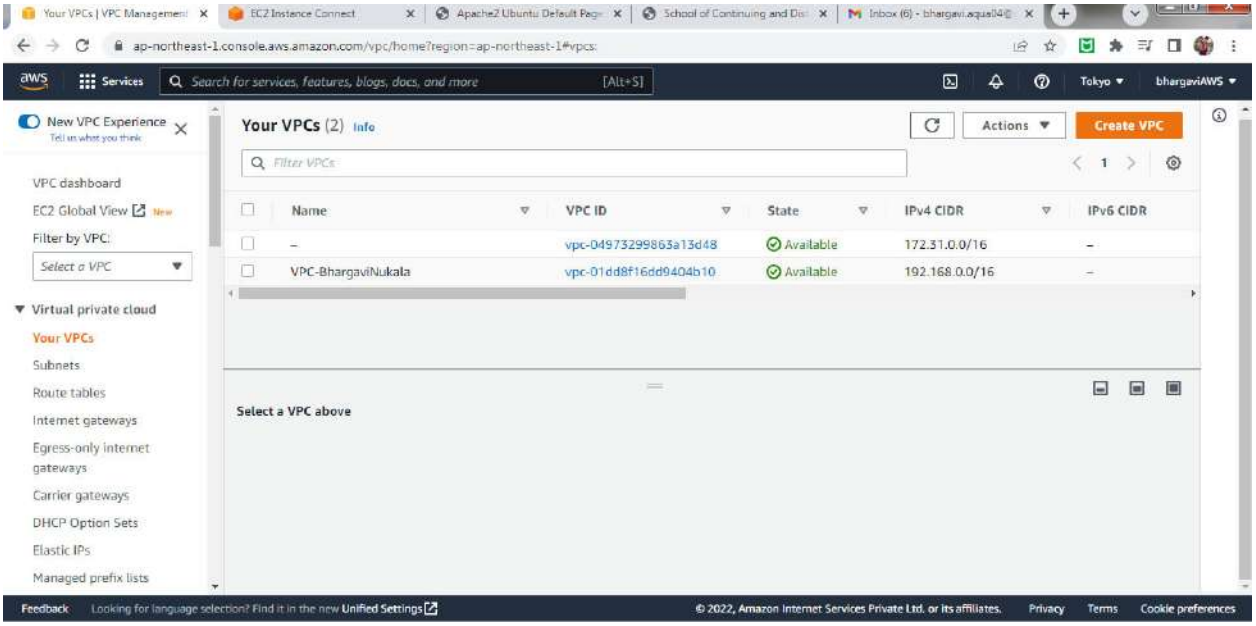
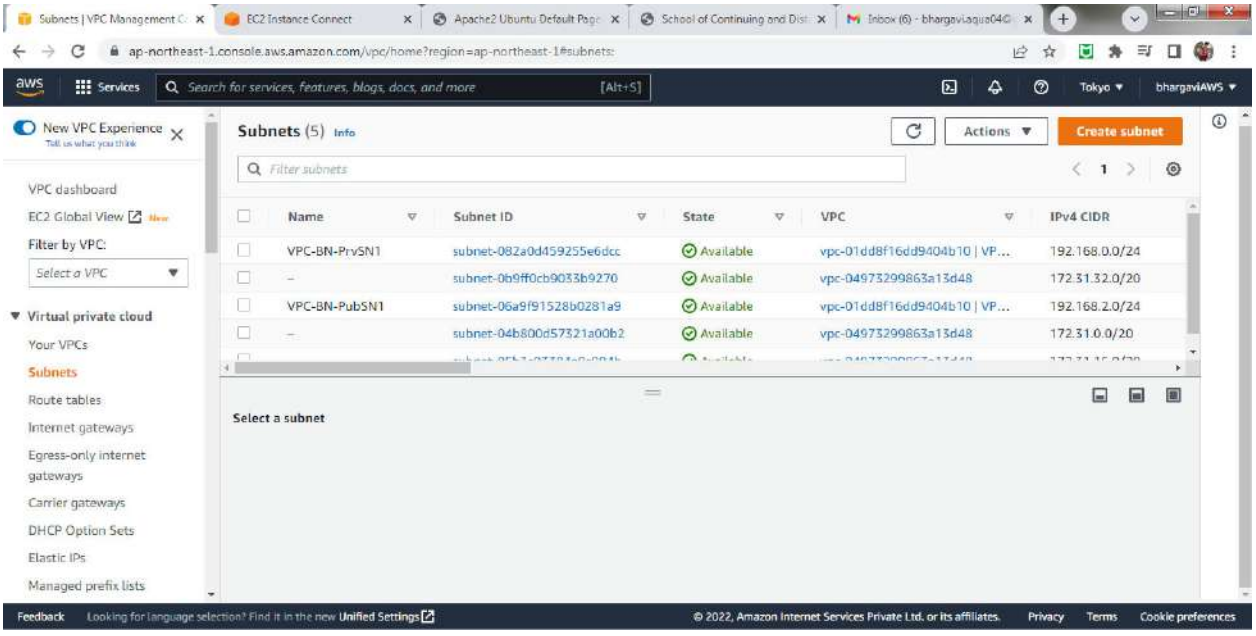
VPC:

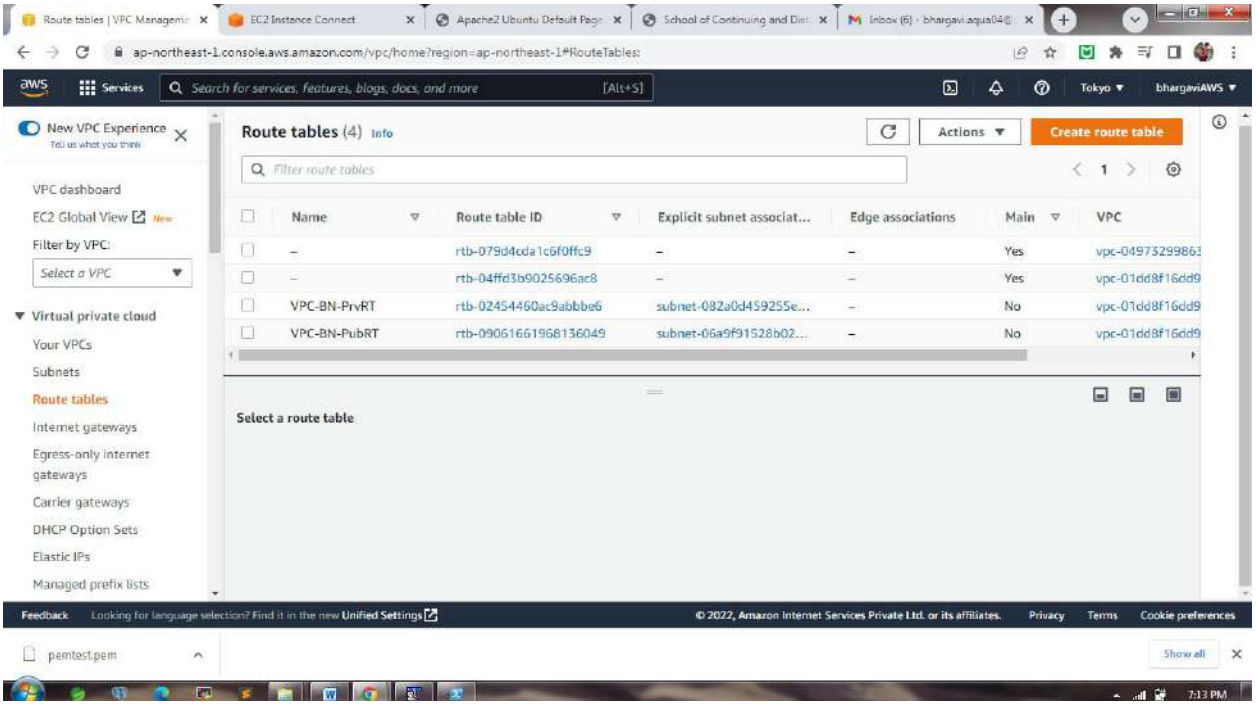
1. Create a new VPC and provided range of VPC as 192.168.0.0/16



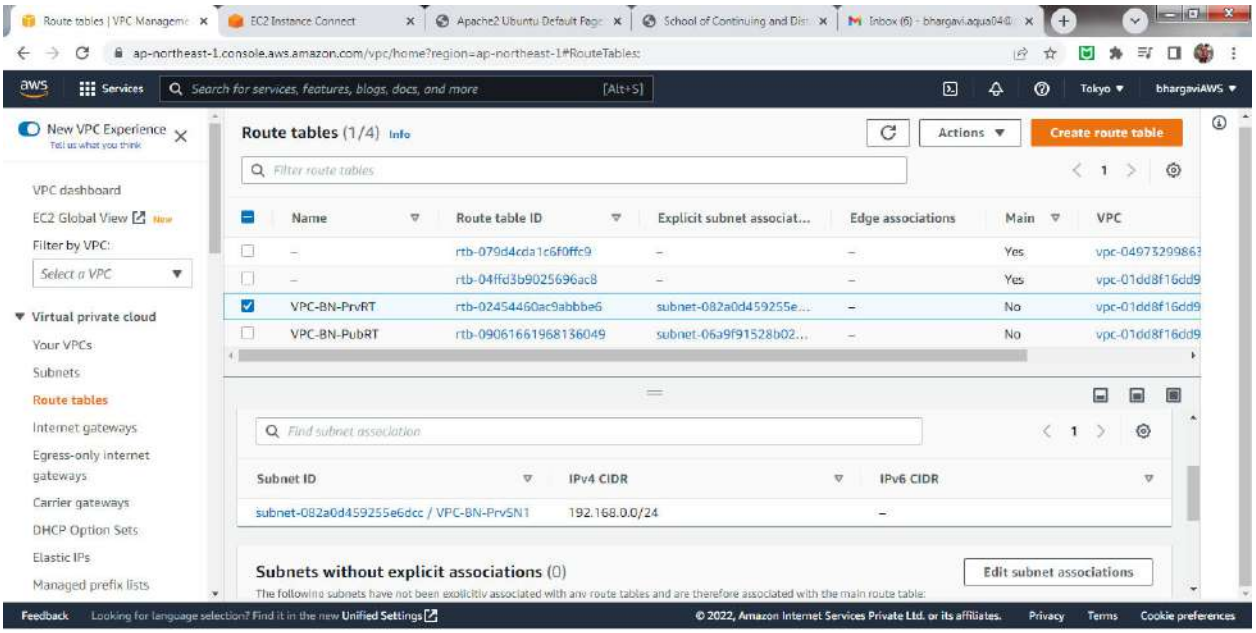
2. Create two subnets, one as Public subnet and one as Private Subnet in our VPC

