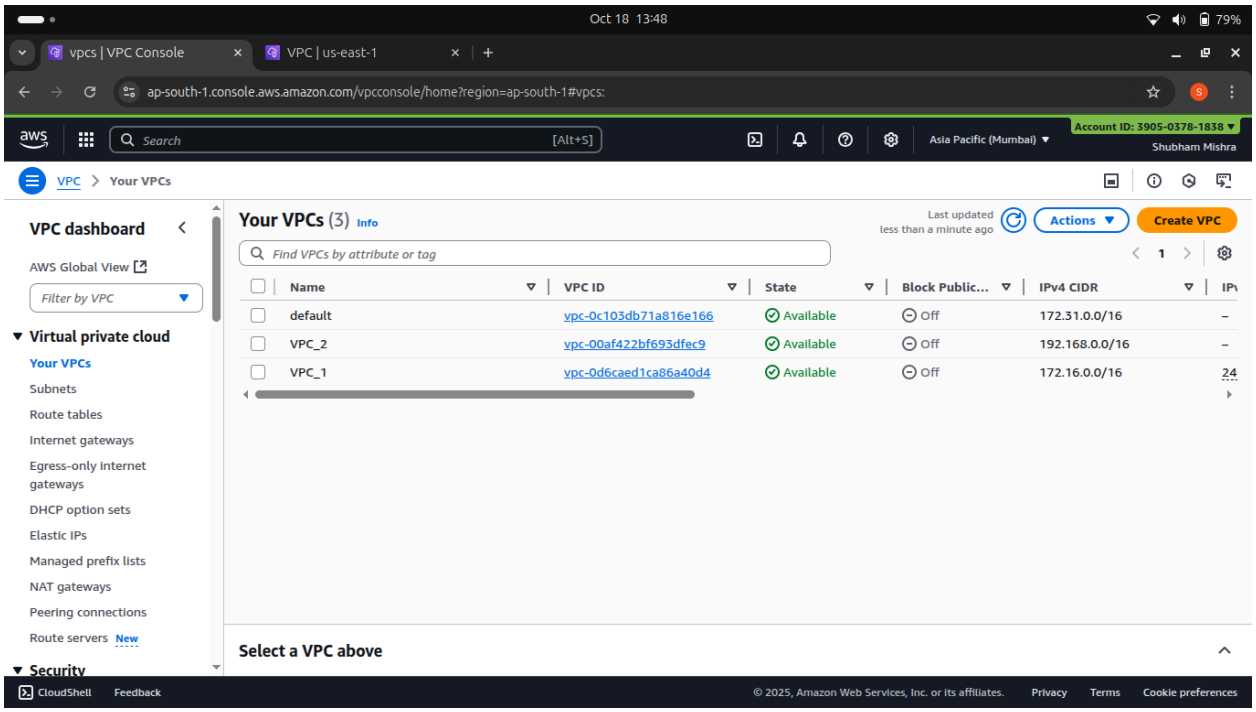
Inter-VPC Communication using AWS VPC Peering

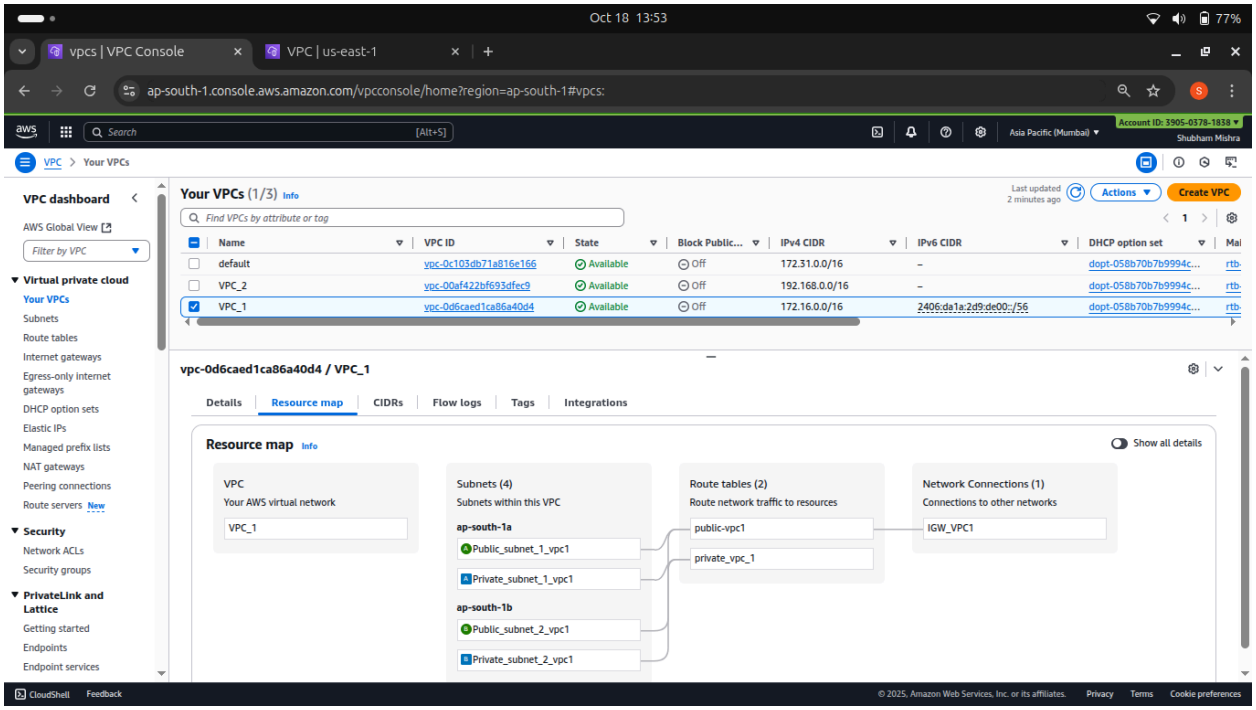
Overview

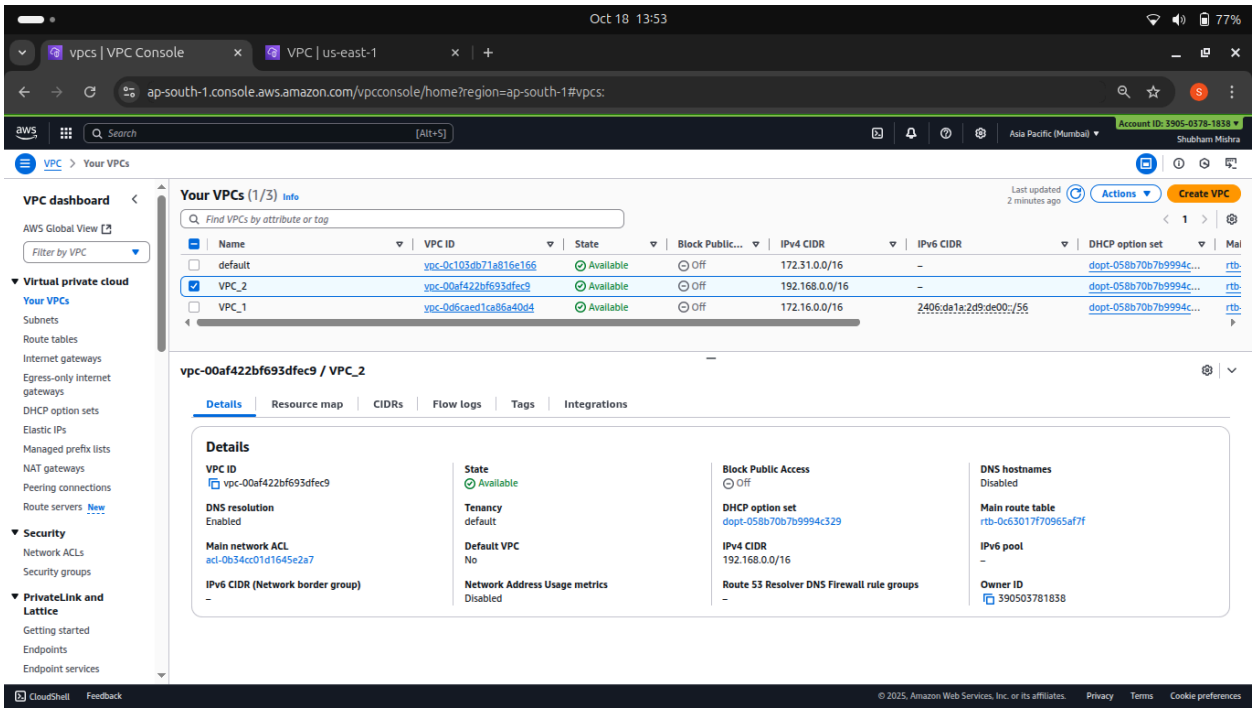
Established secure private communication between two AWS VPCs using VPC Peering, enabling EC2 instances in both VPCs to communicate without using the public internet. This project demonstrates network isolation, route management, and private connectivity between multi-tier environments.

