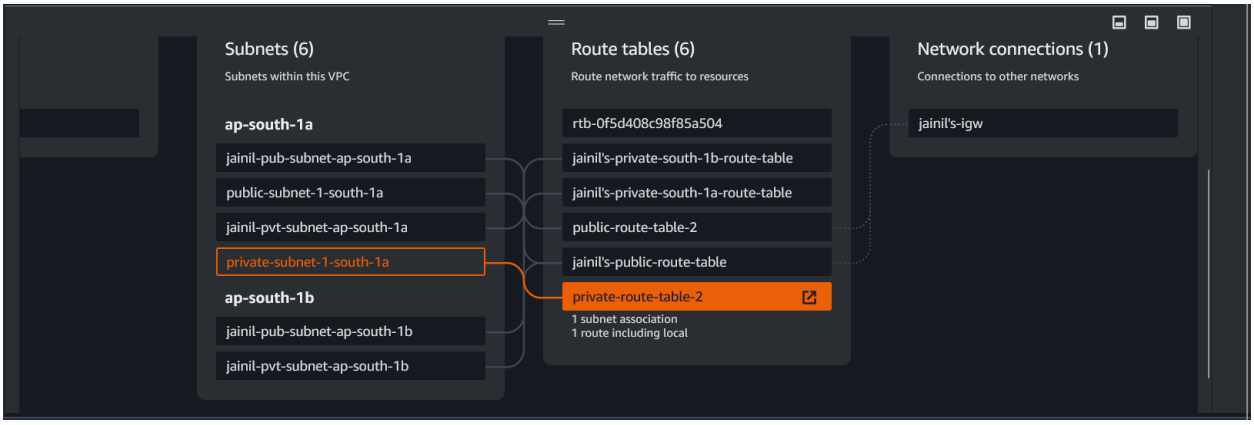


2. Now click on edit routes. Then click on add routes and then select the Internet Gateway and select the igw-073ebc5961480814 (jainil's igw) in target (created in previous task and is already attached to the current VPC) and set destination to 0.0.0.0/0 and click on save changes.



Now go to VPC. And check the Resource map to confirm that all the subnet's are associated with their appropriate route tables.

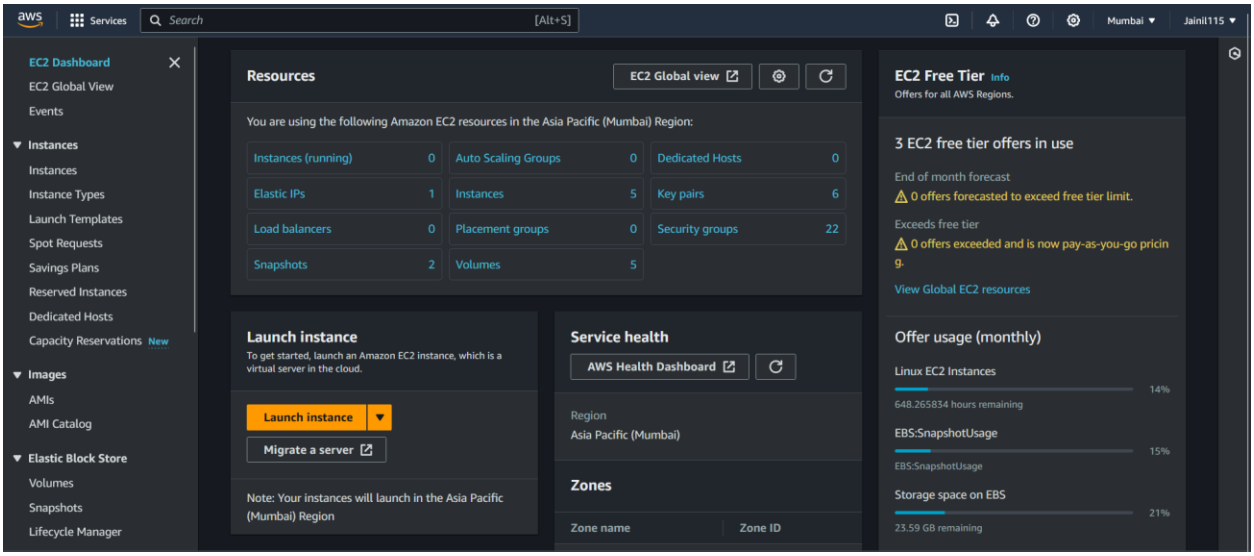




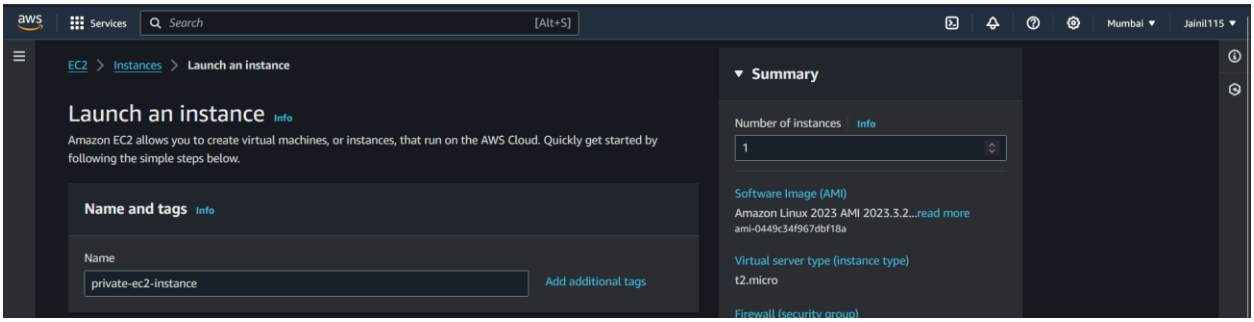
Steps to launch an EC2 instance in each subnet. The EC2 instance in the public subnet should be reachable from the Internet.:

Steps to create private ec2 instance:

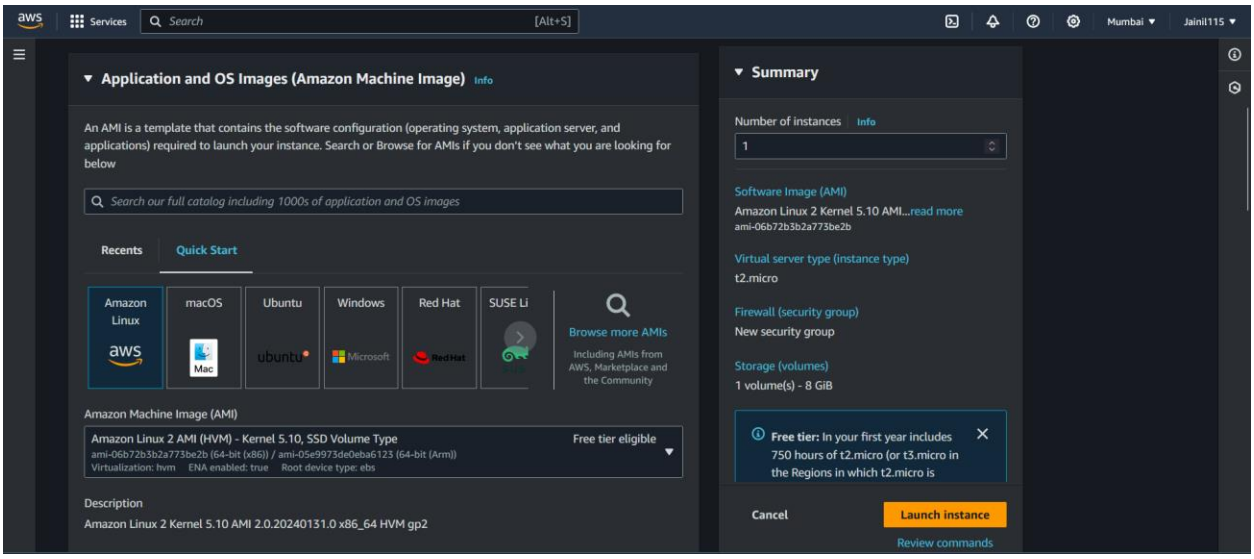
1. To create EC2 instance tab and click on launch EC2 instance.



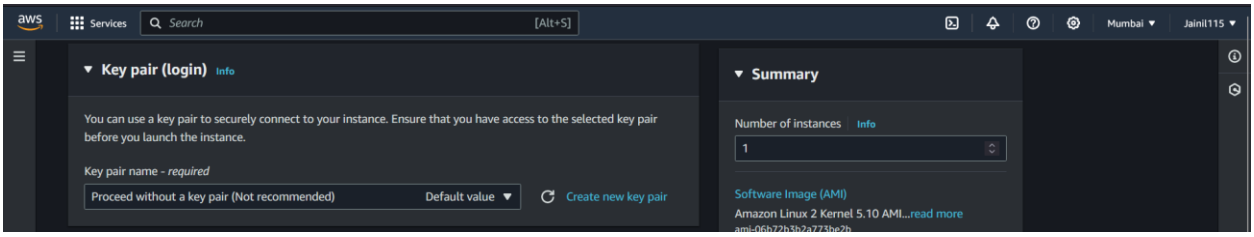
2. Enter the name of instance private-ec2-instance.



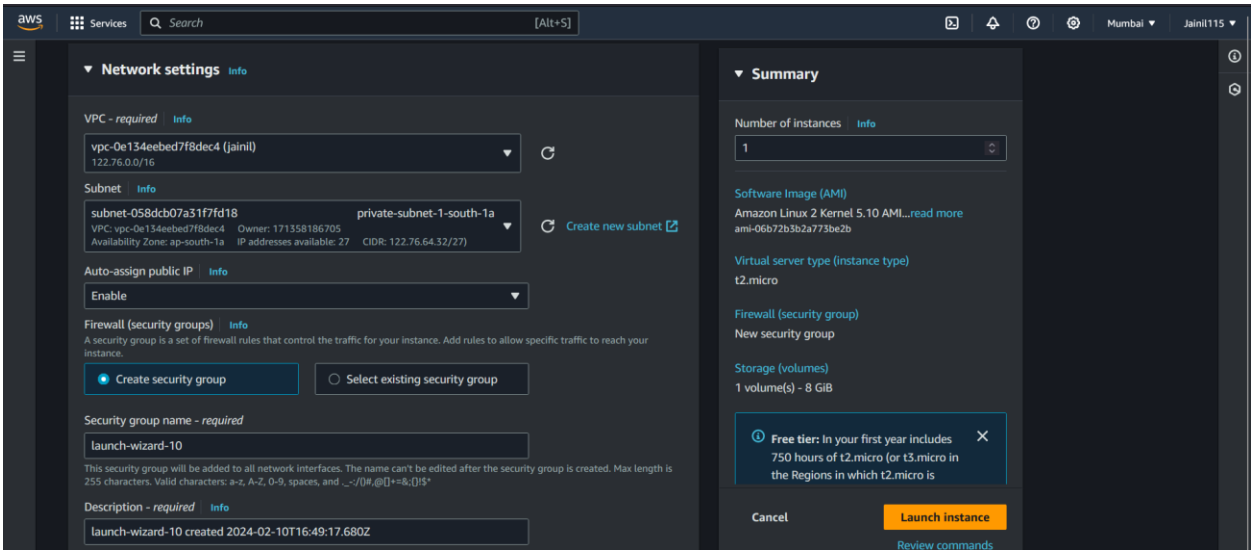
3. Select Amazon Linux 2 in AMI template.

