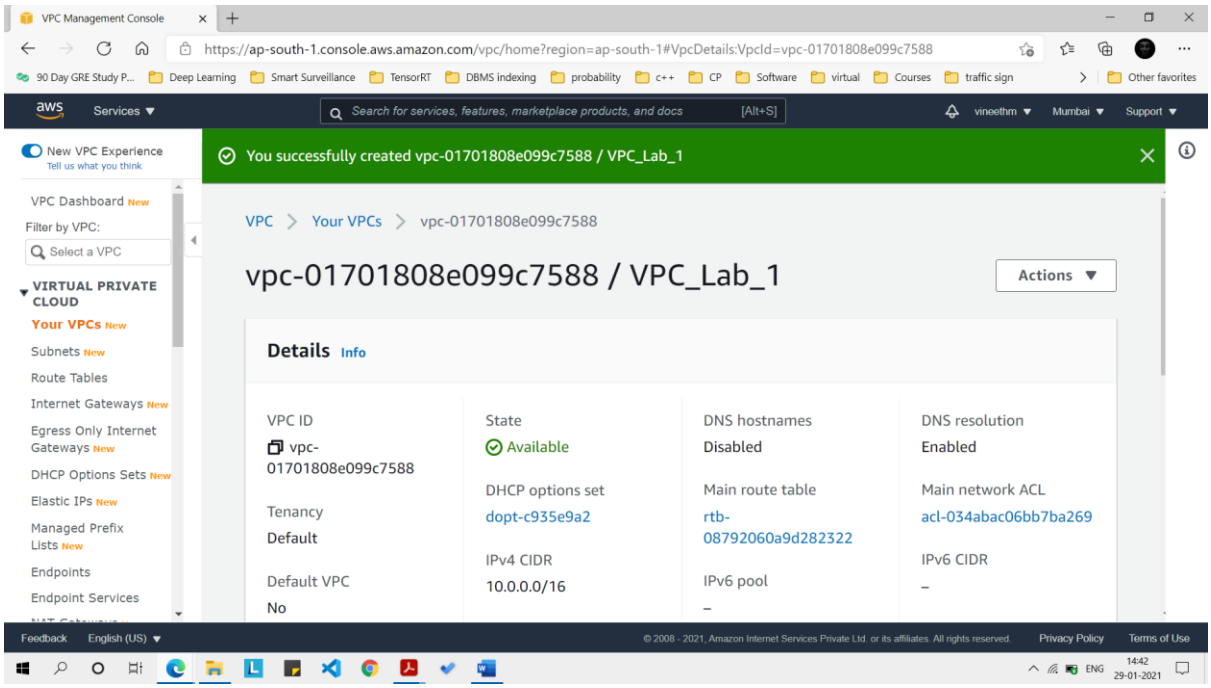
Lab Assignment – 03

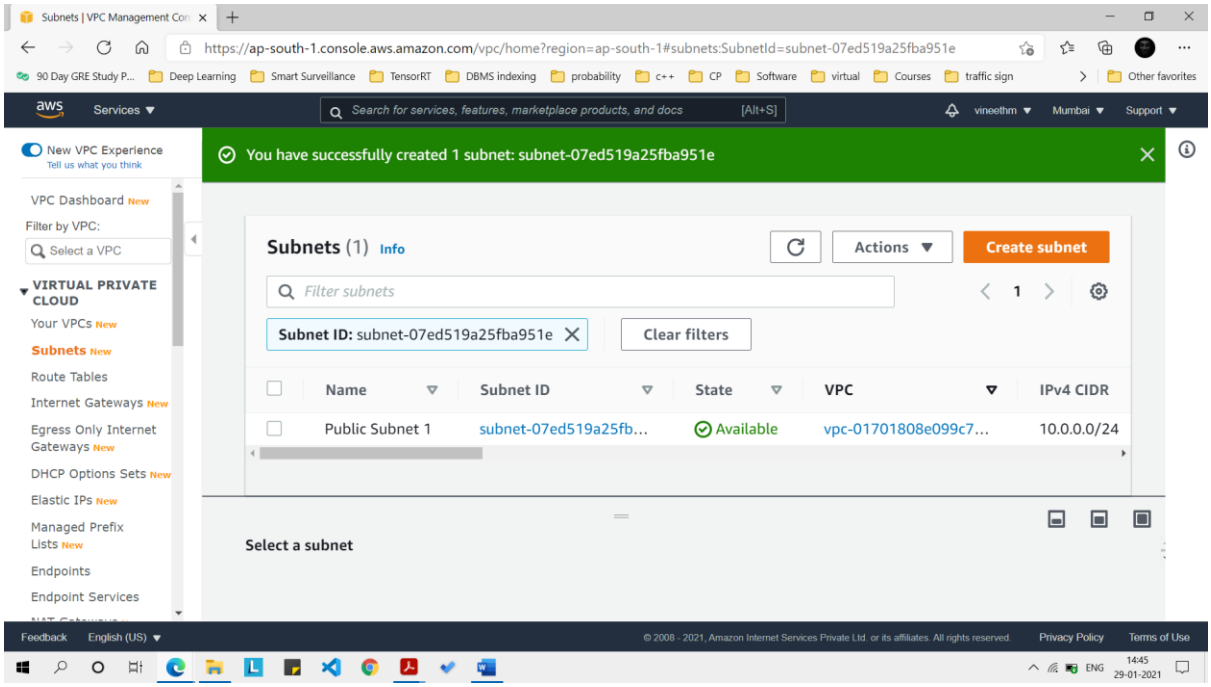
Lab Objectives:

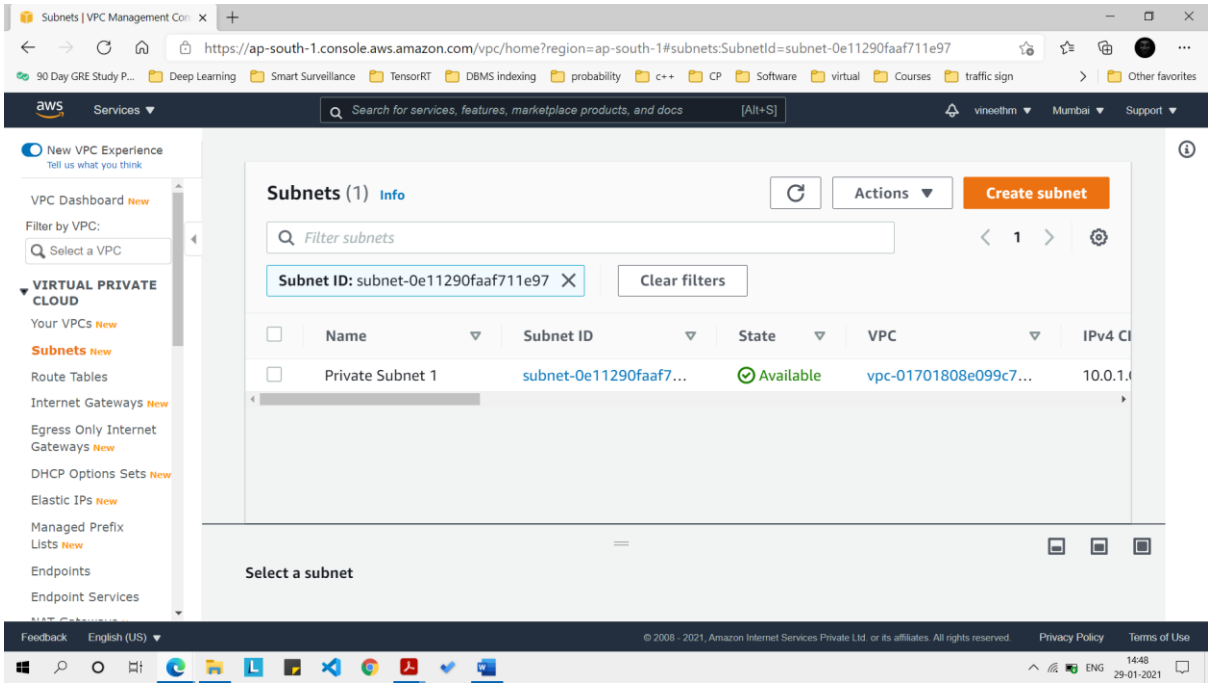
1. Create a VPC
2. Create Subnets
3. Configure a security group
4. Launch an EC2 instance into VPC

Task-1: Create AWS VPC in an availability zone at one region.