Step 1) Created two vpc and i was default vpc

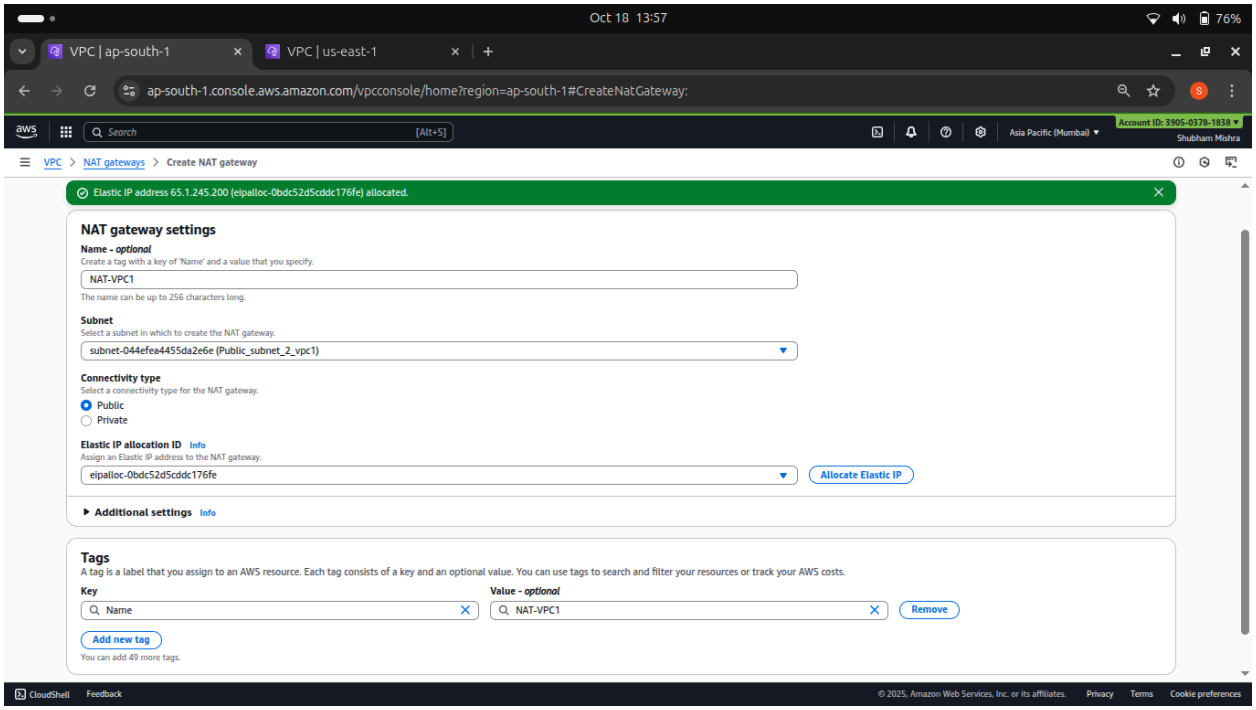


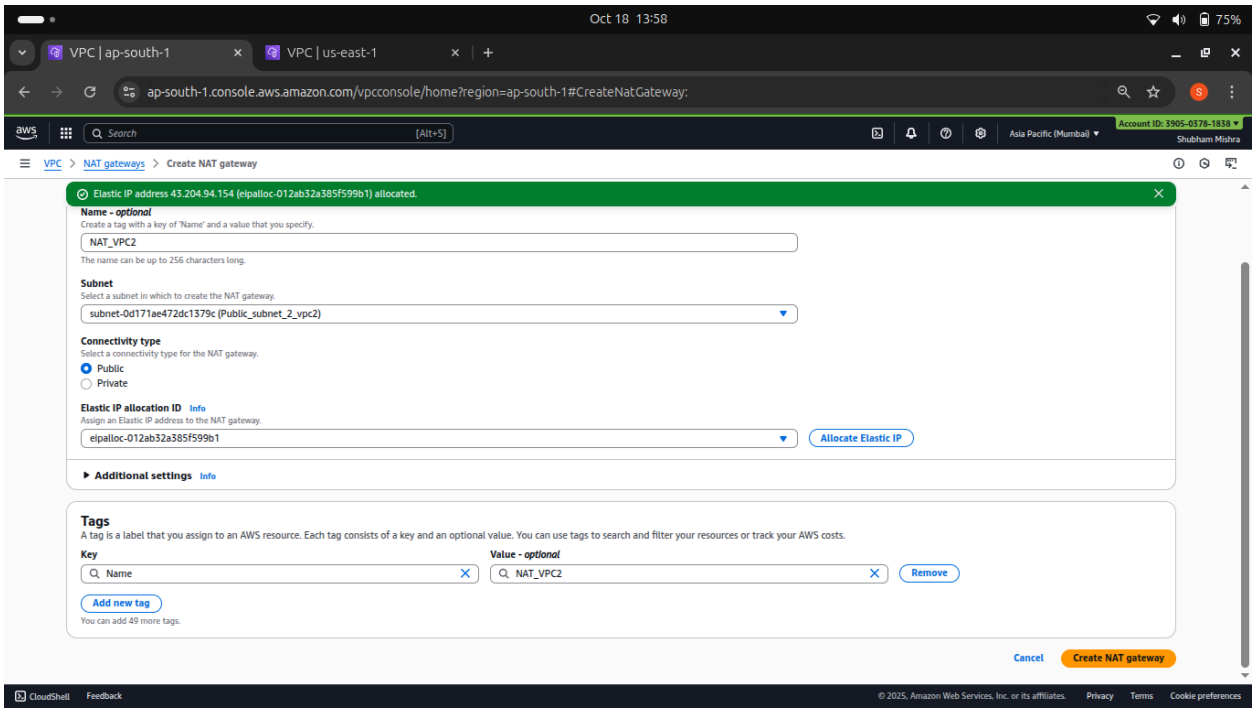
Step 2) Created two public and two private subnet for vpc1 and vpc2 also created private route table for both vpc1 and vpc2 and routed accordingly as shown below also created internet gateway in vpc1 and vpc2 and added route in public route table of both vpc1 and vpc2