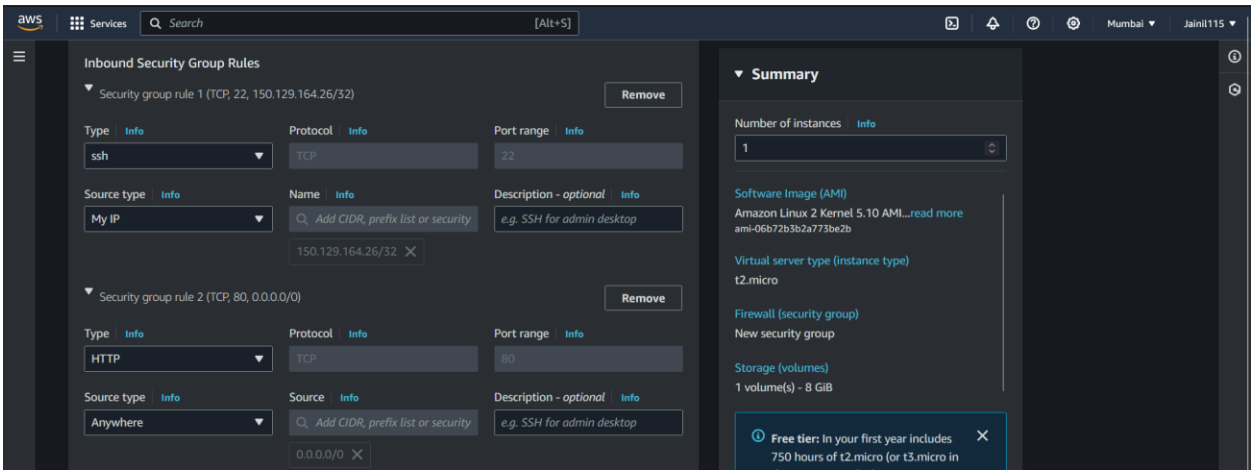


4. Select proceed without a key pair (Not recommended).

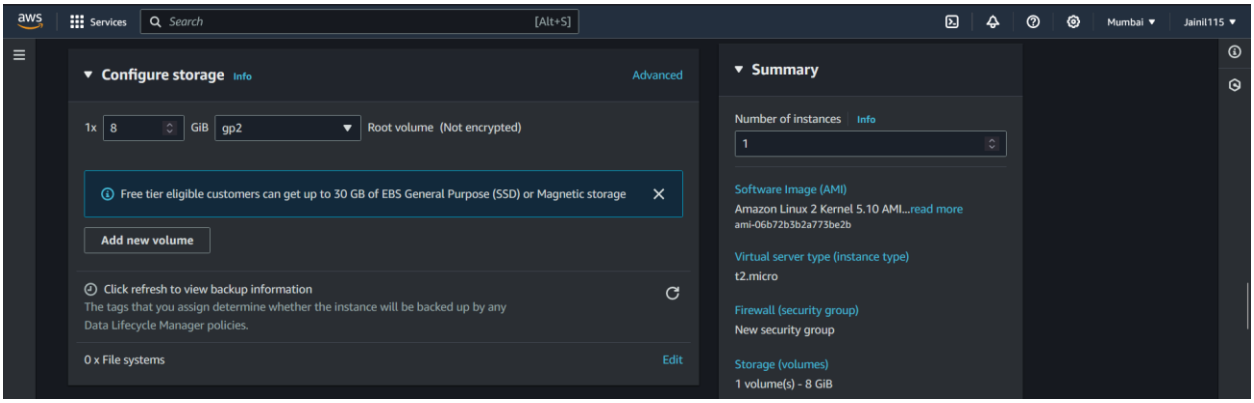


5. Now click on edit in Network setting. Then enter the following details:
    i. VPC: vpc-0e134eebed7f8dec4 (jainil)
    ii. Subnet: private-subnet-1-south-1a
    iii. Auto-Assign IP: Enable
    iv. Firewall (Security Groups): Create security group
    v. Security group name: launch-wizard-10 (Automatically created)
    vi. Description: launch-wizard-10 created 2024-02-10T16:49:17.680Z (Automatically created)
    vii. In inbound security group Rules: Under SSH select MY IP.
    viii. Add a http inbound rule and add source type anywhere (to test if it is accessible).