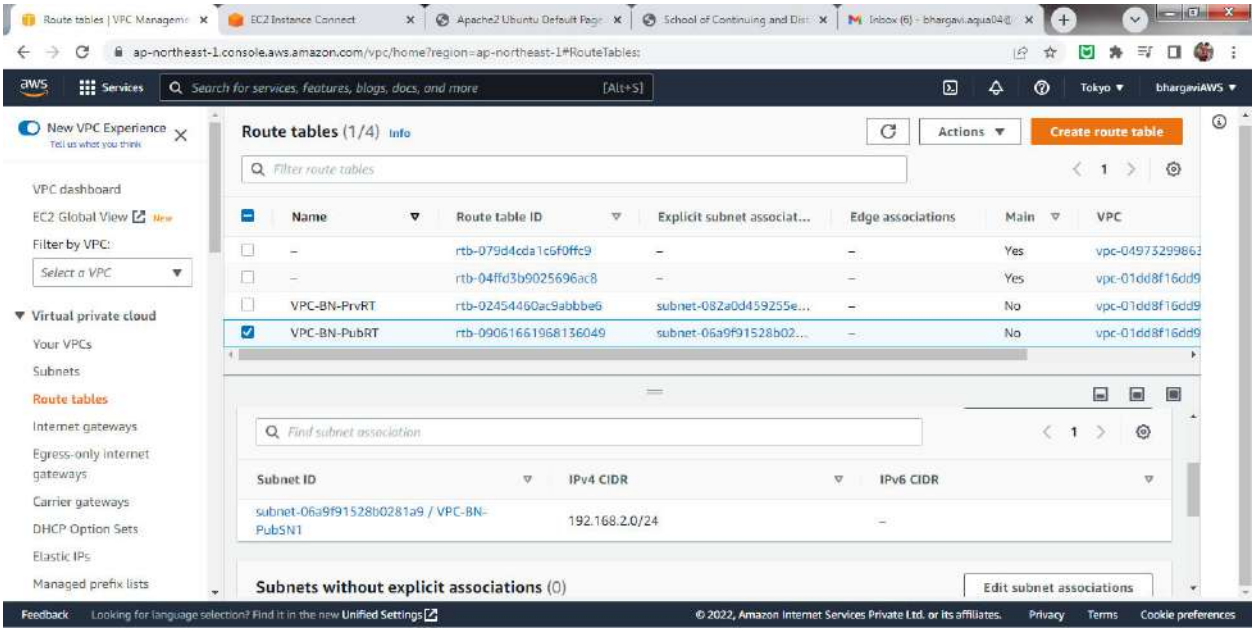


3. Create two Route Tables, one for Public Subnet and One for Private Subnet

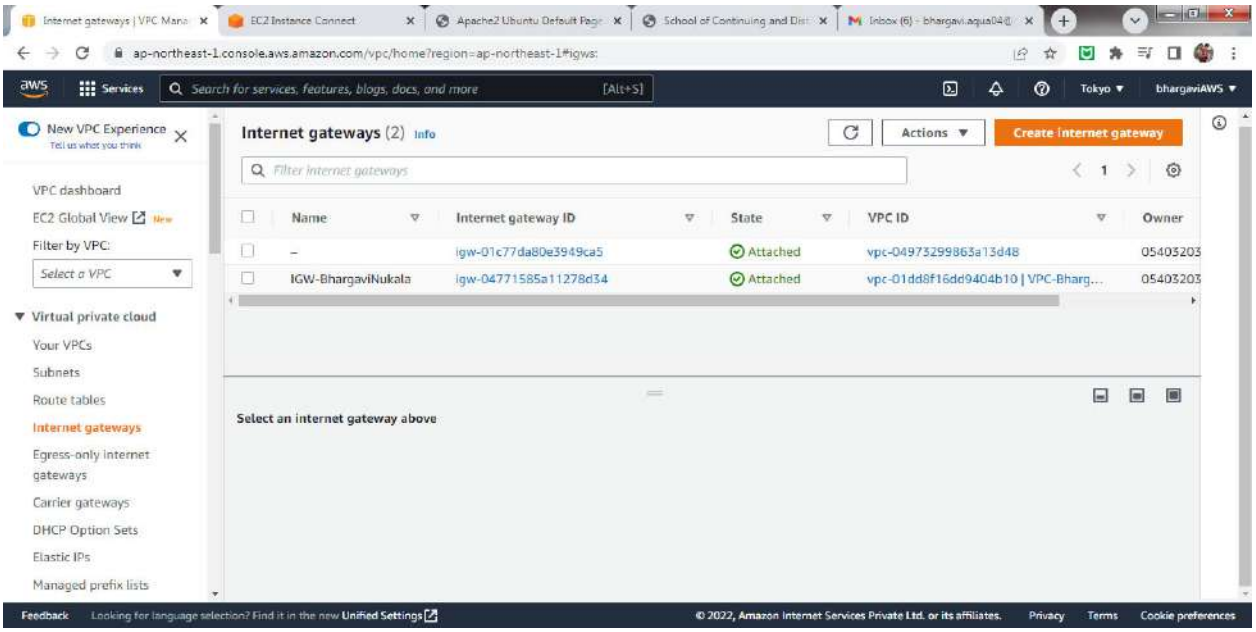


4. Associate Private Subnet to Private Route Table and Public subnet to Public Route Table

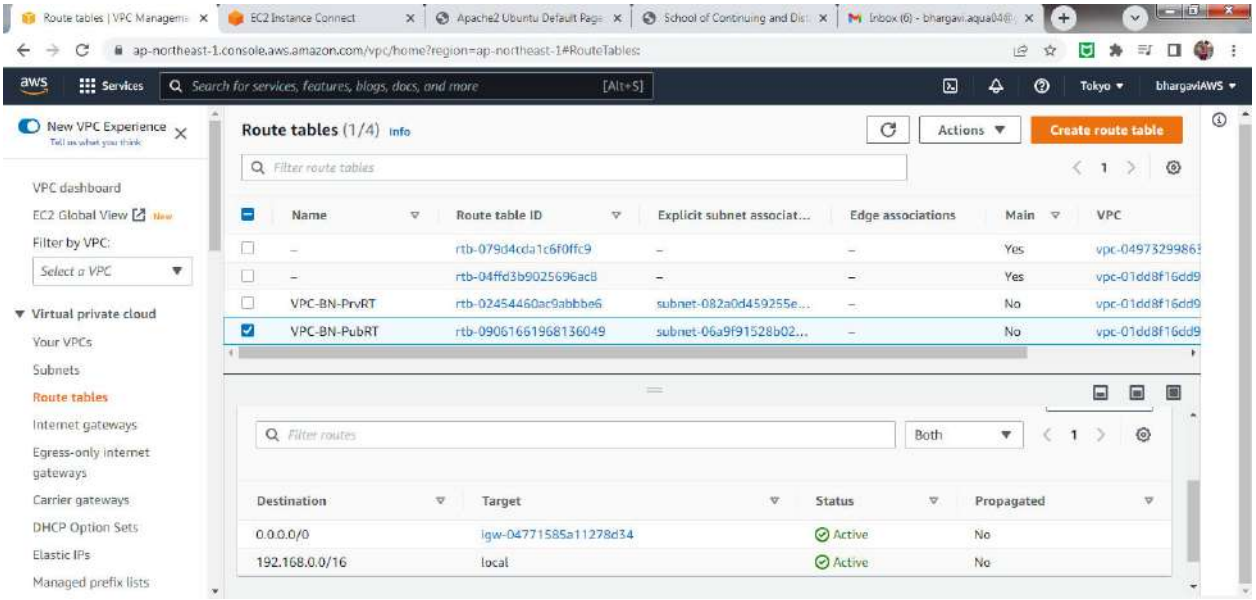




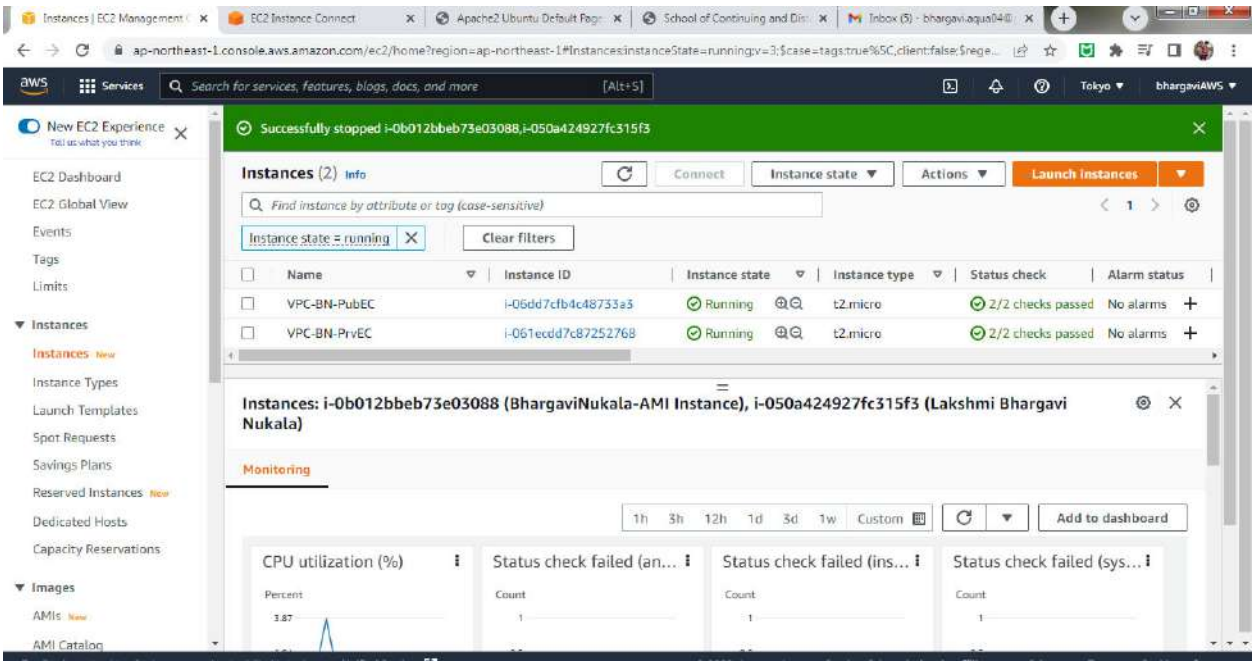
5. Create an Internet Gateway



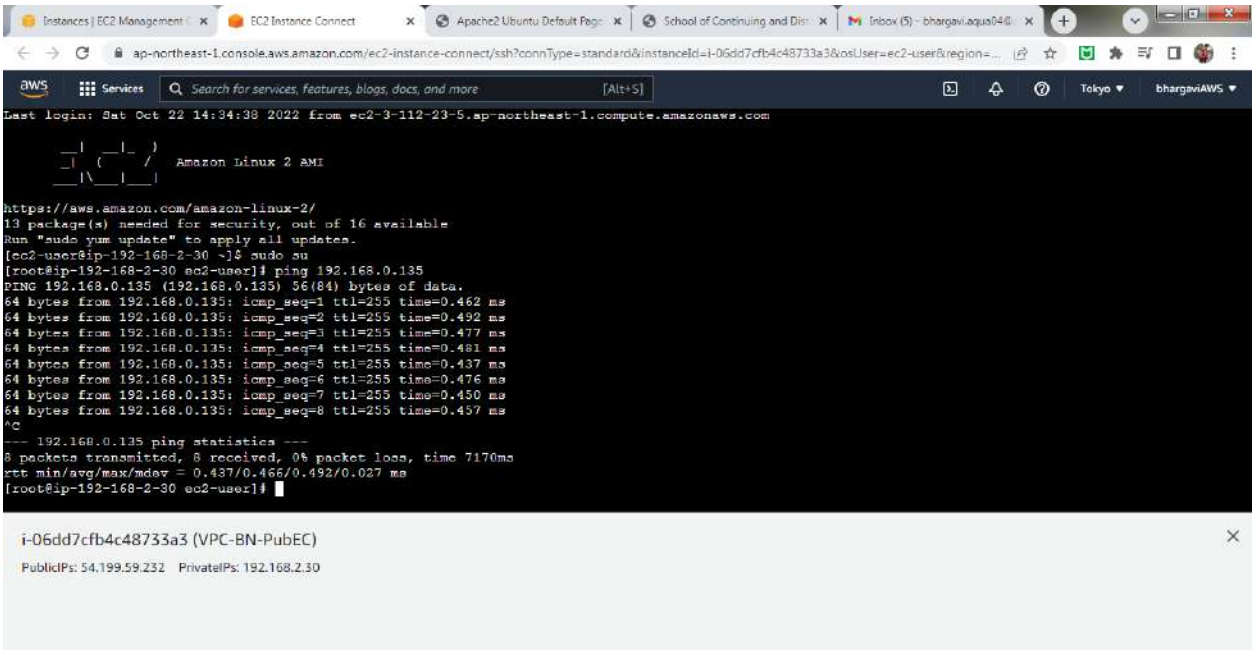
6. Connect Public Route Table to Internet Gateway