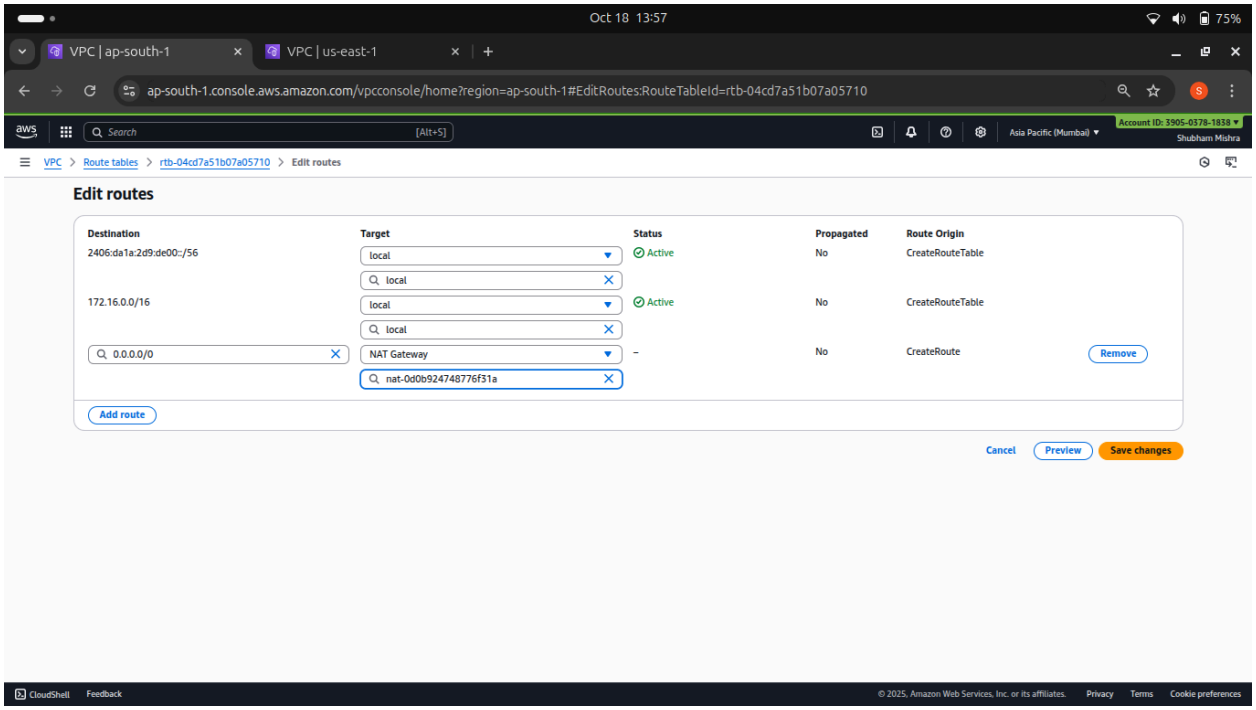


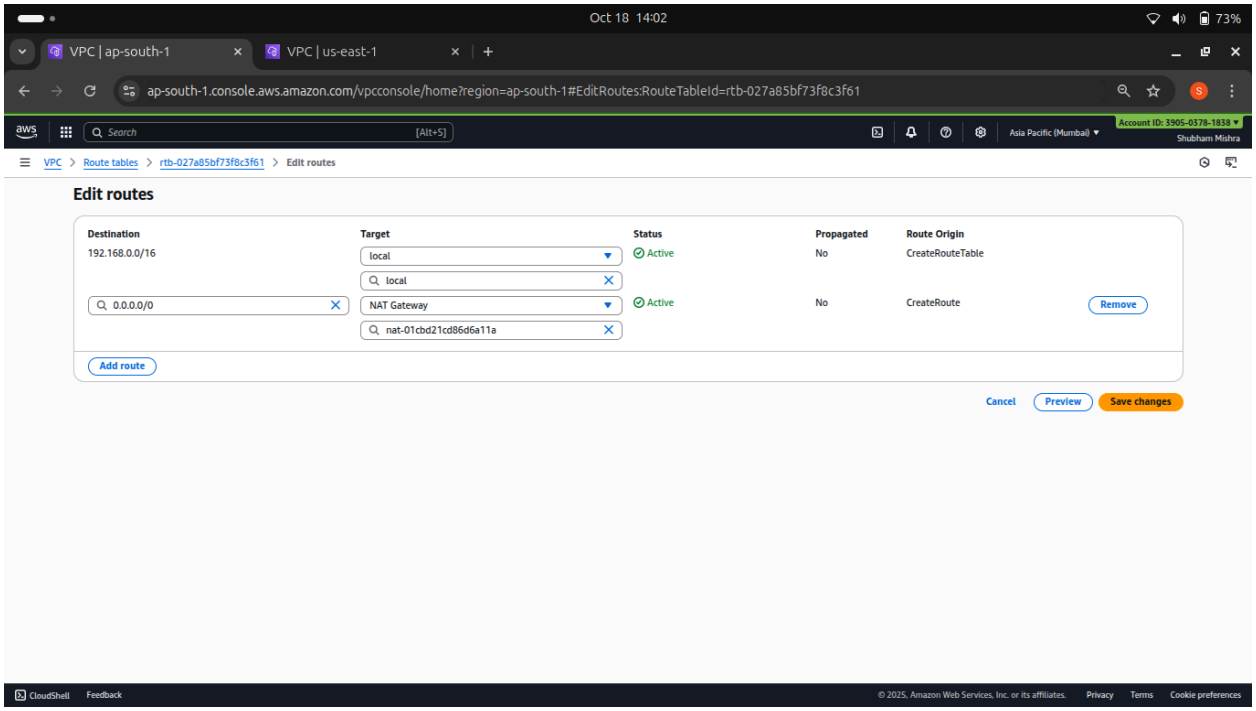
Step 3) Now we create Natgateway for private subnet internet access



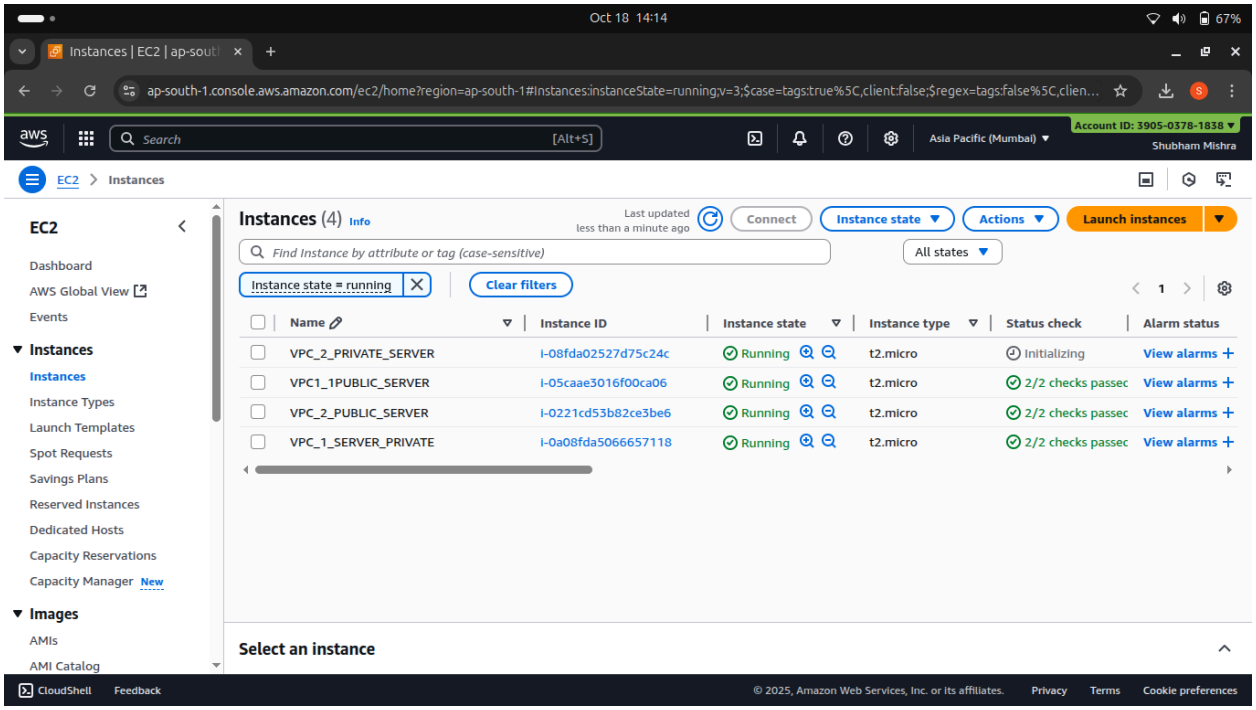


Step 4) We will update private route table to allow internet to go through natgateway