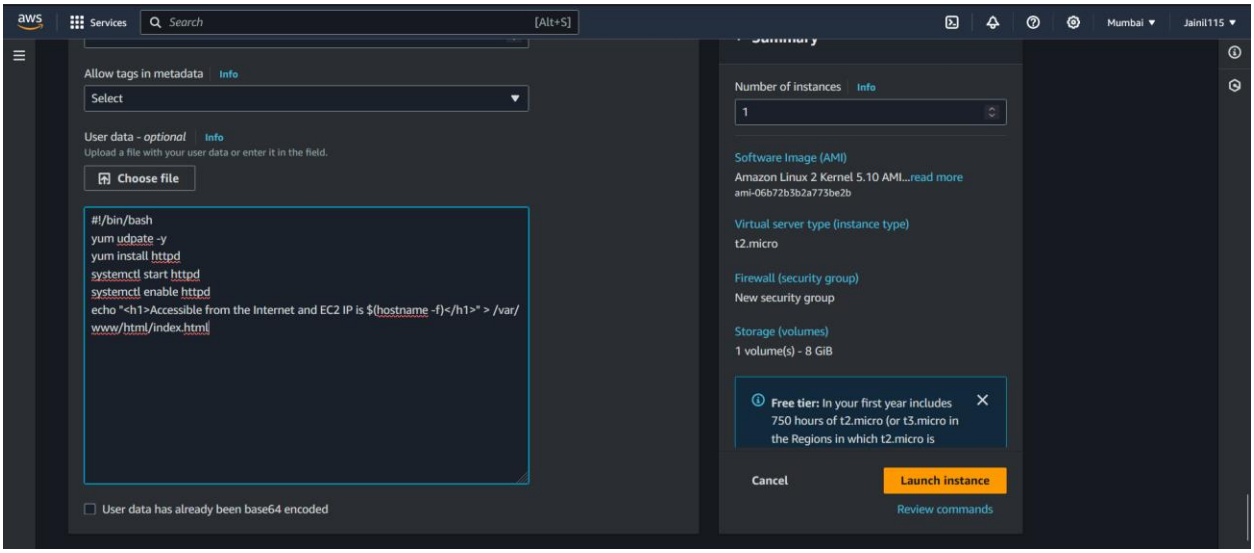
6. Then inside configure storage select 8GiB of gp2 root volume.



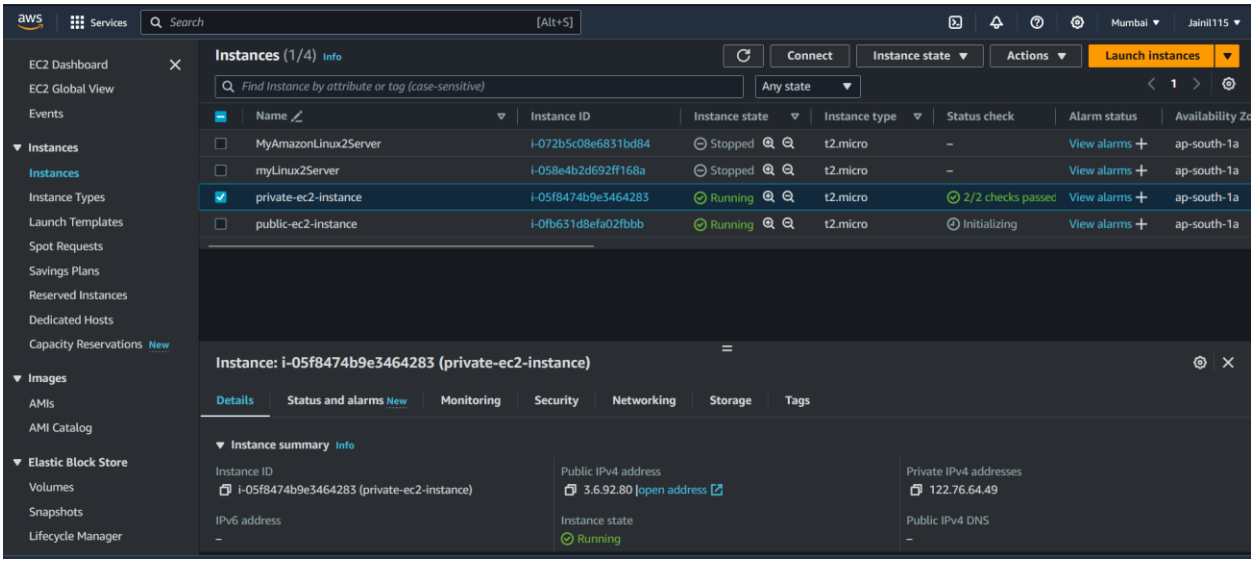
7. Under advanced details scroll down to bottom and enter the following User data. And Click on Launch Instance.

```
#!/bin/bash
yum udpate -y
```