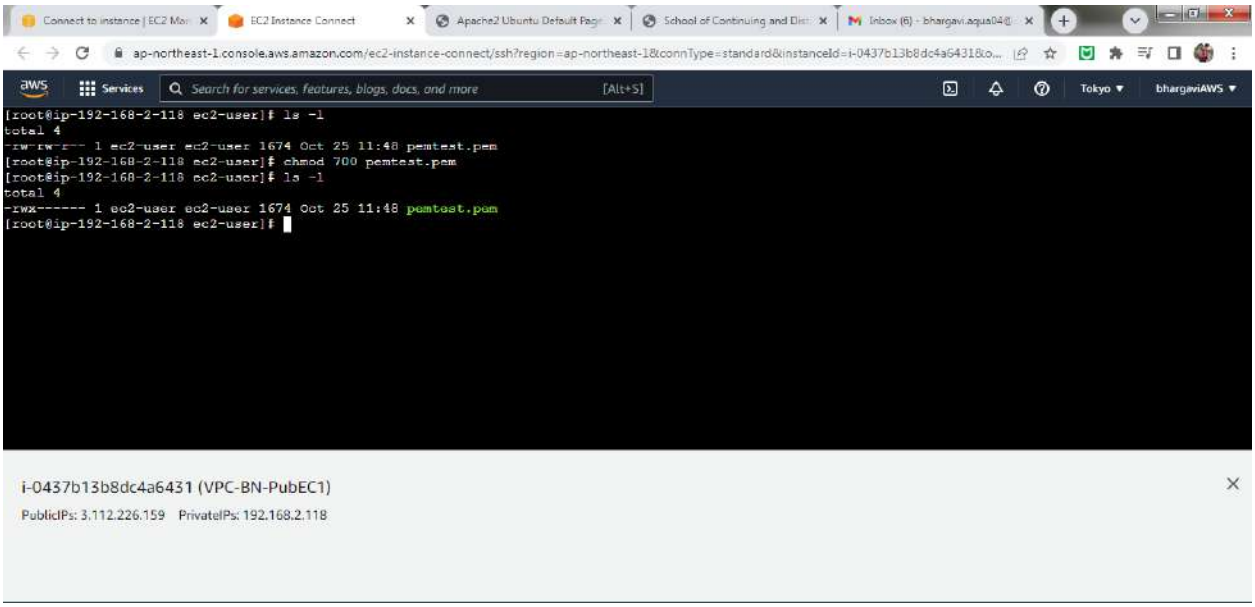
7. Created two instances in VPC, one in Private Subnet and one in Public subnet



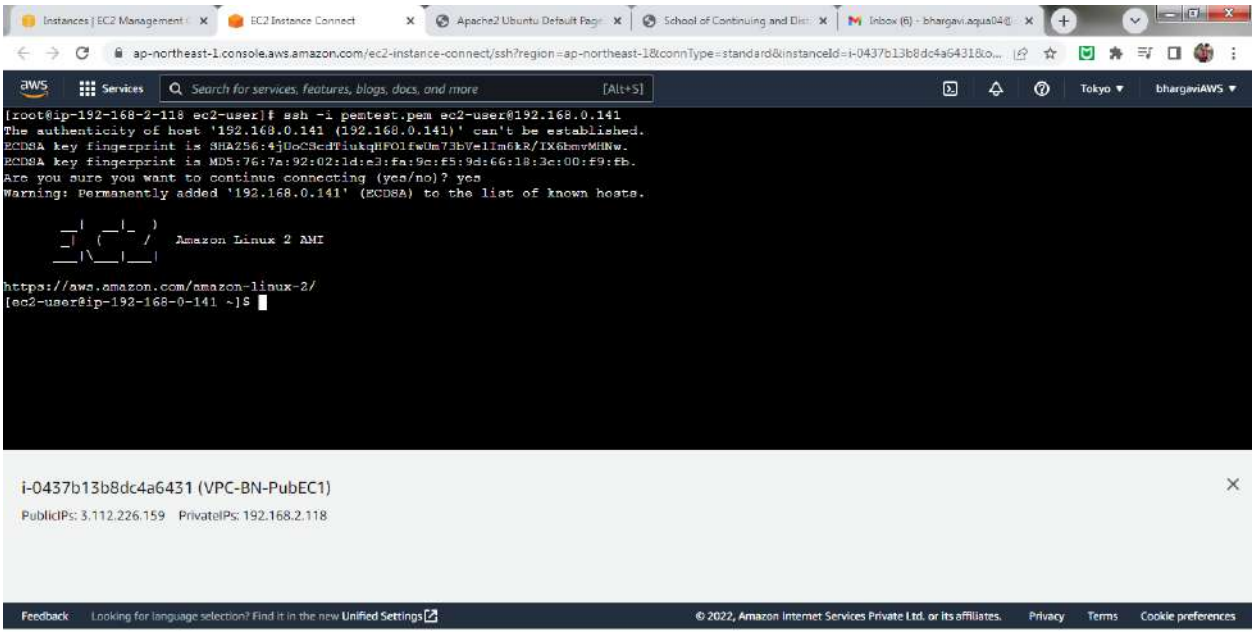
8. Login to Instance in Public subnet and try to Ping instance in Private subnet from Instance in Public subnet



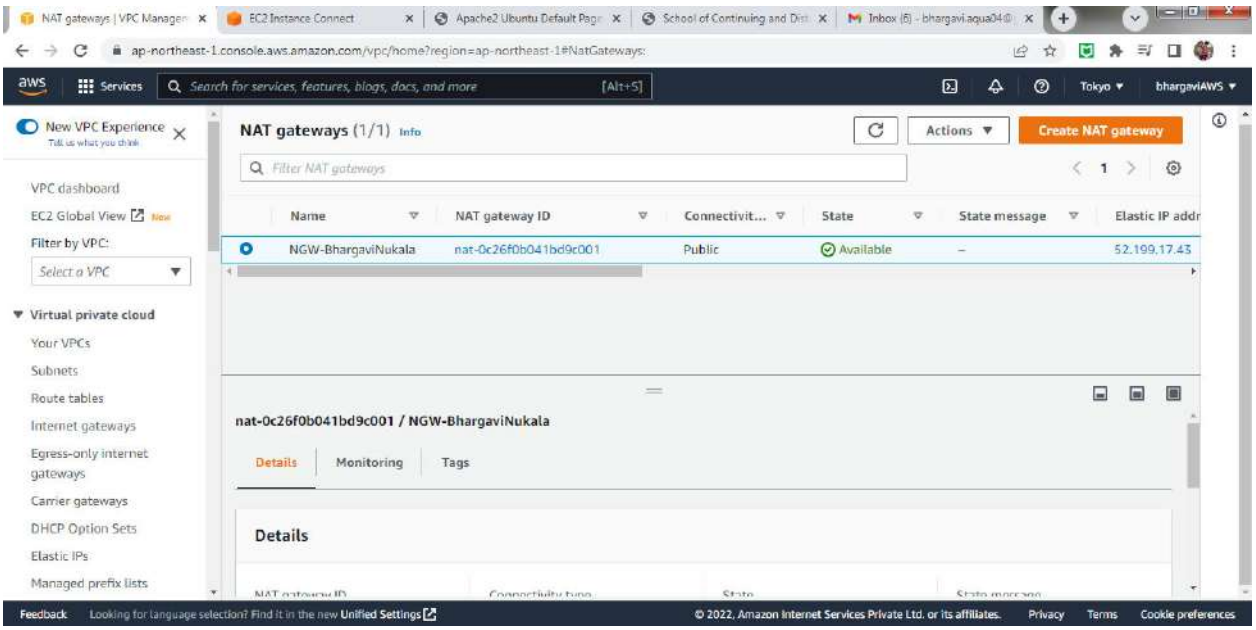
9. Ssh to private instance will fail, so Copied the pemtest.pem file onto Public EC2 instance and changed the permissions