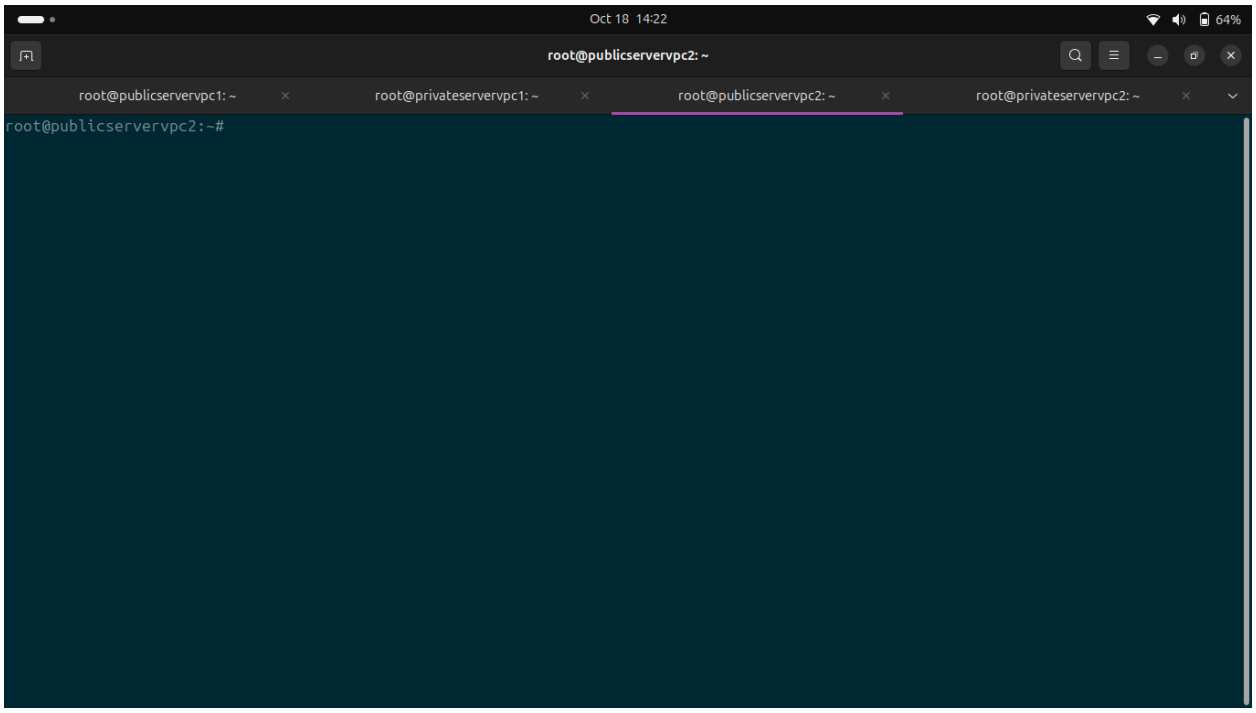




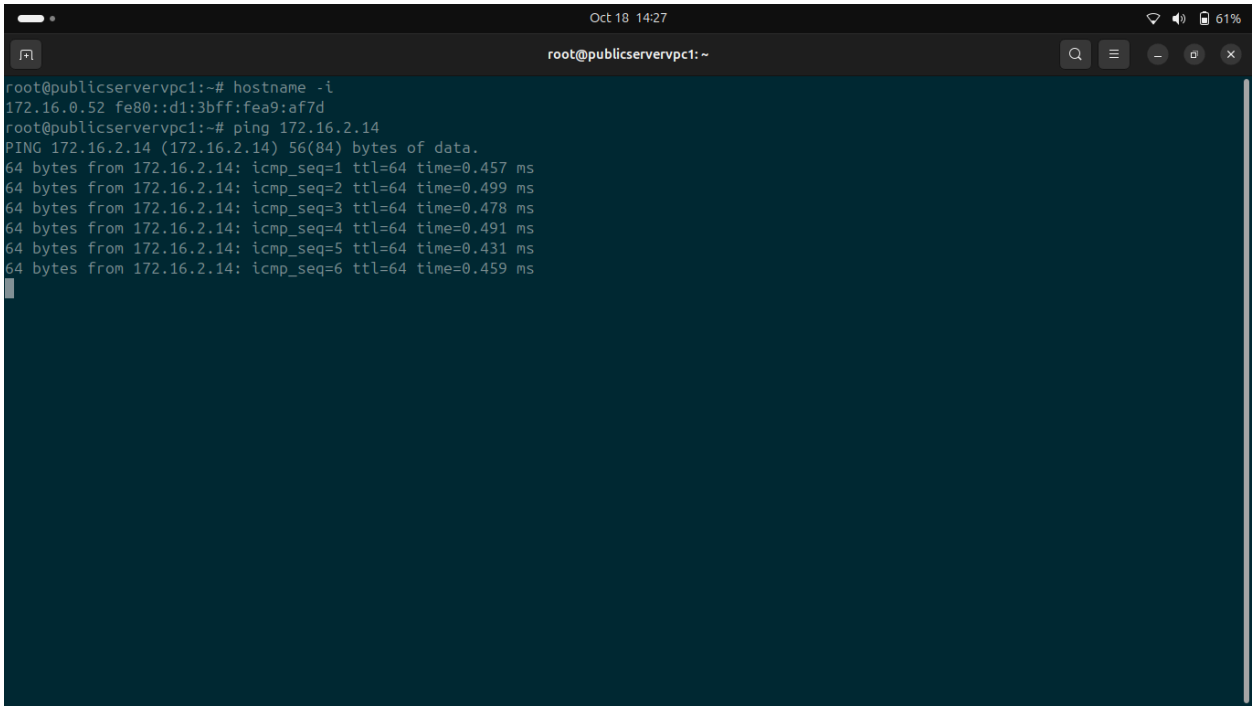
Step 5) Now We will launch 2 instances in both public and private subnet in both vpc1 and vpc2