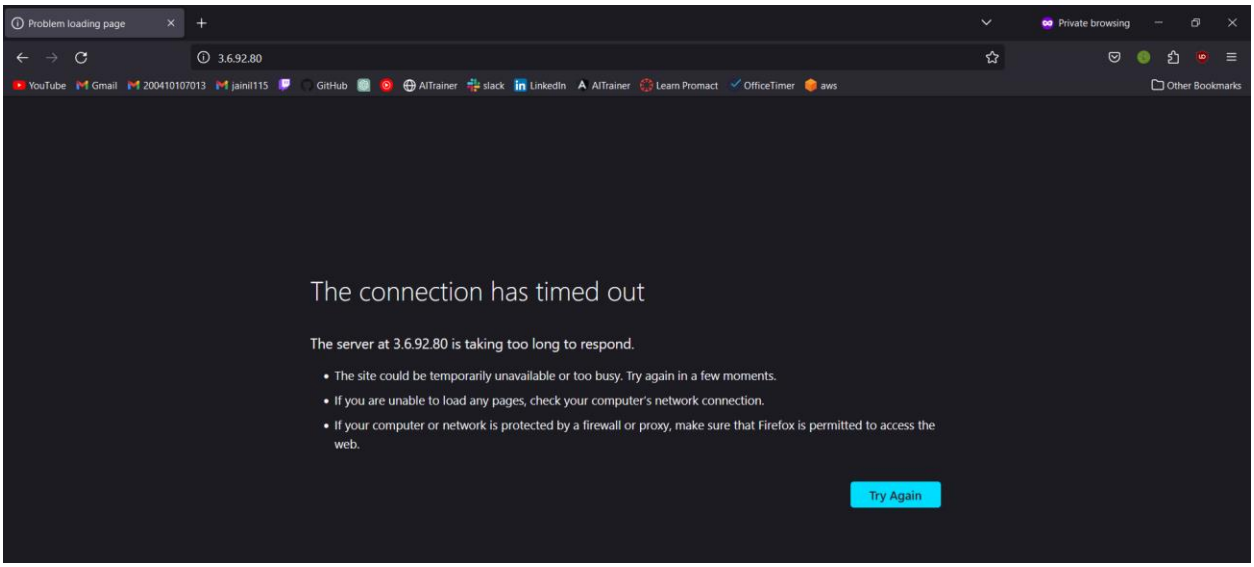
yum install httpd
systemctl start httpd
systemctl enable httpd
echo "<h1>Accessible from the Internet and EC2 IP is $(hostname -f)</h1>" > /var/www/html/index.html



8. Now in instances you can see the private-ec2-instance is created.

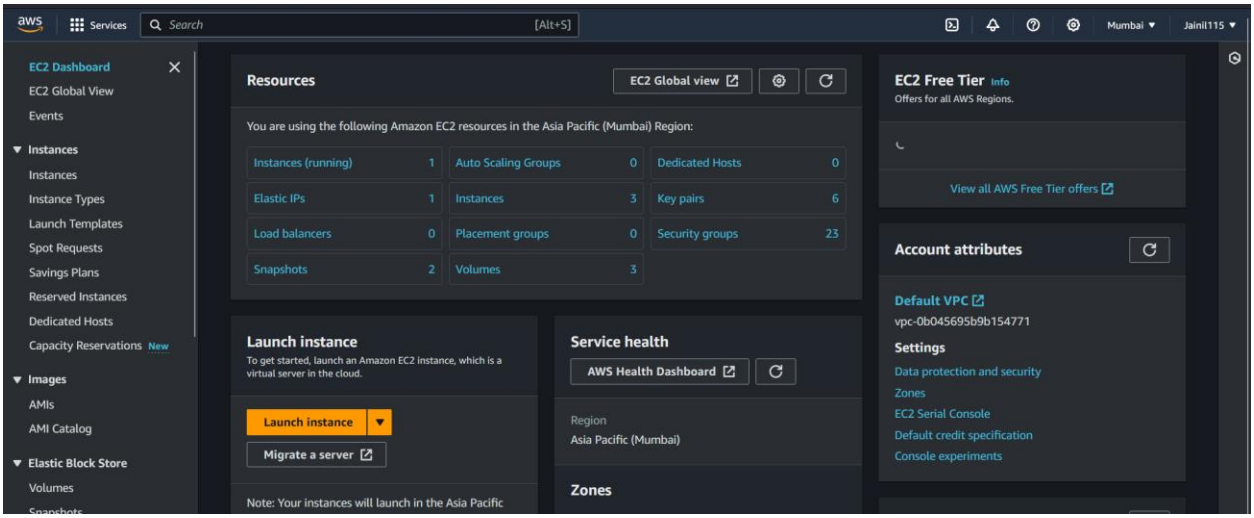


9. Now enter the public ip address in a web browser to check if it is accessible from the internet.

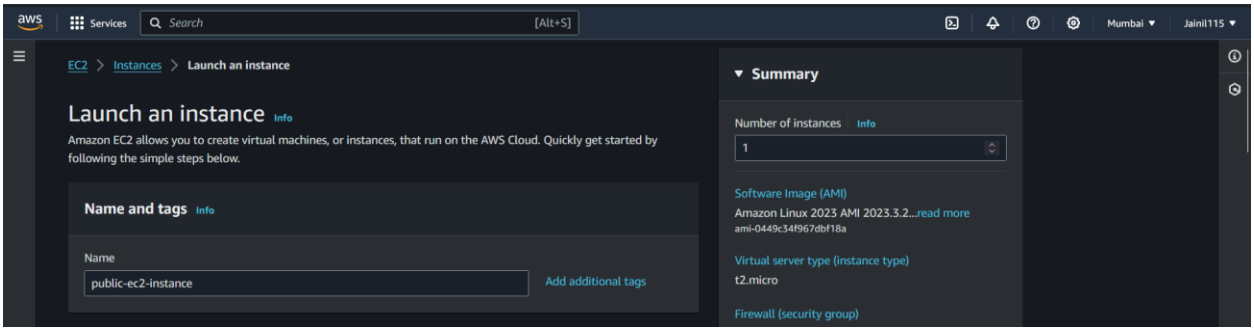


Steps to create public ec2 instance:

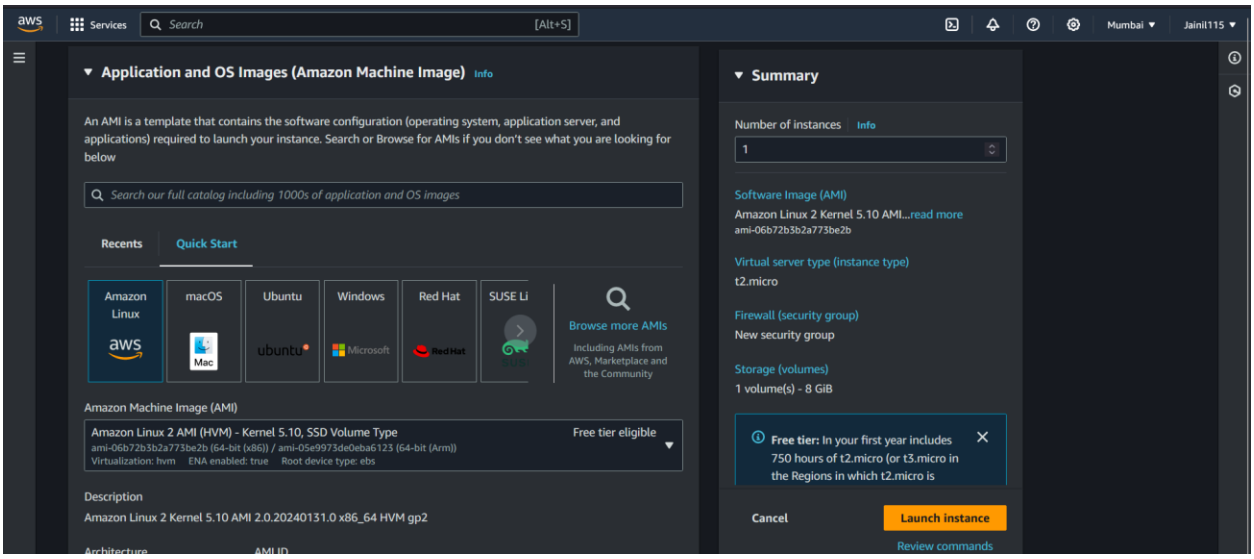
1. To create EC2 Dashboard and click on launch EC2 instance.



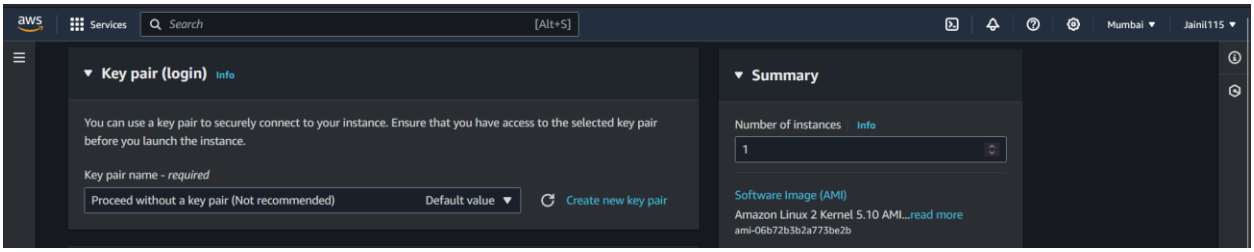
2. Enter the name of instance public-ec2-instance.



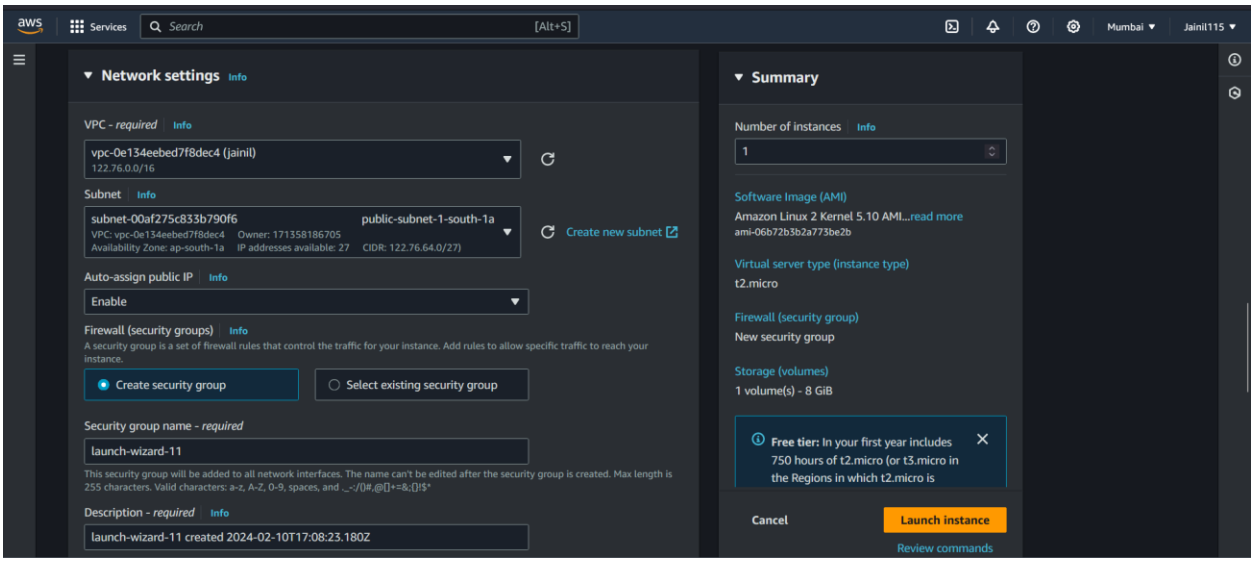
3. Select Amazon Linux 2 in AMI template.