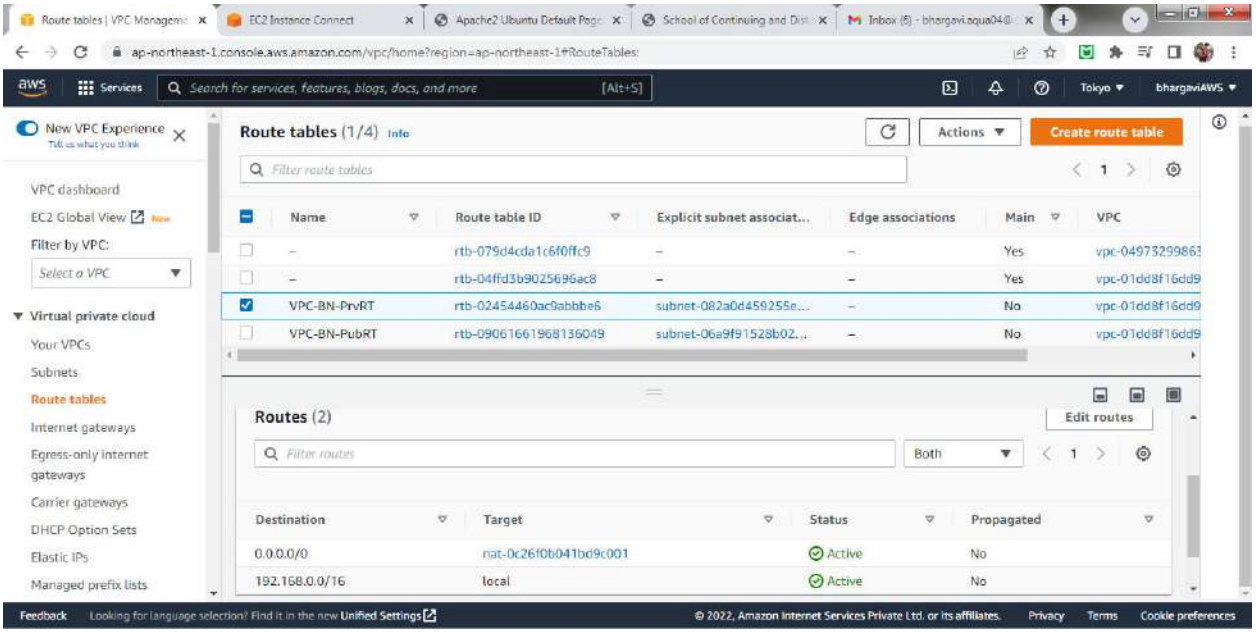
10. Now when we should be able to Connect to a private EC2 instance from a public EC2 instance using ssh



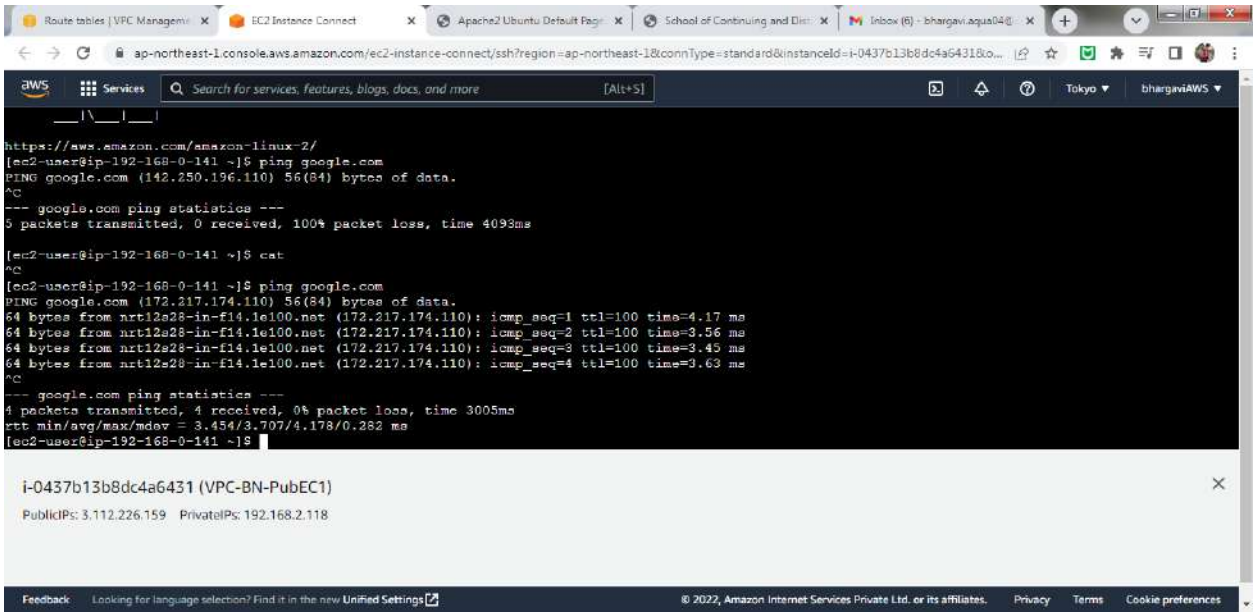
11. Create NAT GateWay to get internet connection to instances on Private Subnet



12. Attaching Private RouteTable to NAT Gateway

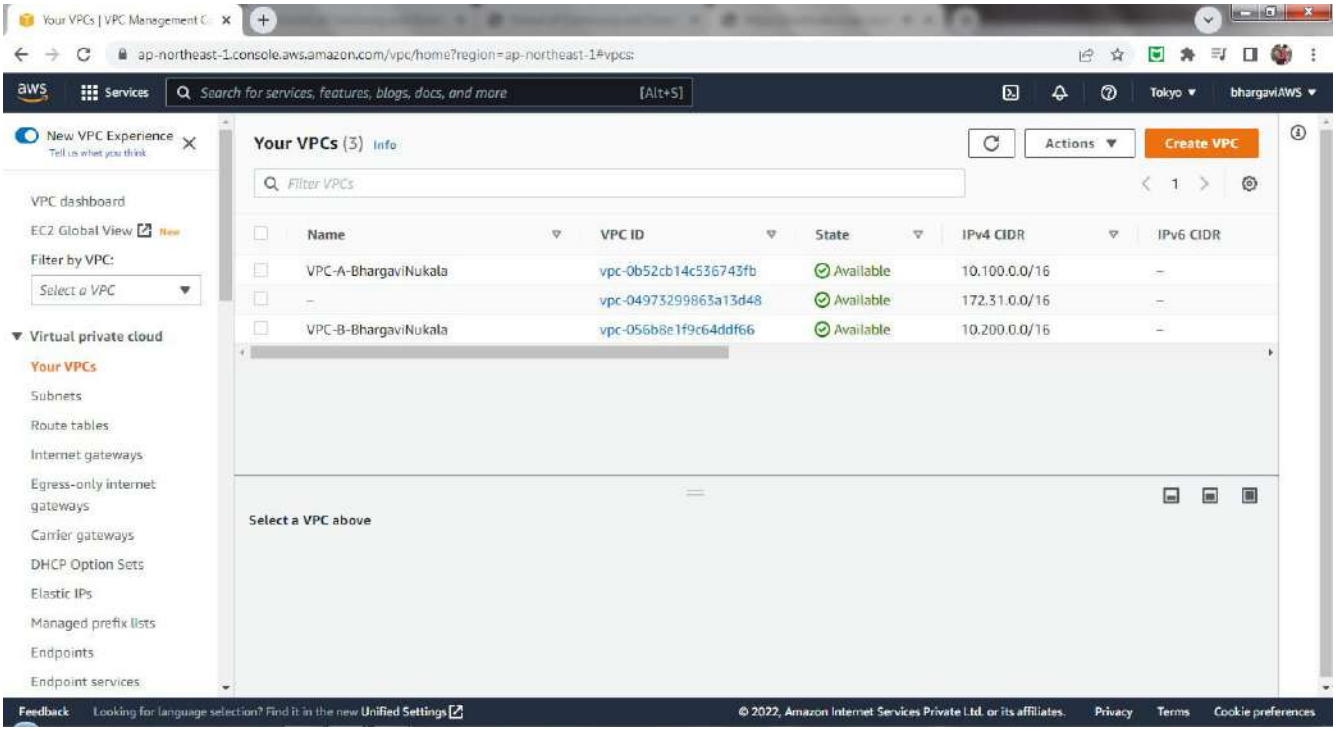


13. Pinging google.com from instance on Private Subnet

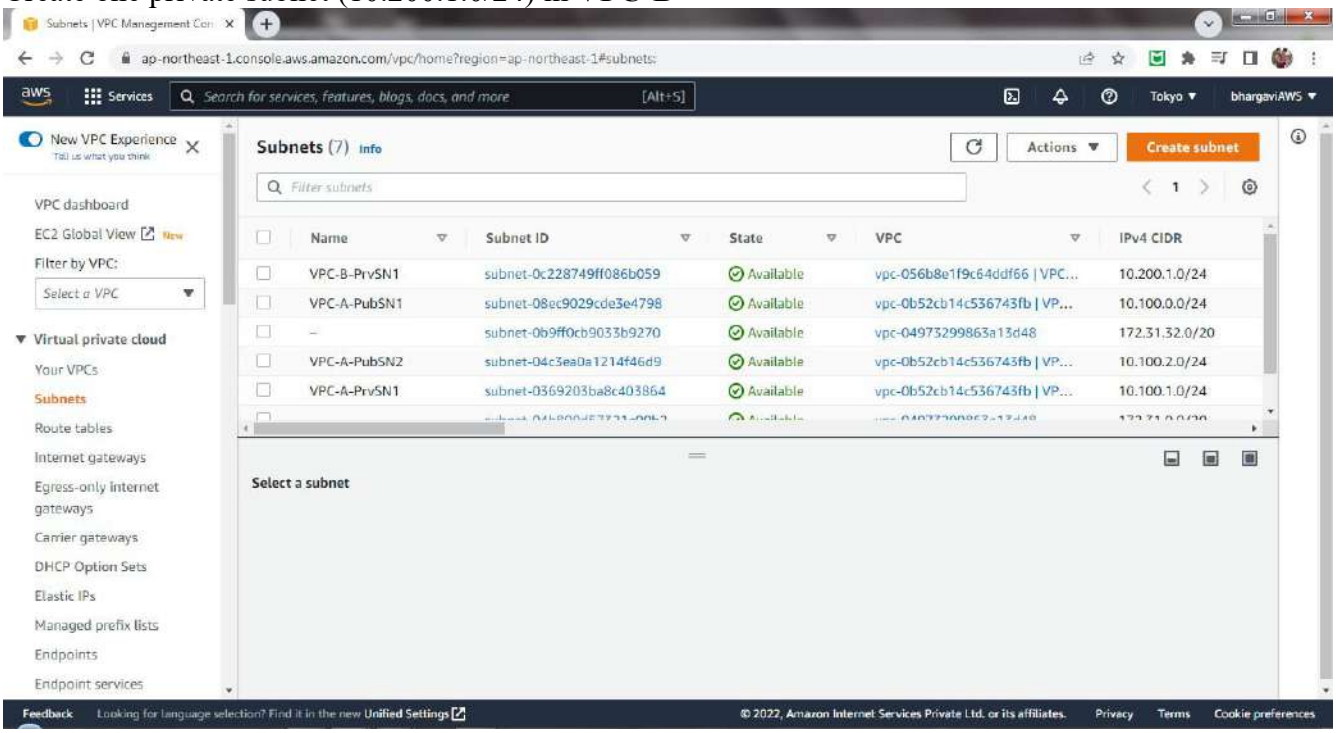


VPC Peering:

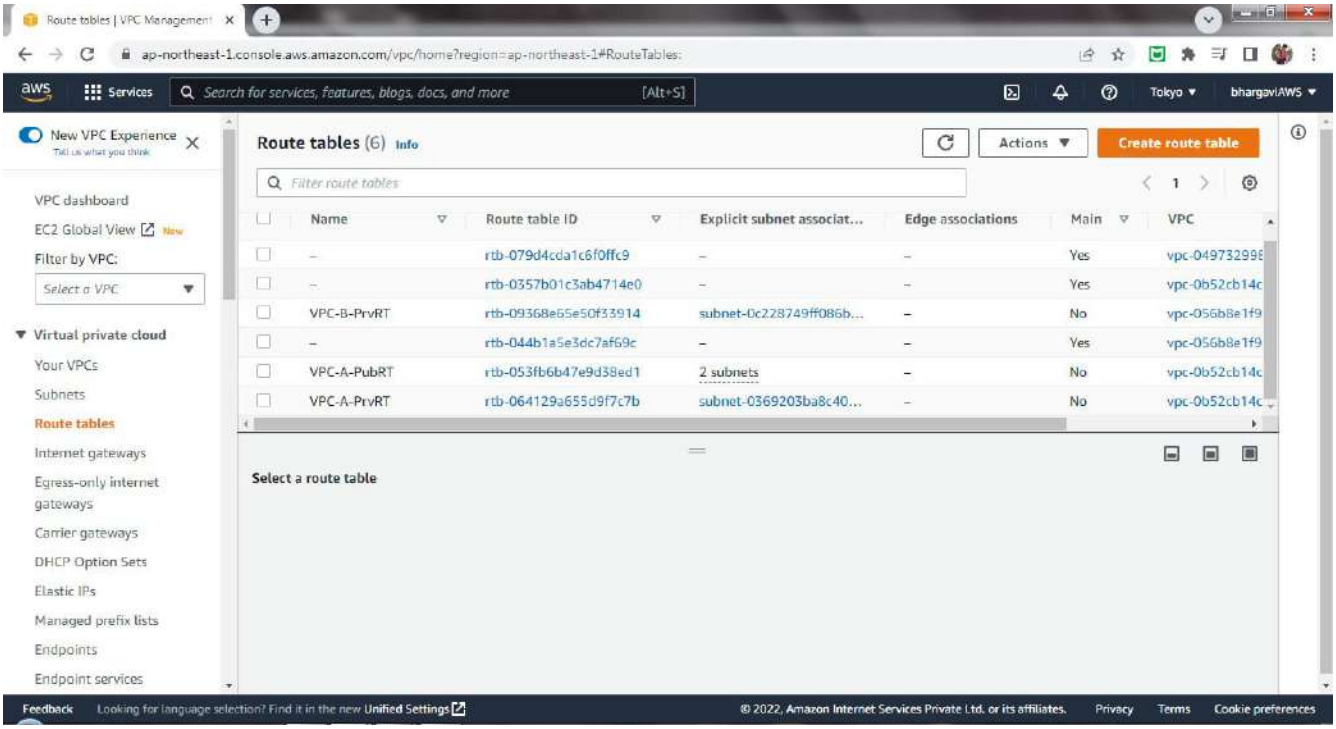
1. Create two VPCs, VPC-A and VPC-B



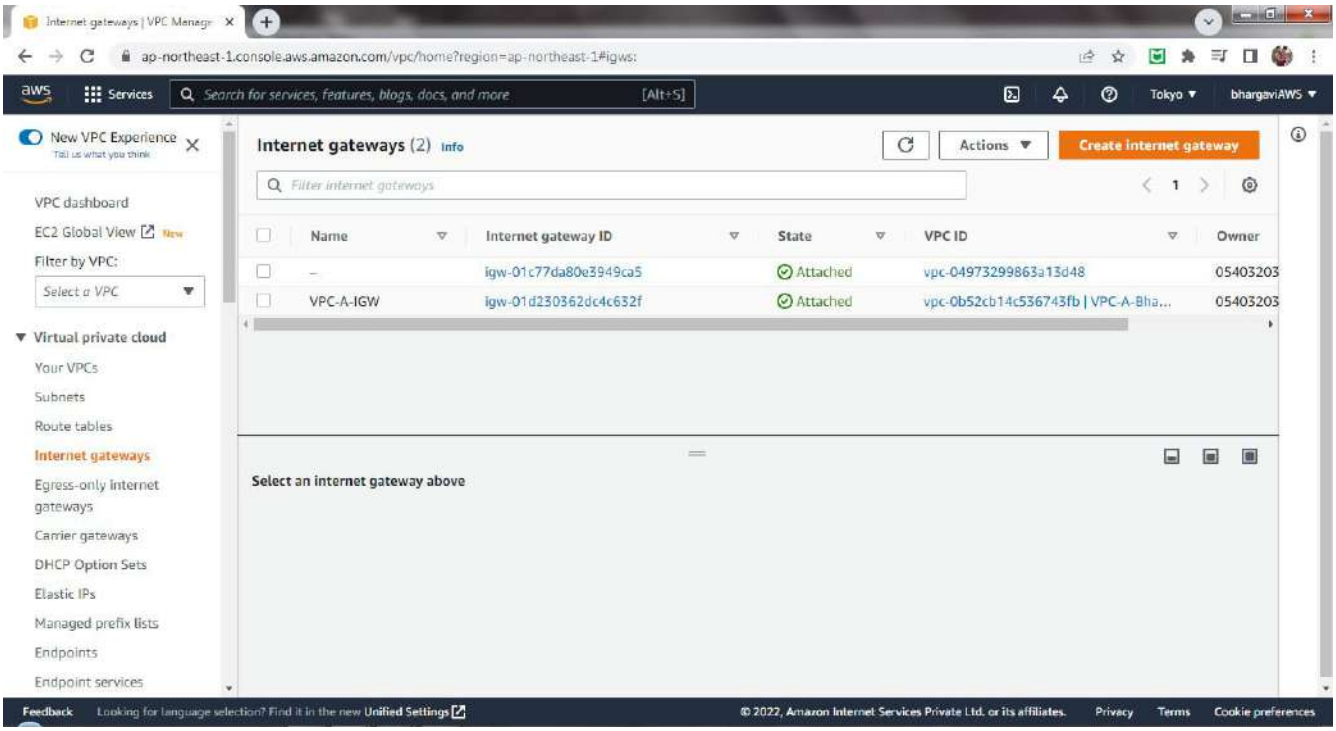
2. Create two public subnets with ranges (10.100.0.0/24) & (10.100.2.0/24) and one private subnet with range (10.100.1.0/24) in **VPC-A**
Create one private subnet (10.200.1.0/24) in **VPC-B**

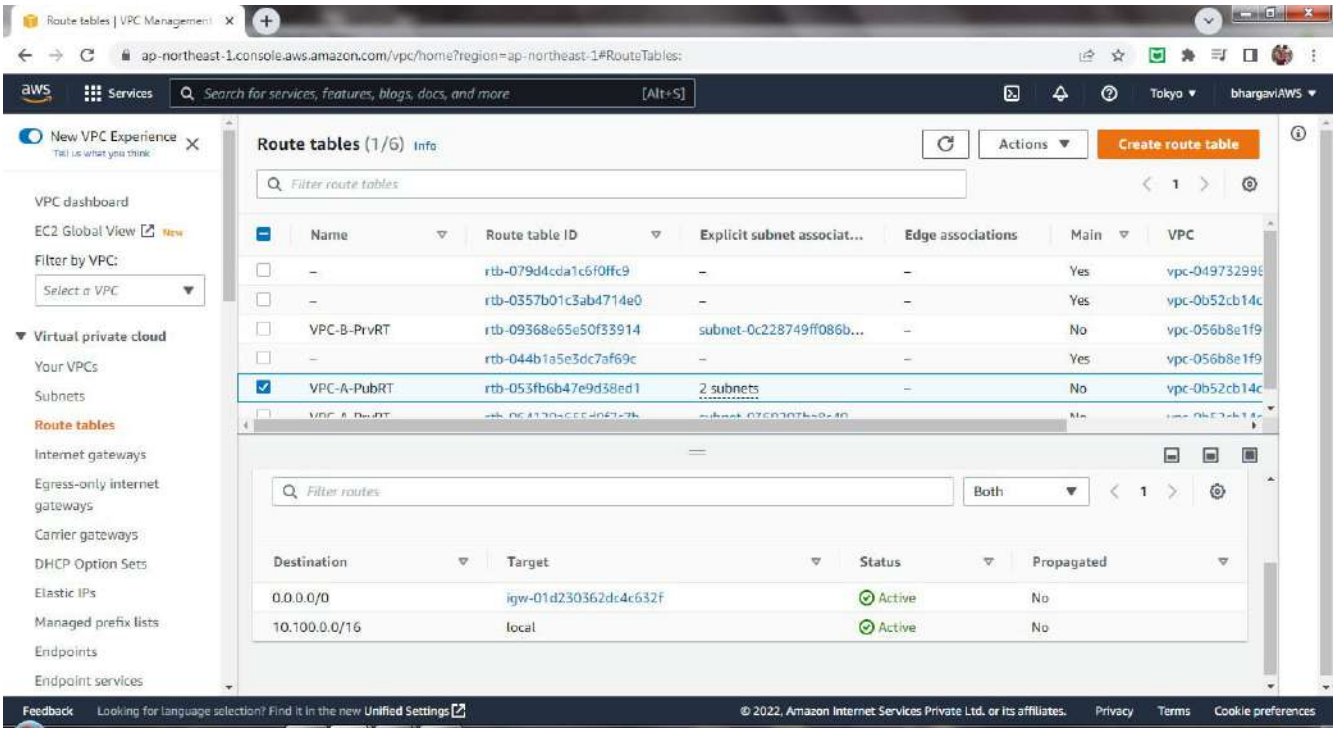


3. Create a private RouteTable for private subnet and public route table for 2 public subnets in **VPC-A**
Create a private route table for private subnet in **VPC-B**
Associate the concerned subnets with the route tables.