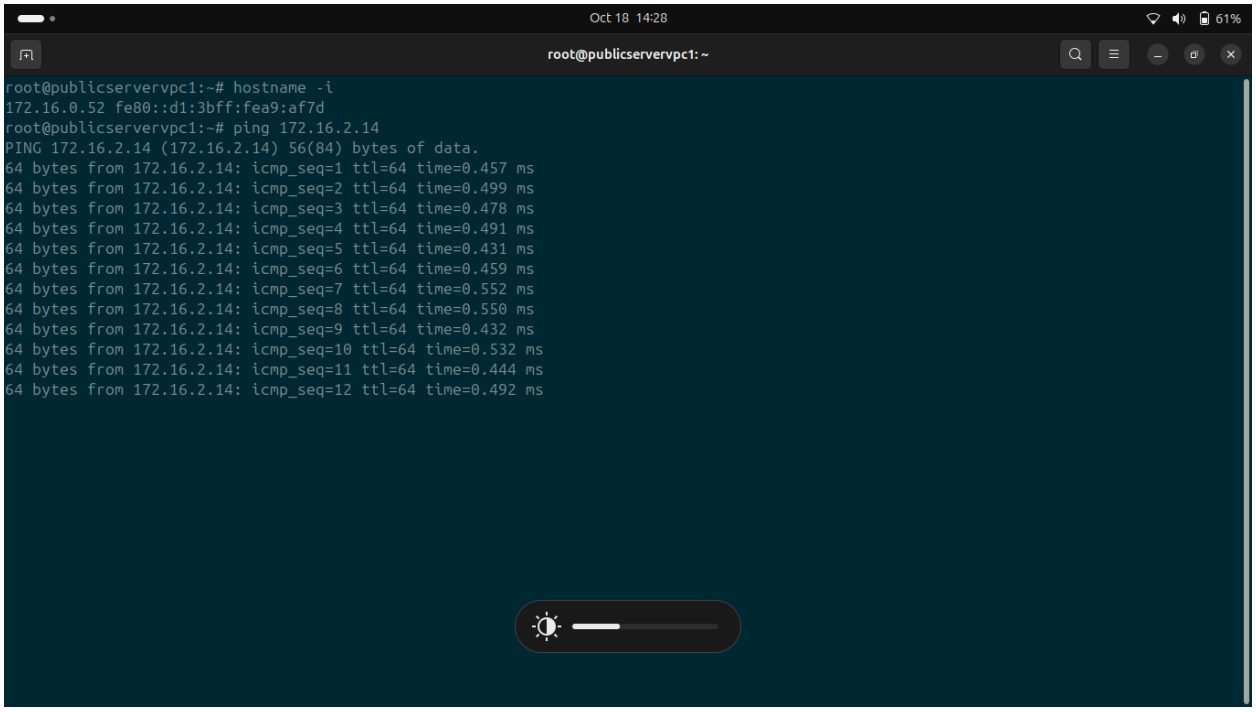


Step 6) Now we will ssh into all 4 instances

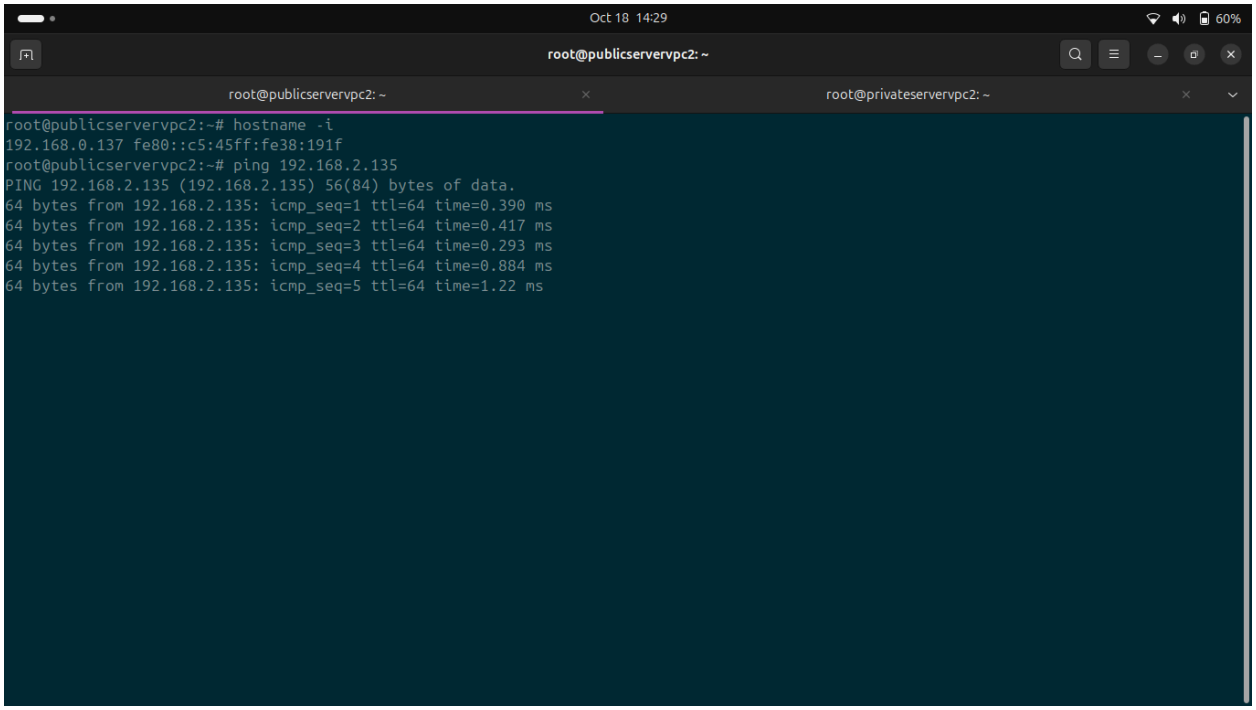


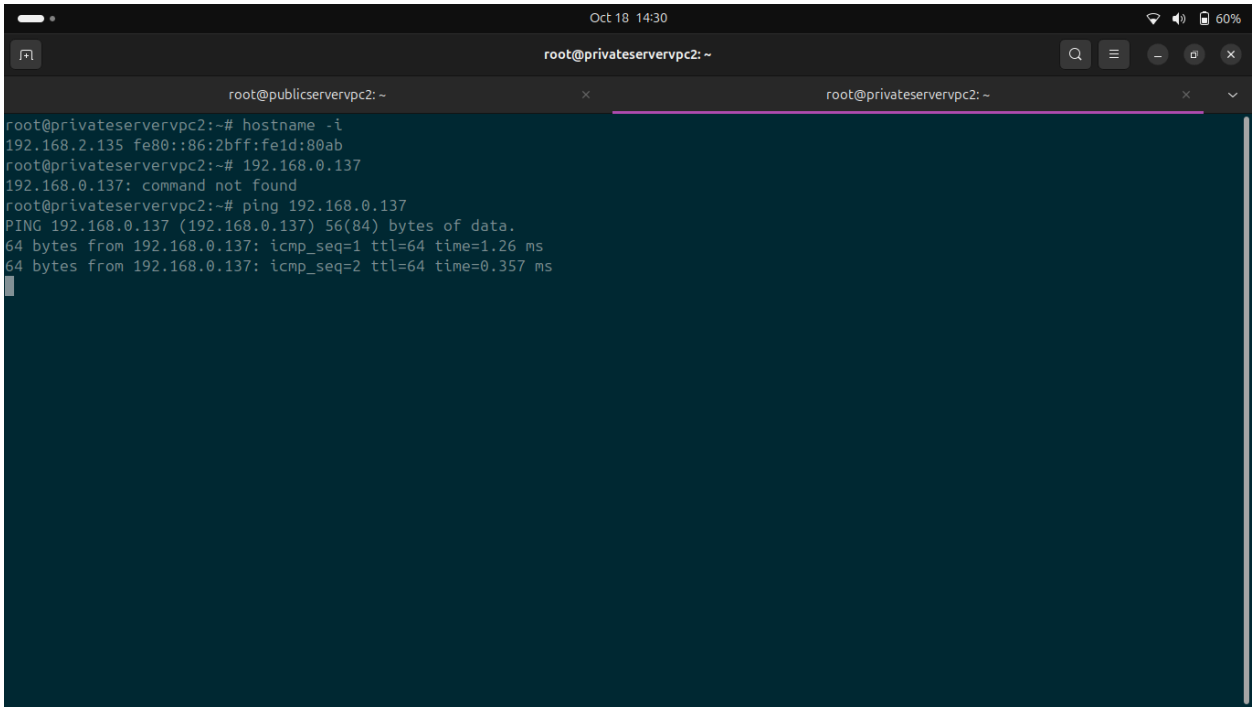
Step 7) we will ping public and private ec2 instances in vpc1 and vpc2