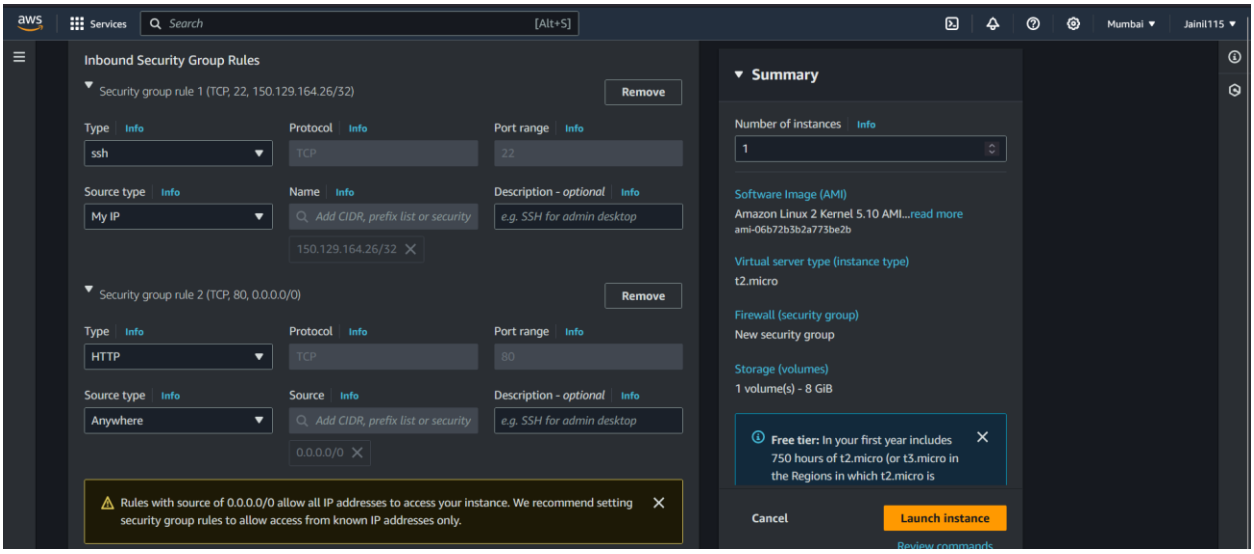


4. Select proceed without a key pair (Not recommended).

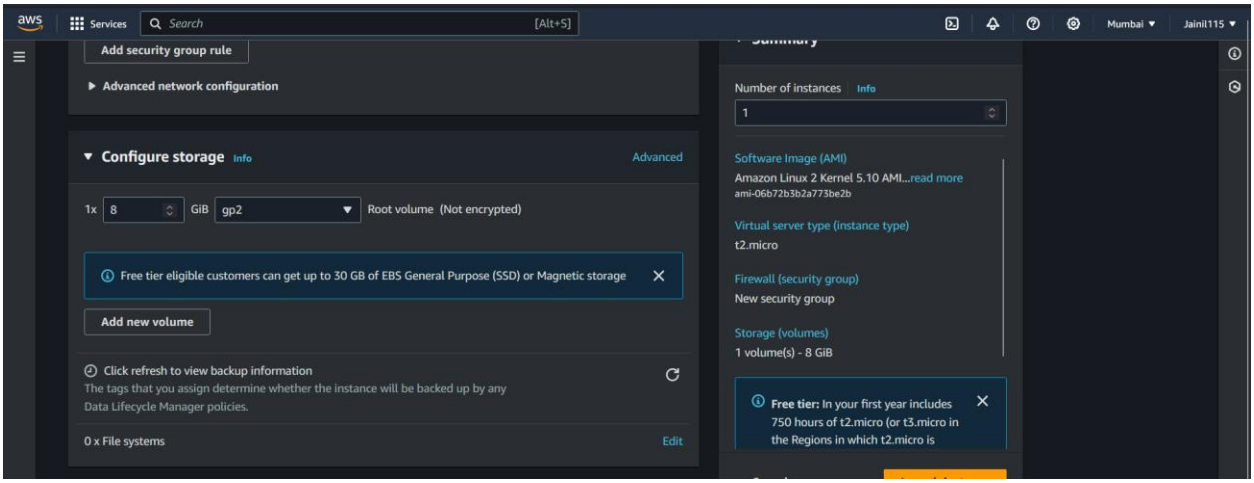


5. Now click on edit in Network setting. Then enter the following details:
   i. VPC: vpc-0e134eebed7f8dec4 (jainil)
   ii. Subnet: public-subnet-1-south-1a
   iii. Auto-Assign IP: Enable
   iv. Firewall (Security Groups): Create security group
   v. Security group name: launch-wizard-11 (Automatically created)
   vi. Description: launch-wizard-11 created 2024-02-10T17:08:23.180Z (Automatically created)
   vii. In inbound security group Rules: Under SSH select MY IP.
   viii. Add a http inbound rule and add source type anywhere (to test if it is accessible).