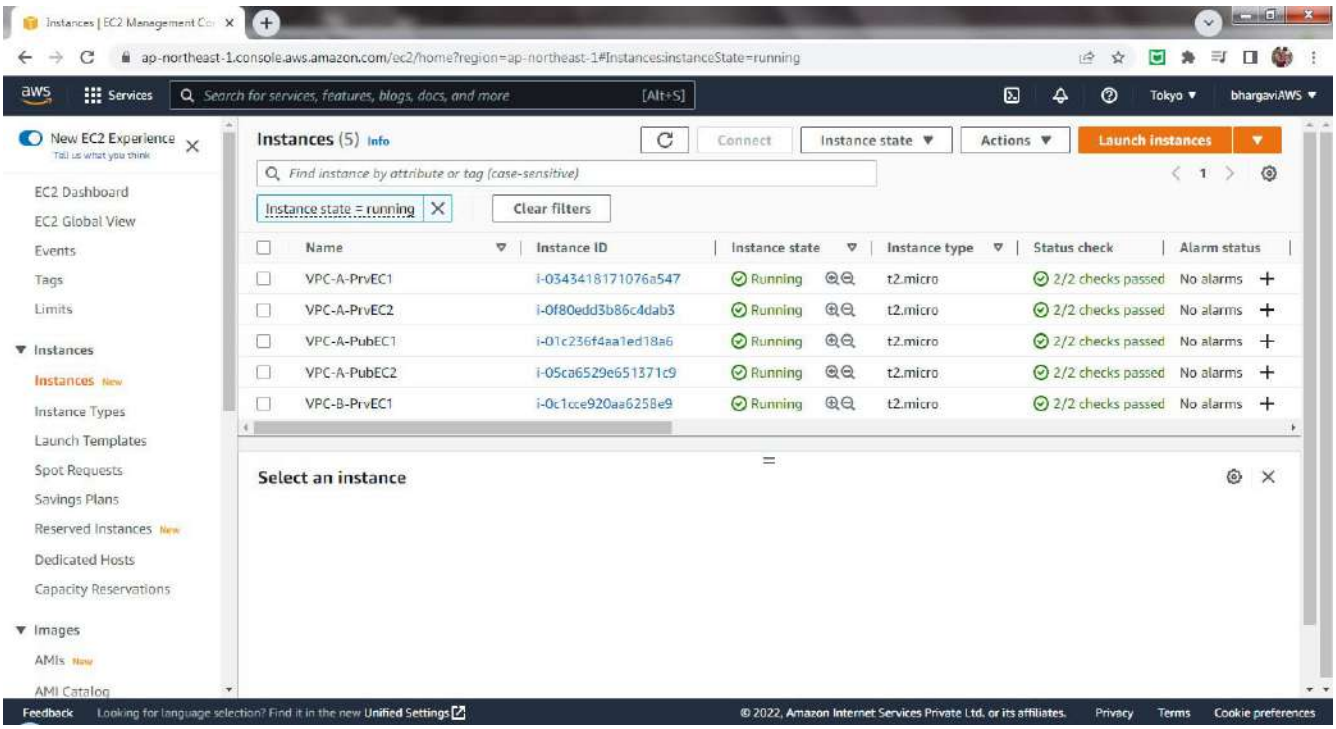


4. Create an Internet Gateway and associate public Route Table of **VPC-A** to that Internet Gateway.

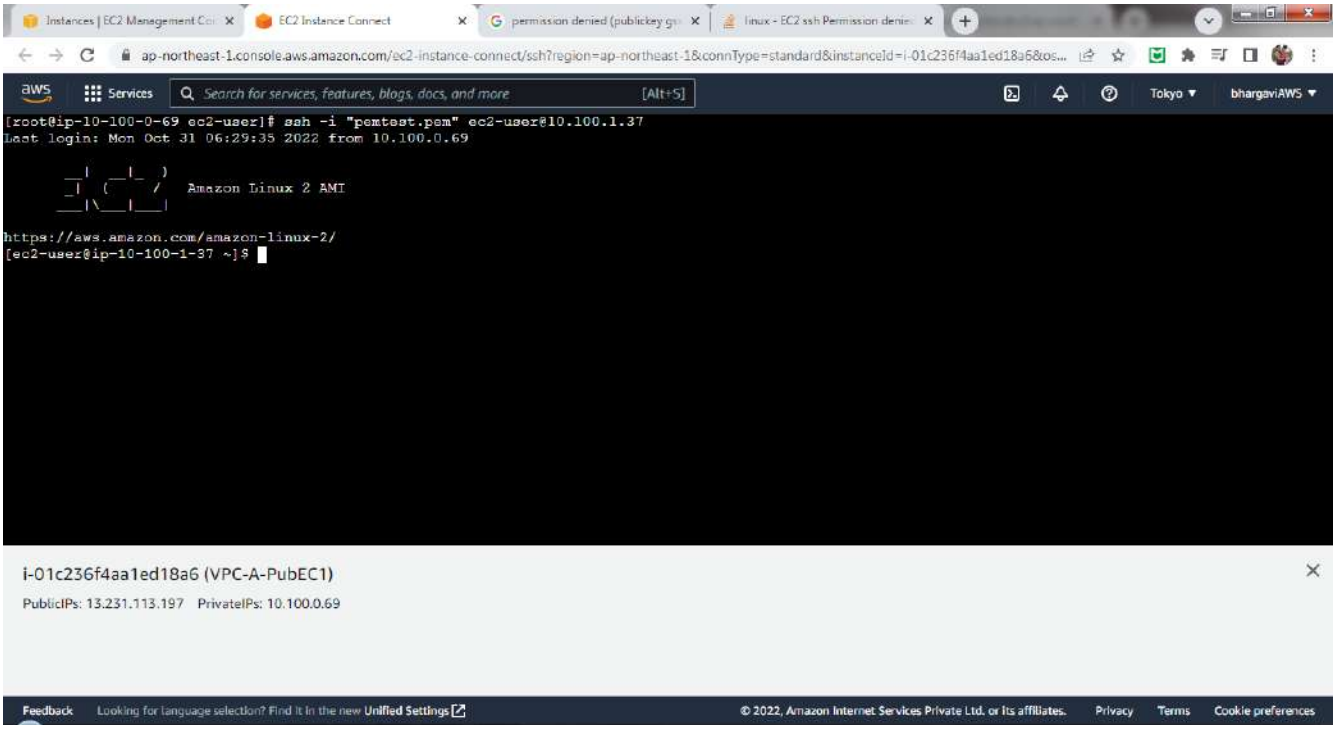




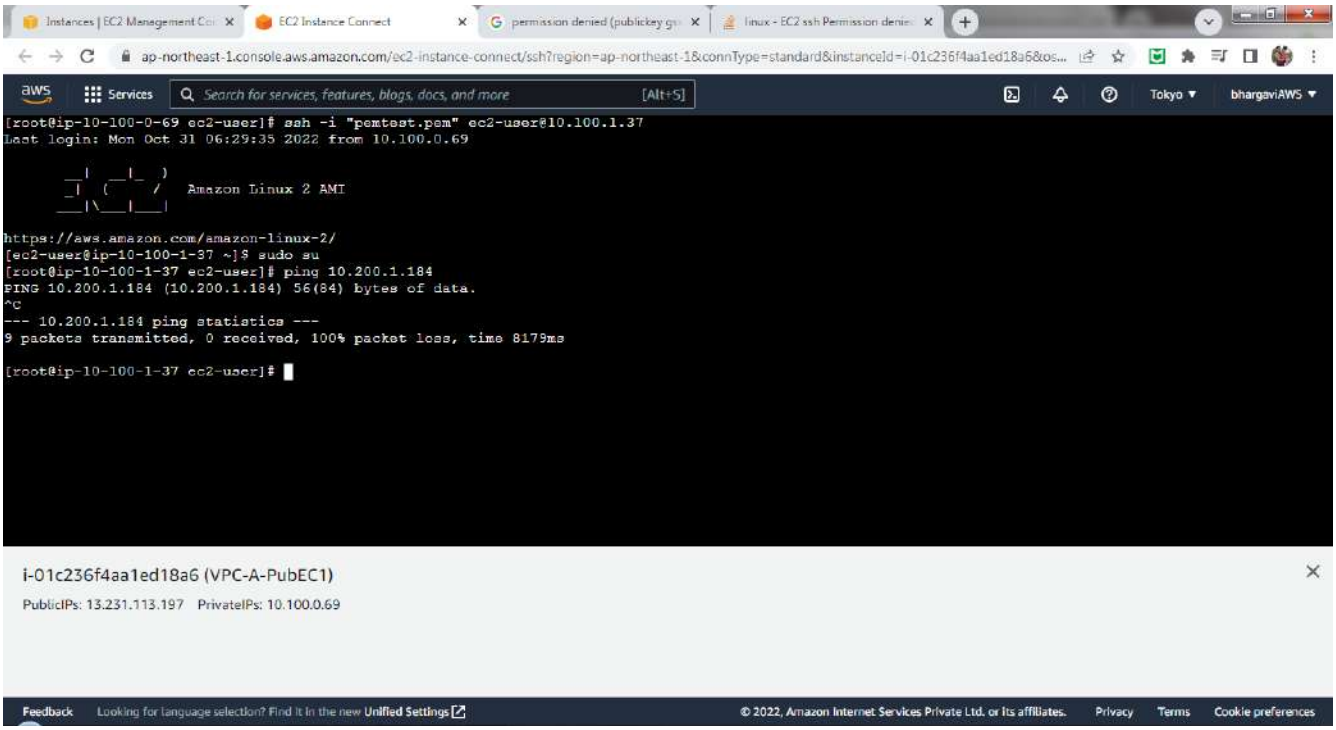
5. Create a EC2 machine in each public subnet & private subnet should have 2 EC2 instance for **VPC-A**
create one EC2 instance in private subnetof **VPC-B**