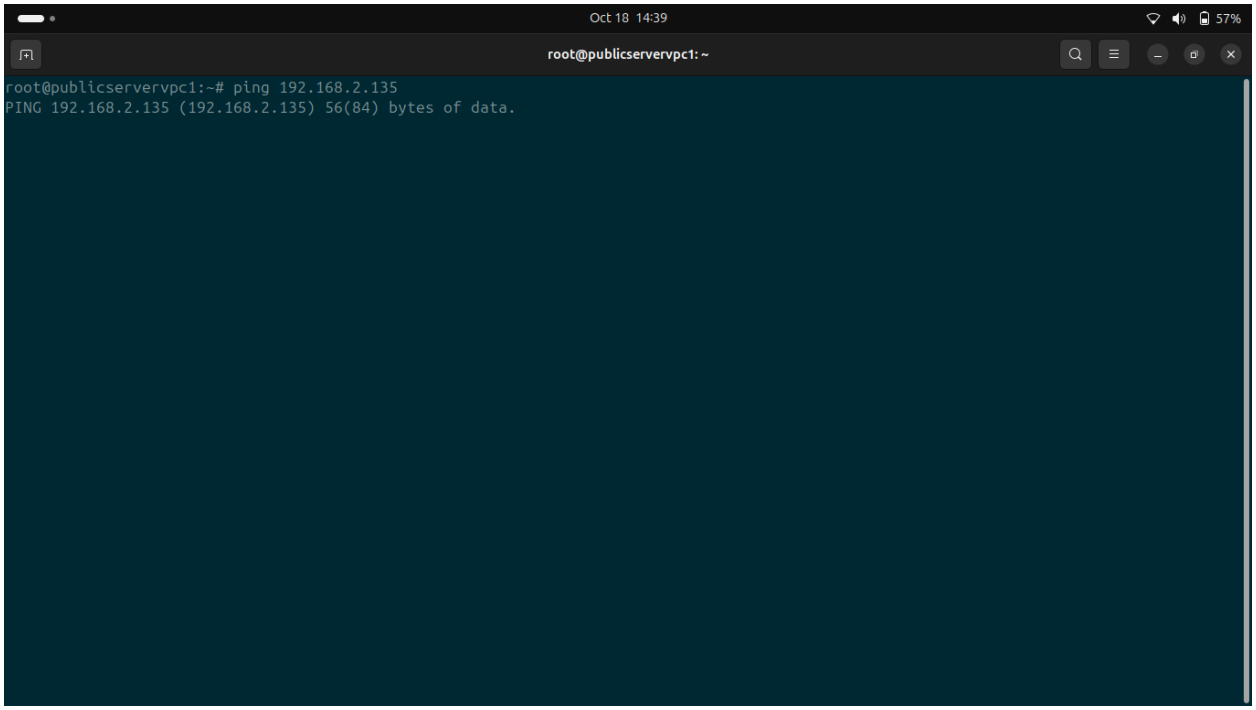


a) **Here both ec2 instances in same vpc1 can ping over private ip**



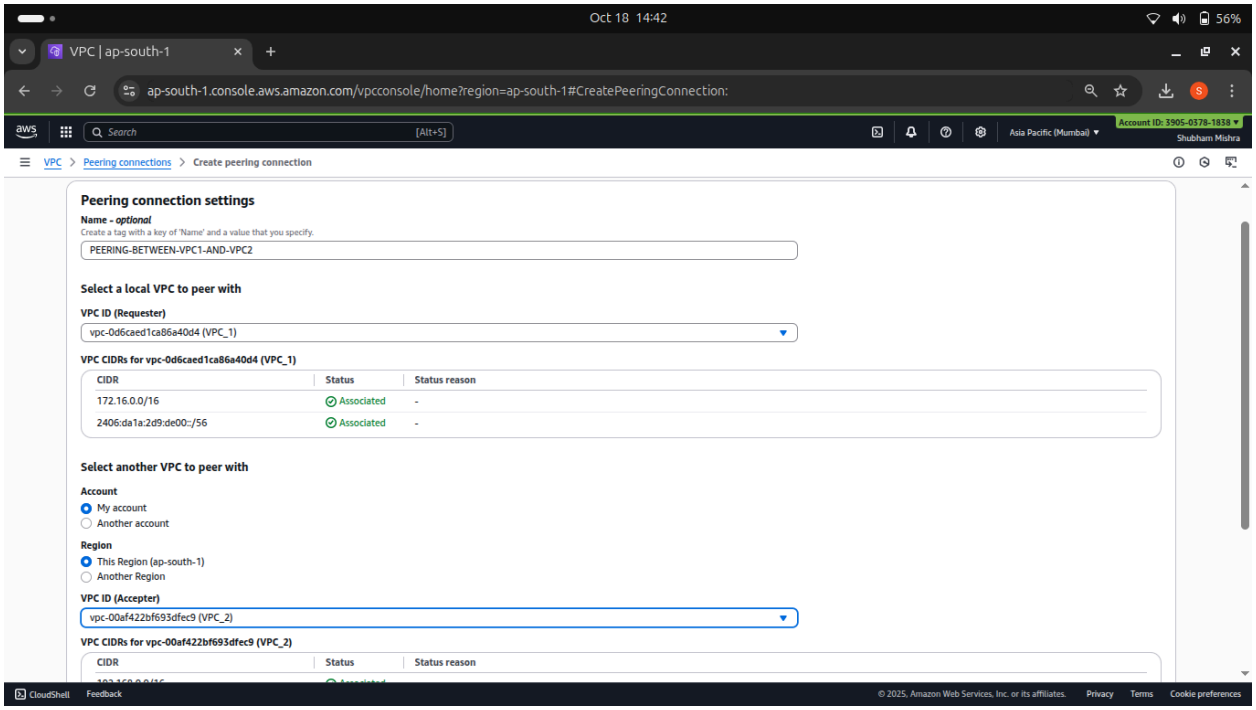


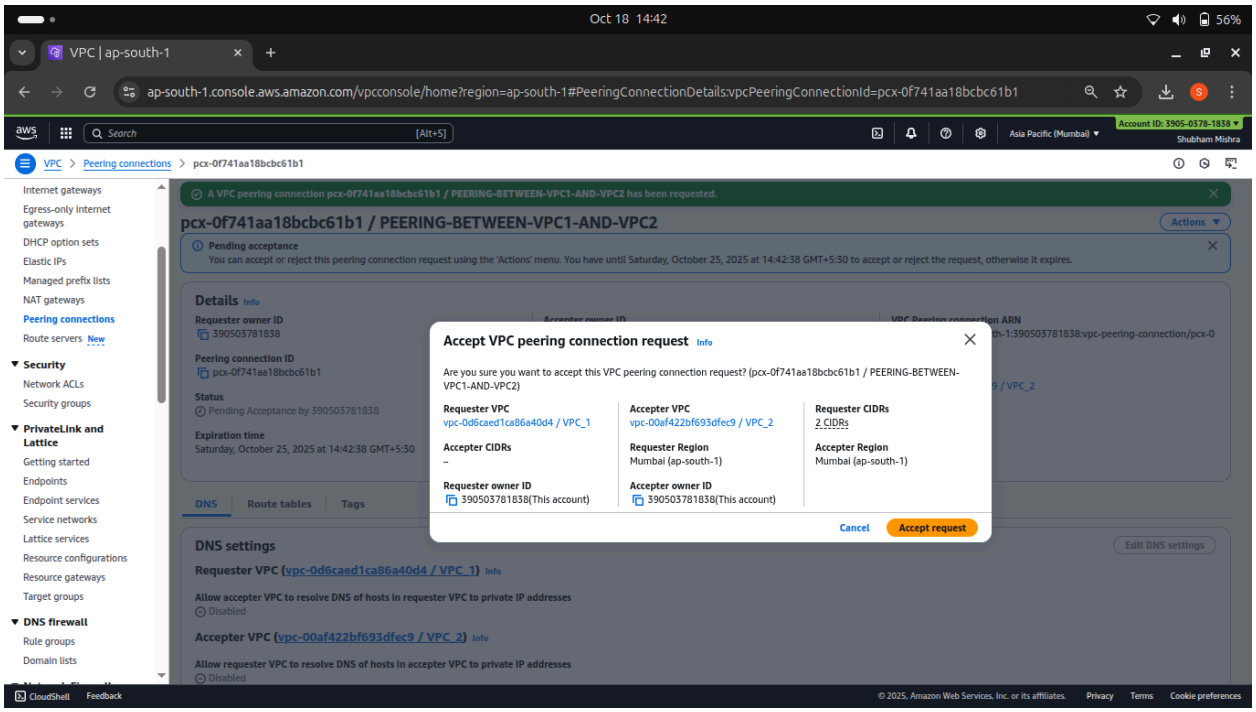
b) Here both instances in vpc2 can also ping over private ip



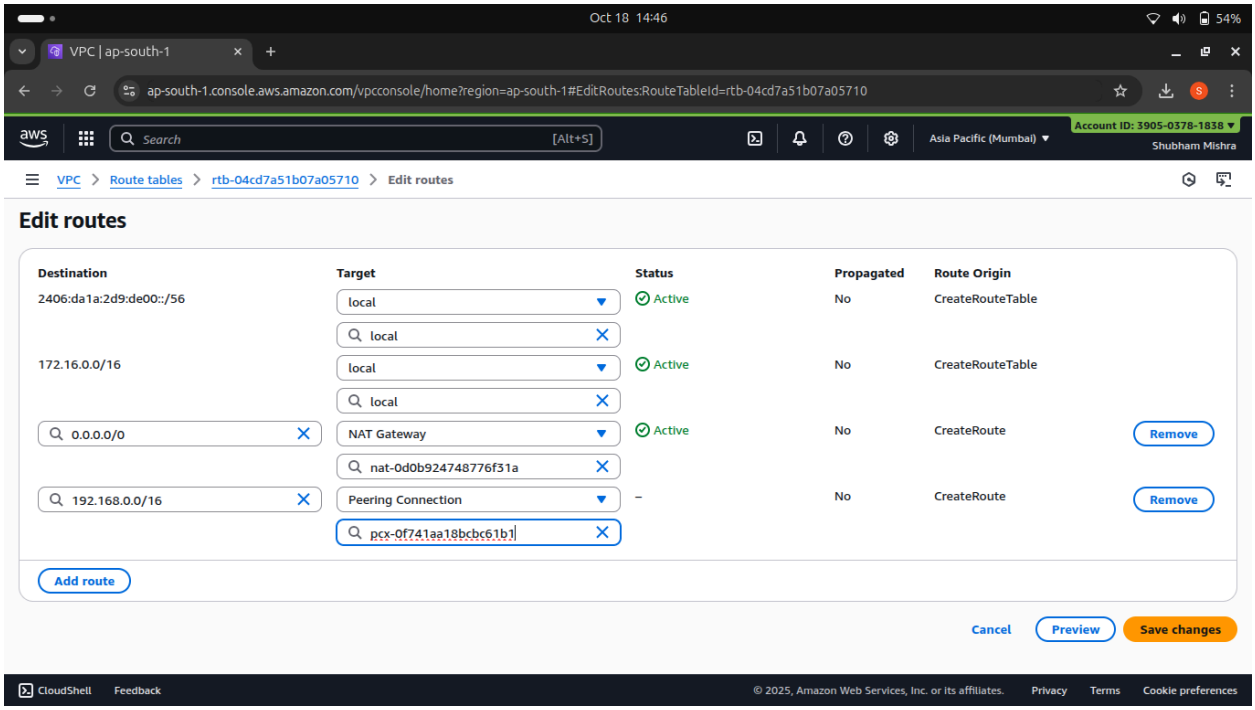
c) **But now when trying to ping over private ip in different vpc no response**

Step 8) Now we will establish vpc peering so that inter vpc communication can be established





Step 9) Now we will update route table for other vpc cidr block to go through vpc peering