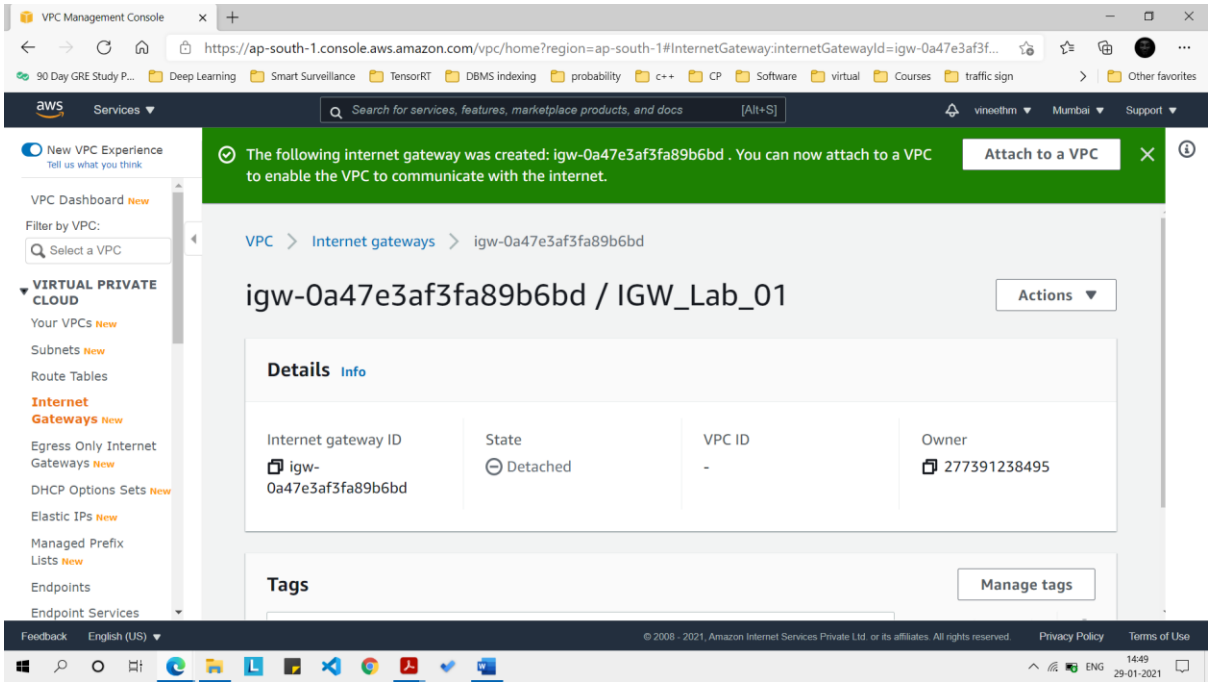


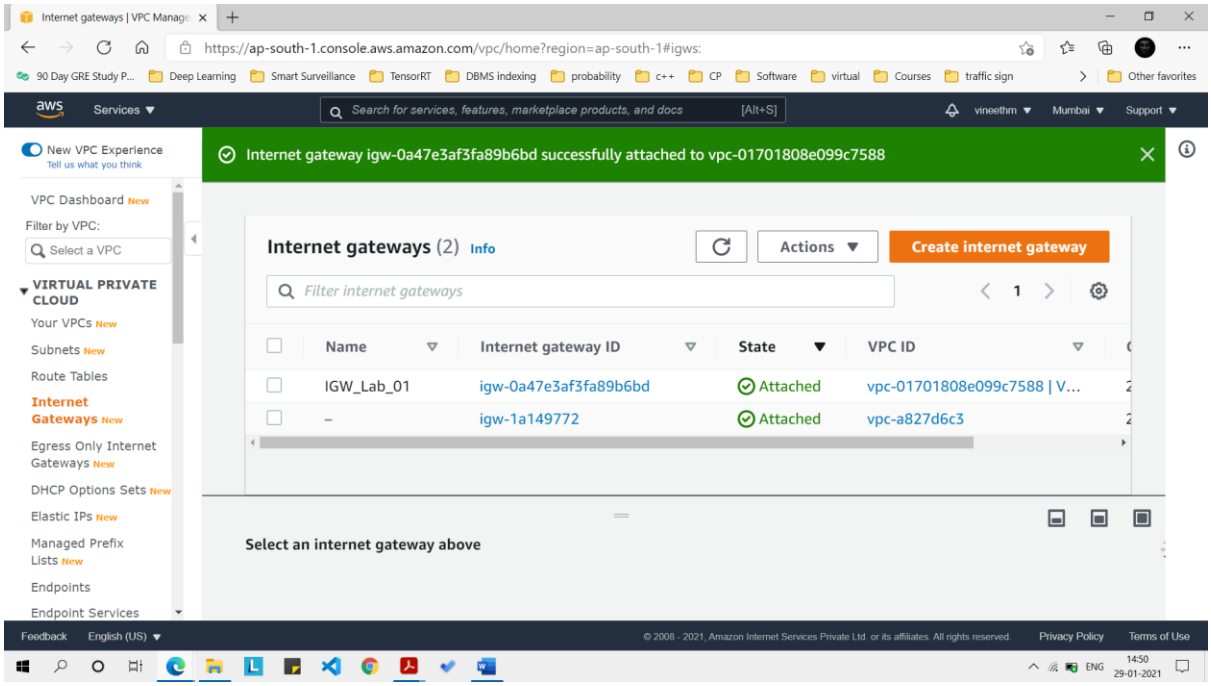