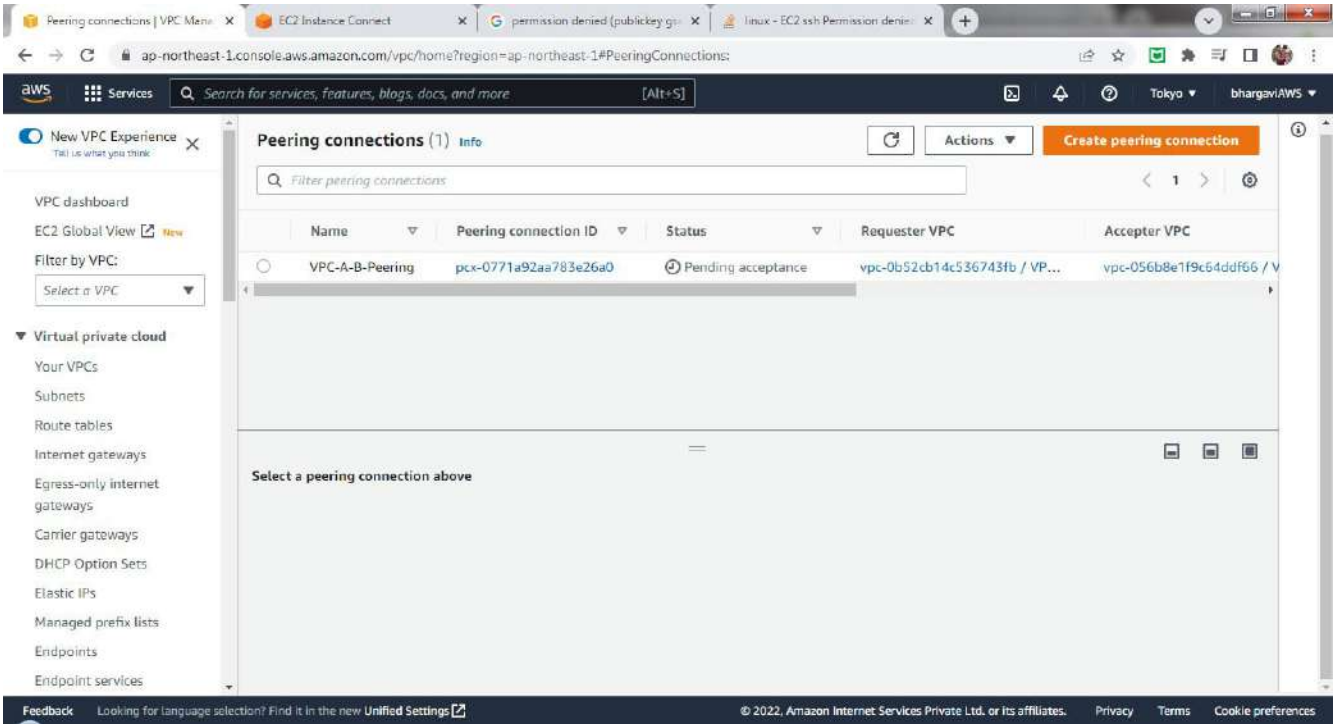
6. Connect to private EC2 instance of **VPC-A** from public EC2 instance of **VPC-A**



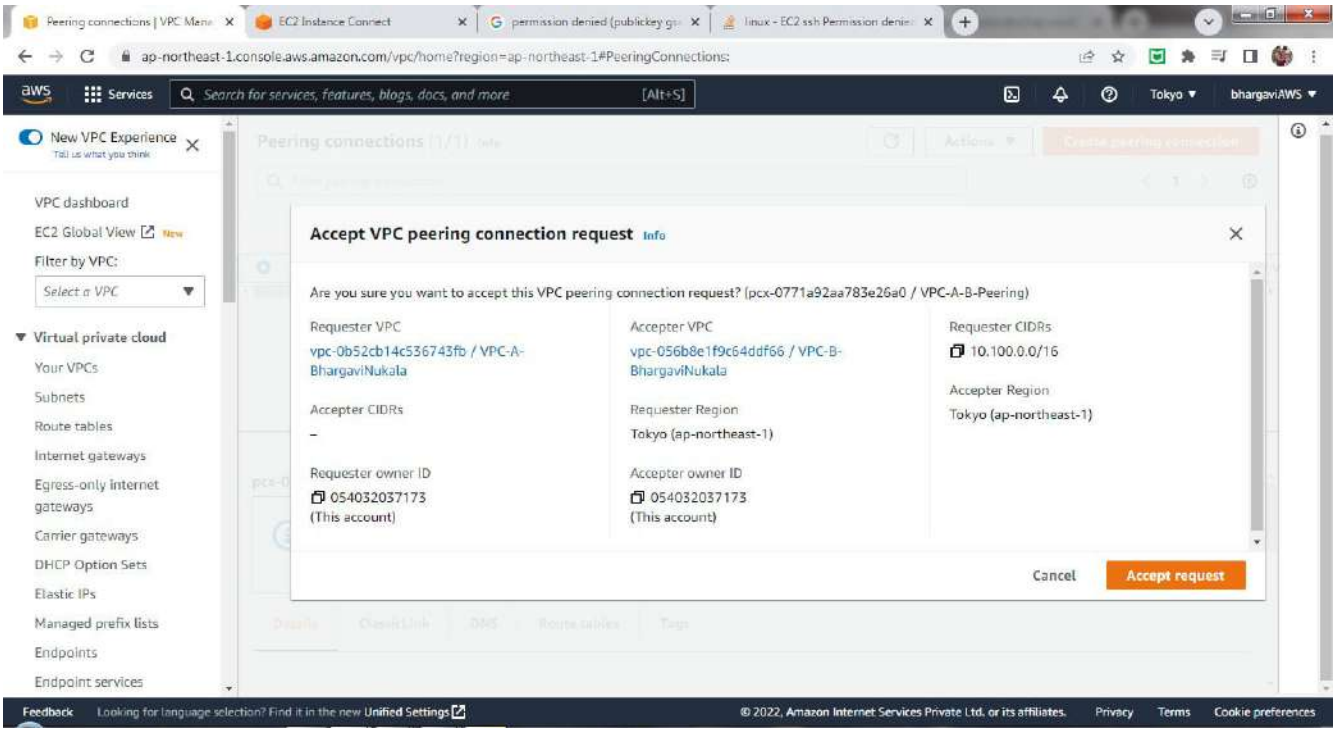
7. From this private instance of VPC-A, try to ping to private instance of VPC-B. It will fail as there is no internet connection to VPC-B



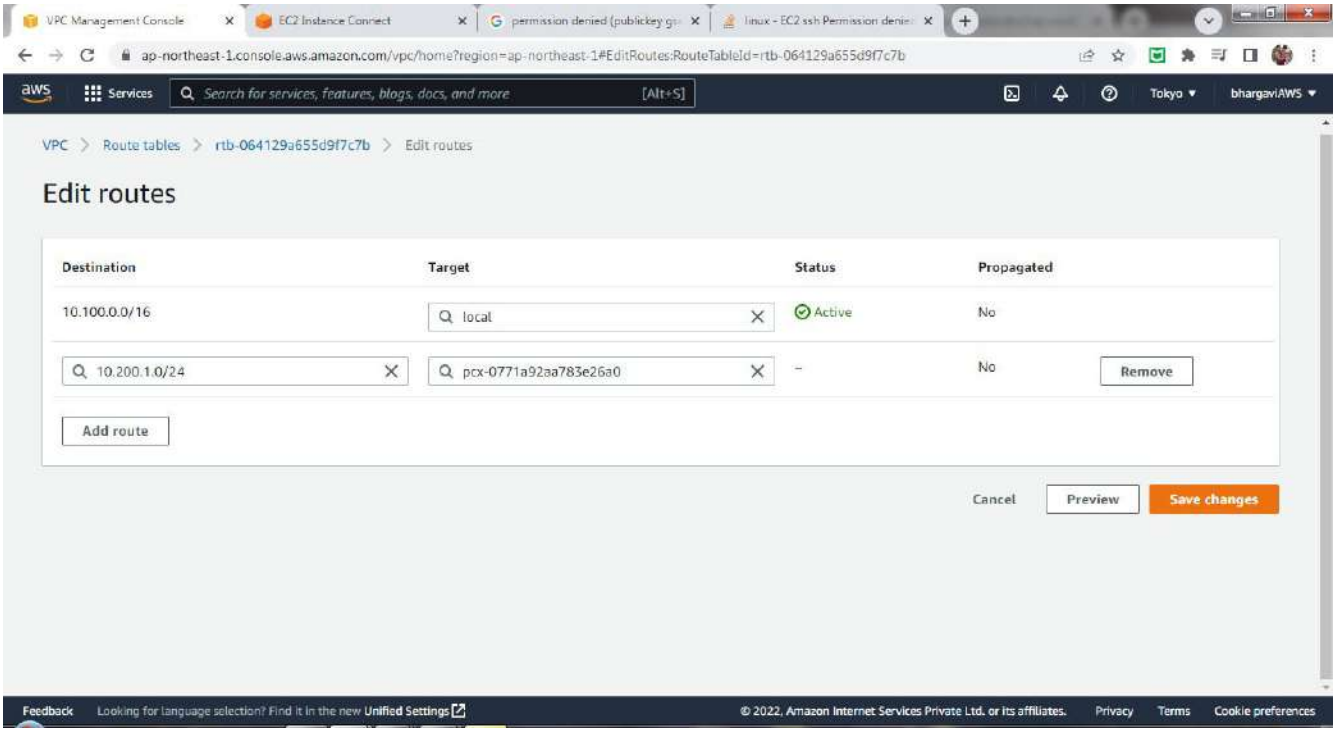
8. So for communication between two private instances of VPC-A and VPC-B, create a peer connection.