Oct 18 14:46
54%
VPC | ap-south-1
ap-south-1.console.aws.amazon.com/vpcconsole/home?region=ap-south-1#EditRoutes:RouteTableId=rtb-04cd7a51b07a05710
Search
[Alt+S]
Asia Pacific (Mumbai)
Account ID: 3905-0378-1838
Shubham Mishra
VPC > Route tables > rtb-04cd7a51b07a05710 > Edit routes
Edit routes
Destination
Target
Status
Propagated
Route Origin
2406:da1a:2d9:de00::/56
local
Active
No
CreateRouteTable
local
172.16.0.0/16
local
Active
No
CreateRouteTable
local
0.0.0.0/0
NAT Gateway
Active
No
CreateRoute
Remove
nat-0d0b924748776f31a
192.168.0.0/16
Peering Connection
–
No
CreateRoute
Remove
pcx-0f741aa18bcbc61b1
Add route
Cancel
Preview
Save changes
CloudShell
Feedback
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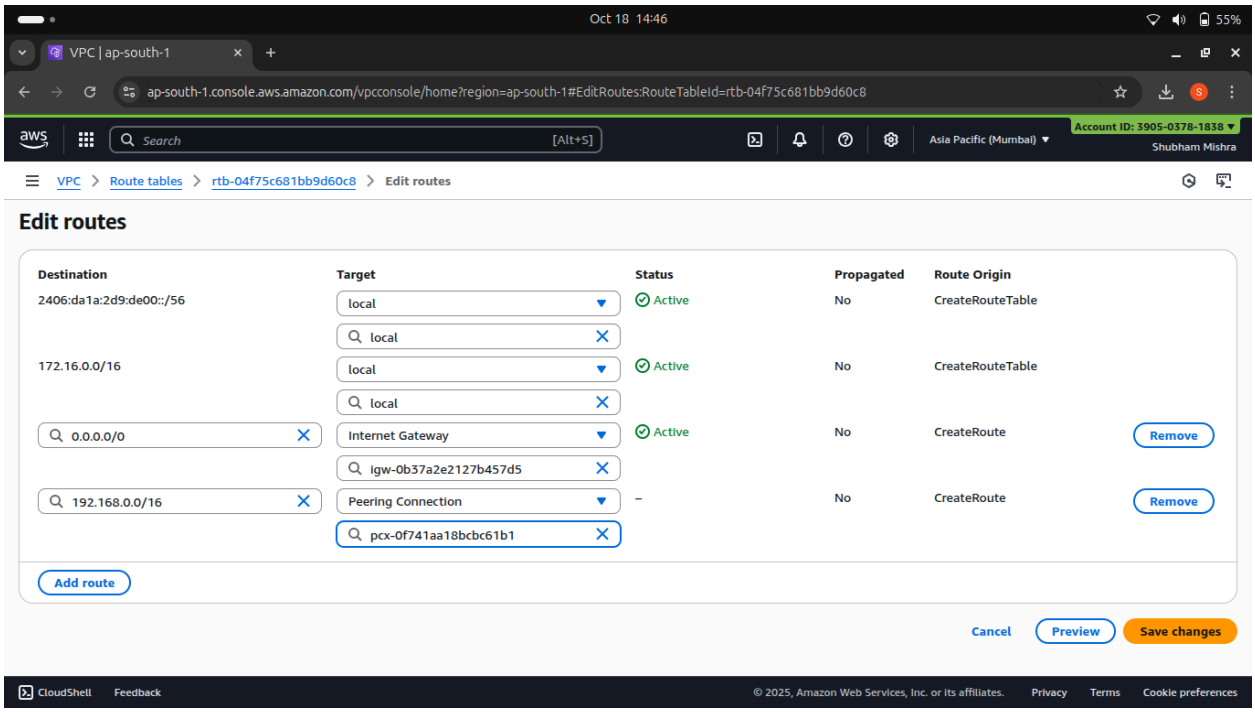
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VPC | ap-south-1
ap-south-1.console.aws.amazon.com/vpcconsole/home?region=ap-south-1#EditRoutes:RouteTableId=rtb-04f75c681bb9d60c8
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Account ID: 3905-0378-1838
Shubham Mishra
VPC > Route tables > rtb-04f75c681bb9d60c8 > Edit routes
Edit routes
Destination
Target
Status
Propagated
Route Origin
2406:da1a:2d9:de00::/56