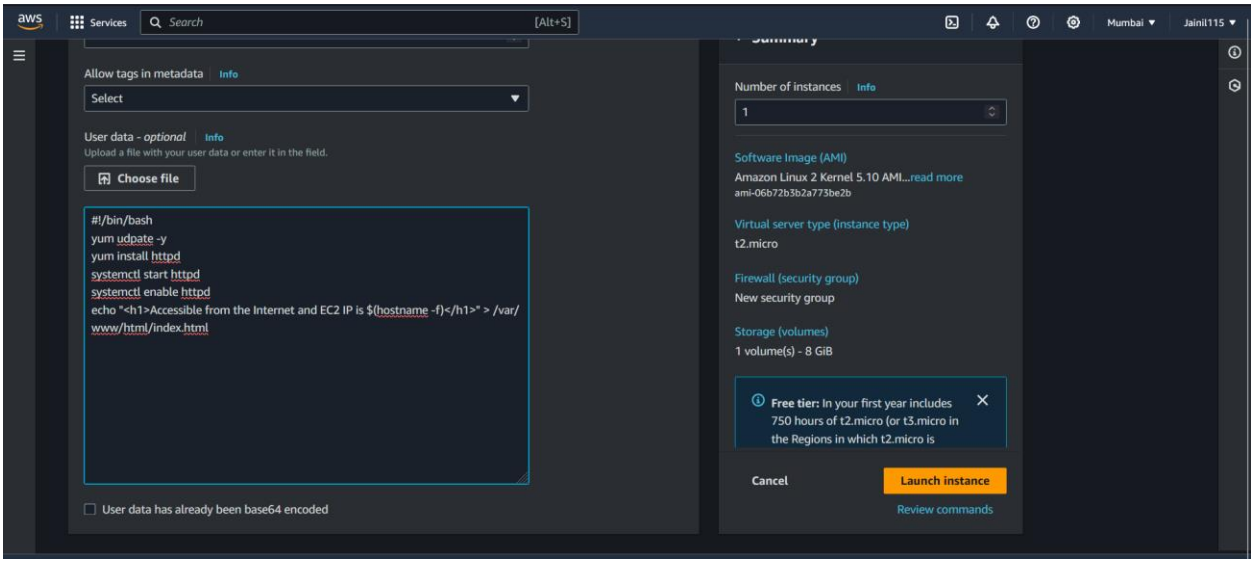




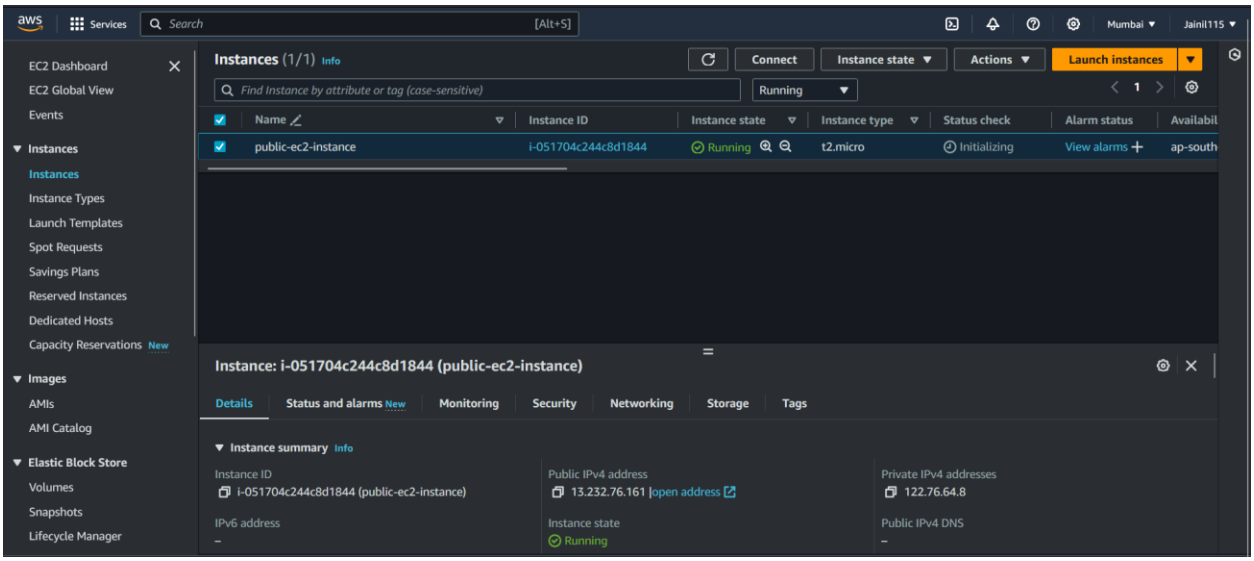
6. Then inside configure storage select 8GiB of gp2 root volume.



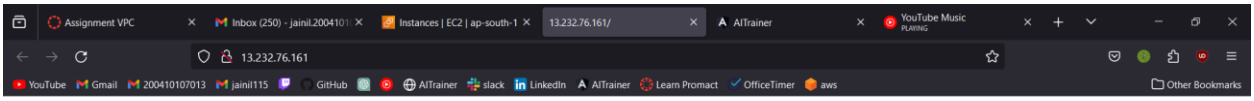
7. Under advanced details scroll down to bottom and enter the following User data. And Click on Launch Instance.
   #!/bin/bash
   yum udpate -y
   yum install -y httpd
   systemctl start httpd
   systemctl enable httpd
   echo "<h1>Accessible from the Internet and EC2 IP is $(hostname -f)</h1>" > /var/www/html/index.html



8. Now in instances you can see the public-ec2-instance is created.



9. Now enter the public ip address 13.232.76.161 (I have deleted the instance) in a web browser to check if it is accessible from the internet.



Accessible from the Internet and EC2 IP is ip-122-76-64-8.ap-south-1.compute.internal