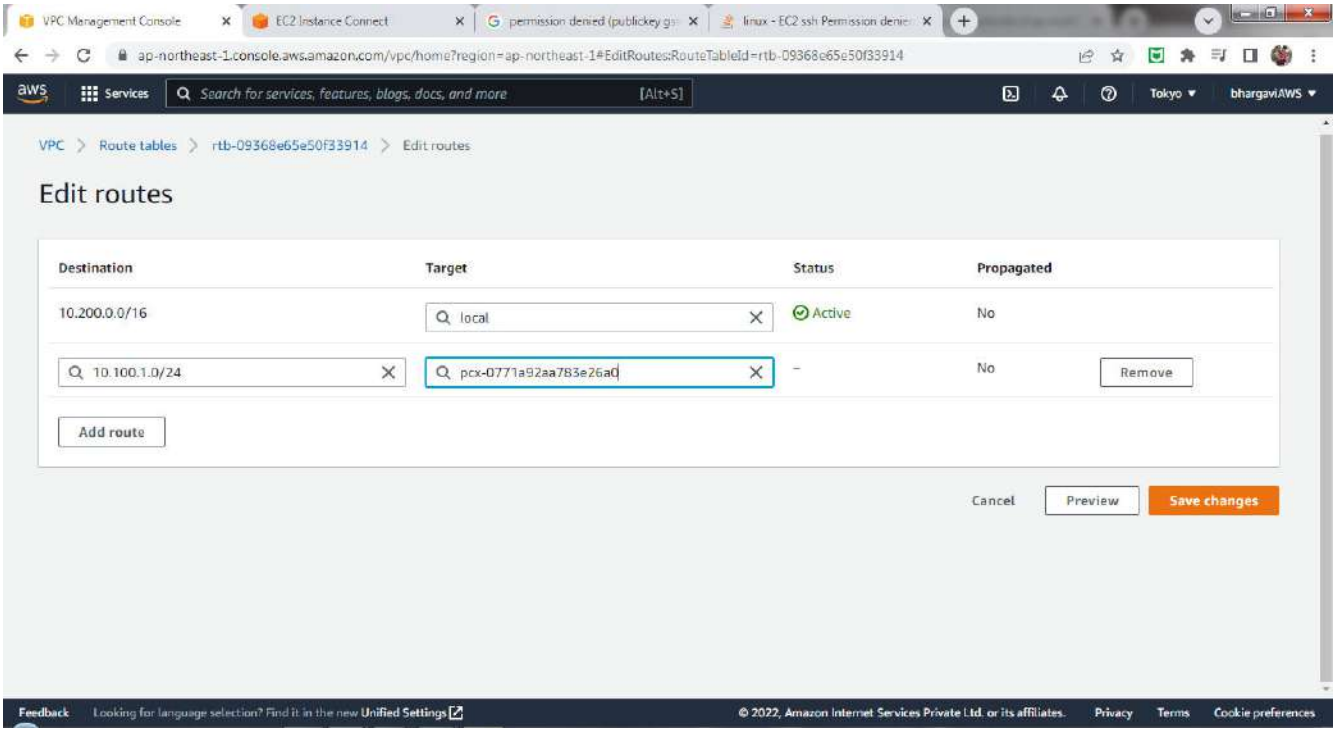


9. Accept the peering connection request

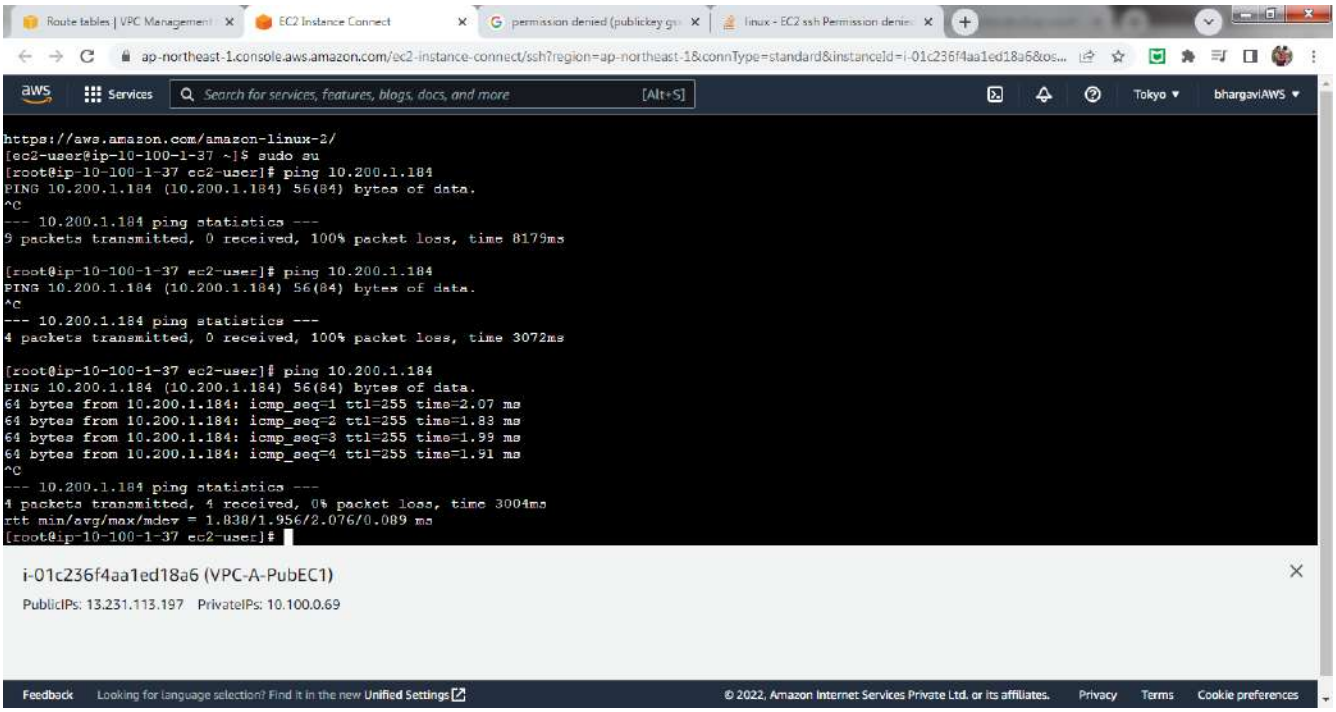


10. Update the private route tables of VPC-A and VPC-B with the newly created peering connection.

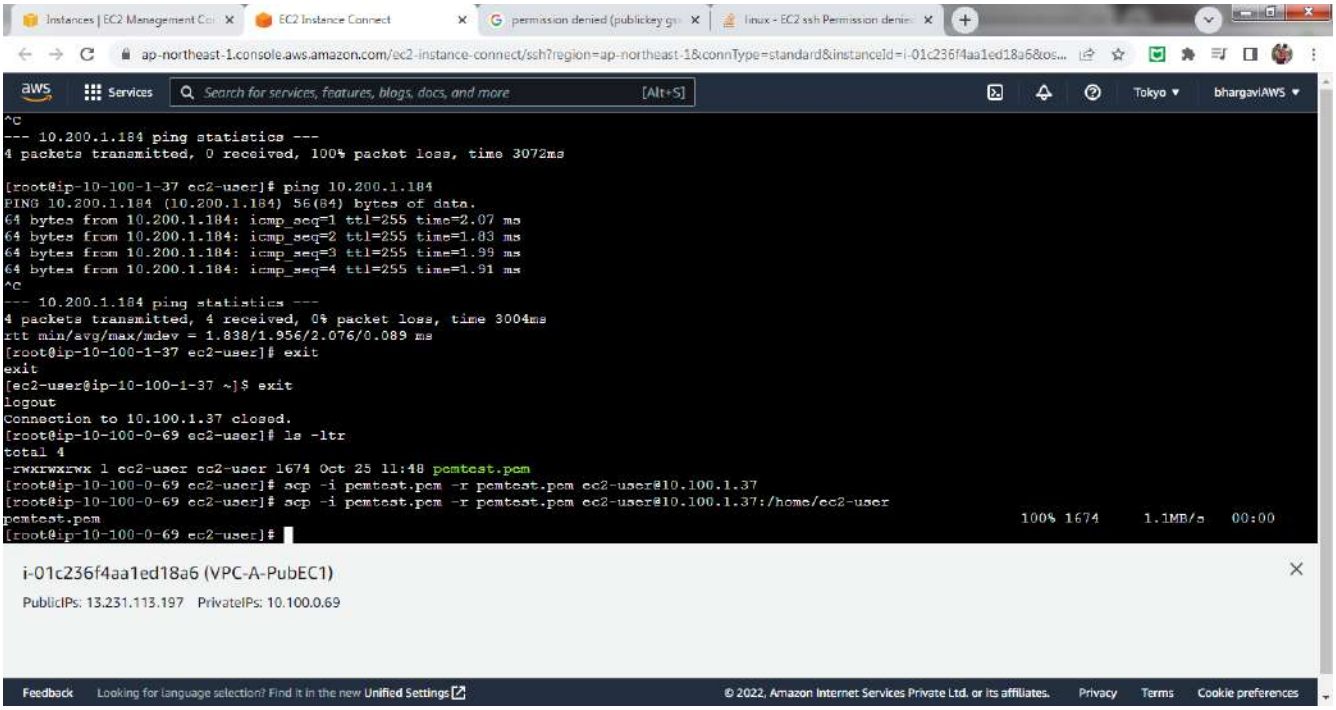




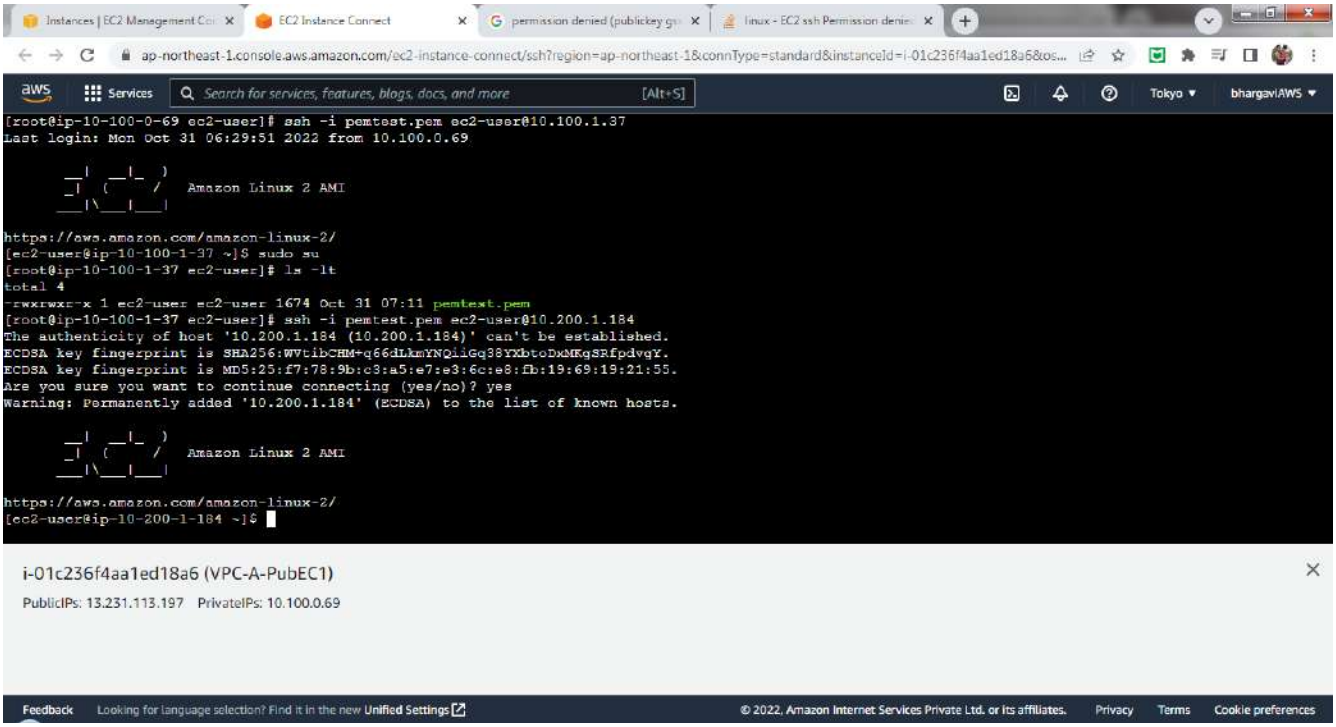
11. Now if we ping from private EC2 instance of VPC-A to private EC2 instance of VPC-B, ping will be successful



12. To connect to private EC2 instance of VPC-B, we need to copy the .pem file from public EC2 instance of VPC-A to private EC2 instance of VPC-A and then ssh to private EC2 instance of VPC-B



13. Now when we try to connect to private EC2 instance of VPC-B from private EC2 instance of VPC-A, both ping and ssh will succeed. We can also observe that .pem file is available in private EC2 instance of VPC-A



So peering connection is done and we are able to connect the private EC2 instances of both VPC-A and VPC-B.