local
Active
No
CreateRouteTable
local
172.16.0.0/16
local
Active
No
CreateRouteTable
local
0.0.0.0/0
Internet Gateway
Active
No
CreateRoute
Remove
igw-0b37a2e2127b457d5
192.168.0.0/16
Peering Connection
–
No
CreateRoute
Remove
pcx-0f741aa18bcbc61b1
Add route
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Preview
Save changes
CloudShell
Feedback
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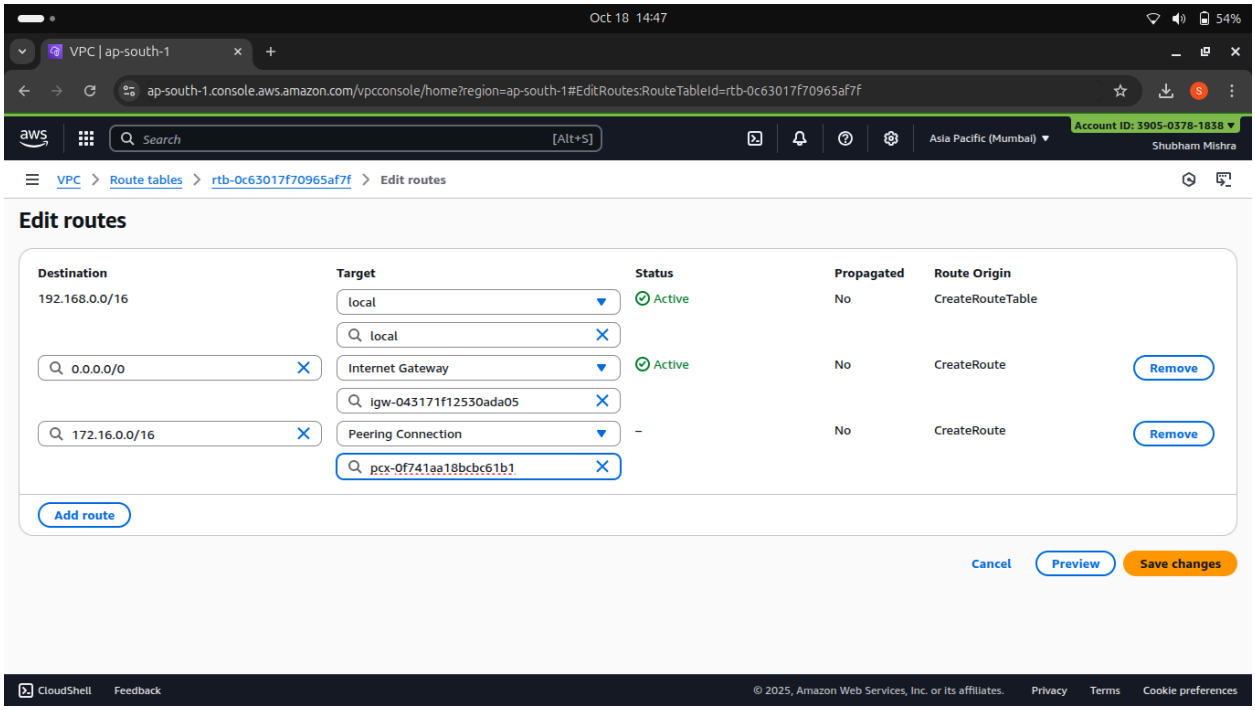
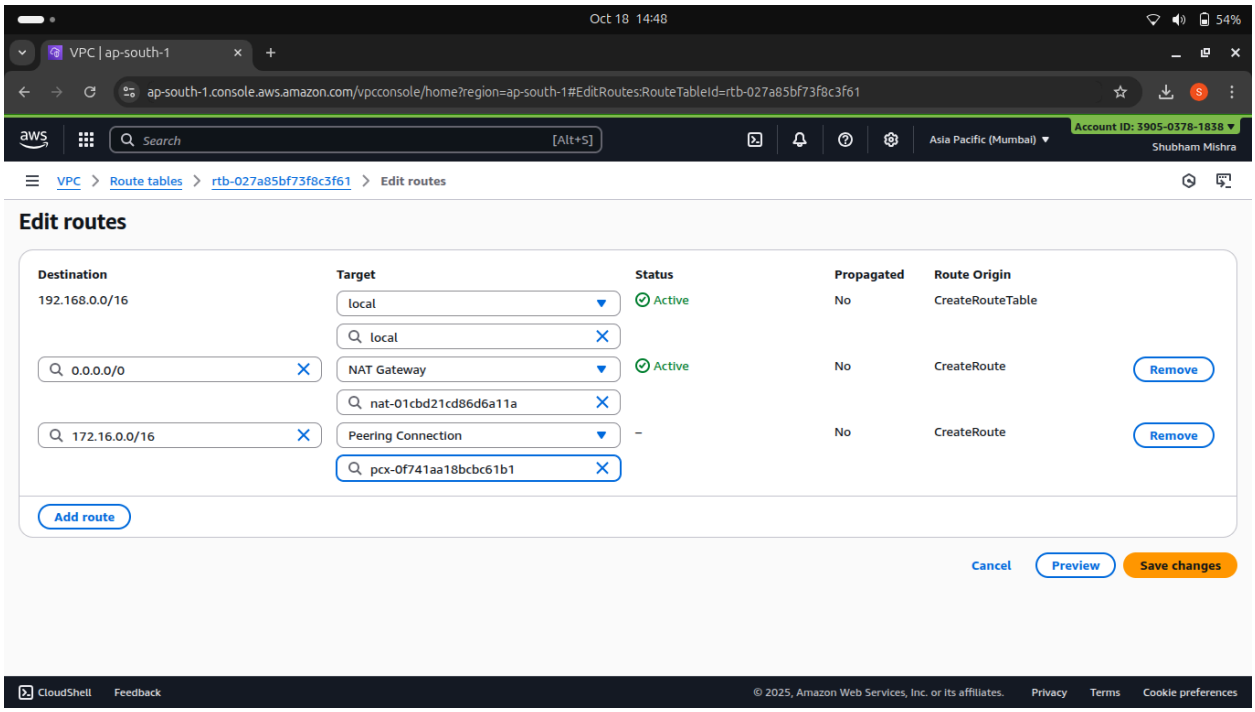
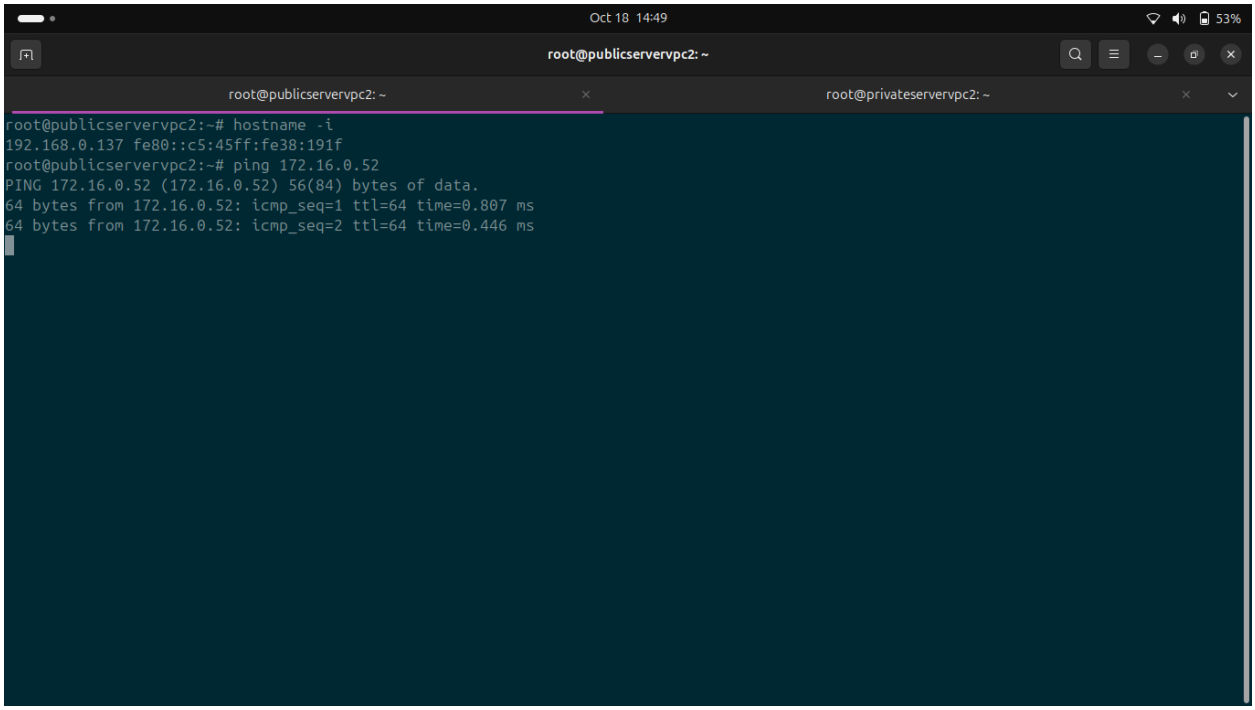
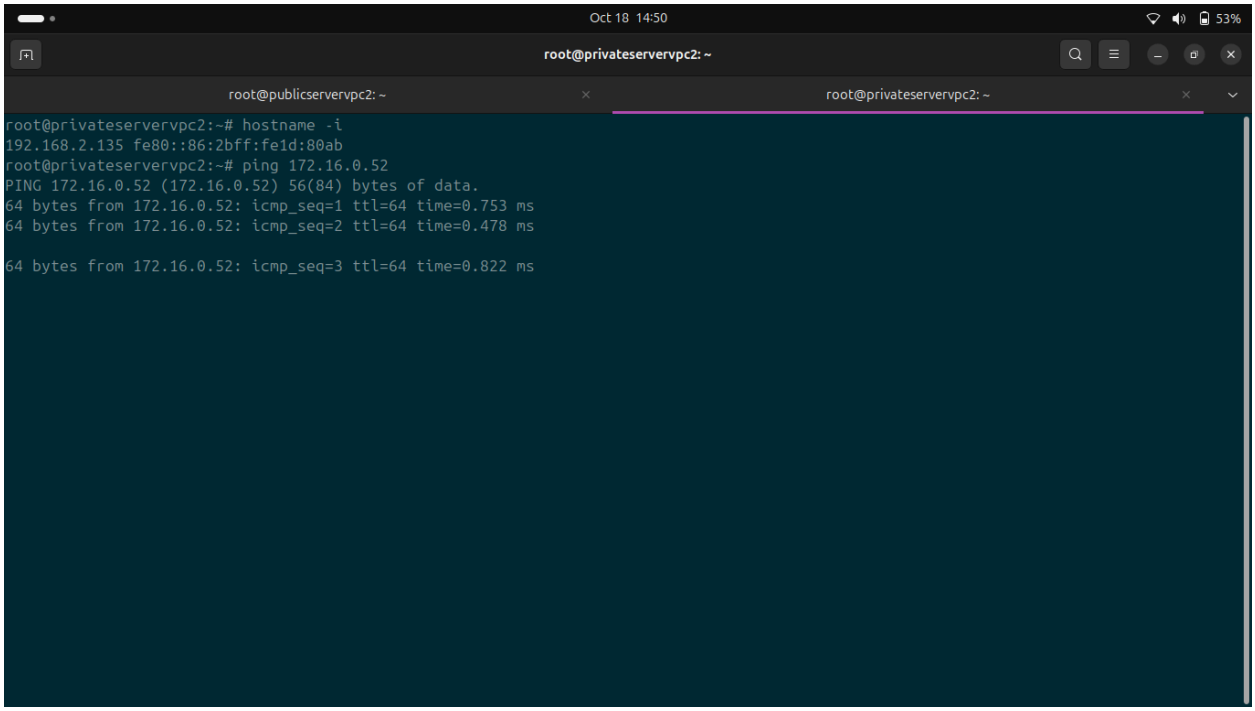




Step 10) Now we will test again ping on private ip of vpc1 instance from vpc2 instance and viceversa





Similarly ping on private ip of vpc2 instance from vpc1 instance successful

Vpc peering successfully implemented

✅ **Demo / Output**

- **Successful ping and SSH between instances in different VPCs**
- **Private IP-based communication verified**
- **Internet not used for cross-VPC traffic**

🌟 **Impact**

This project showcases my ability to design and implement secure, scalable, and cost-effective inter-VPC communication — a fundamental concept in Cloud Networking and DevOps architectures.