Task-2: Create one public subnet and one private subnet



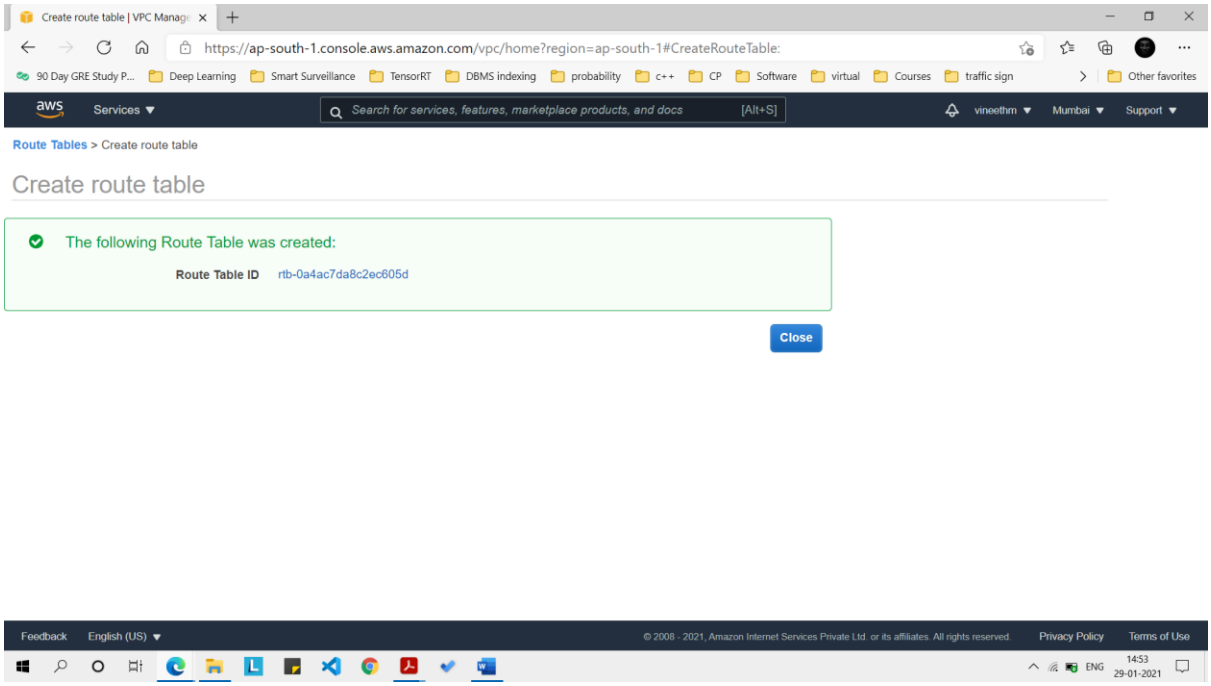


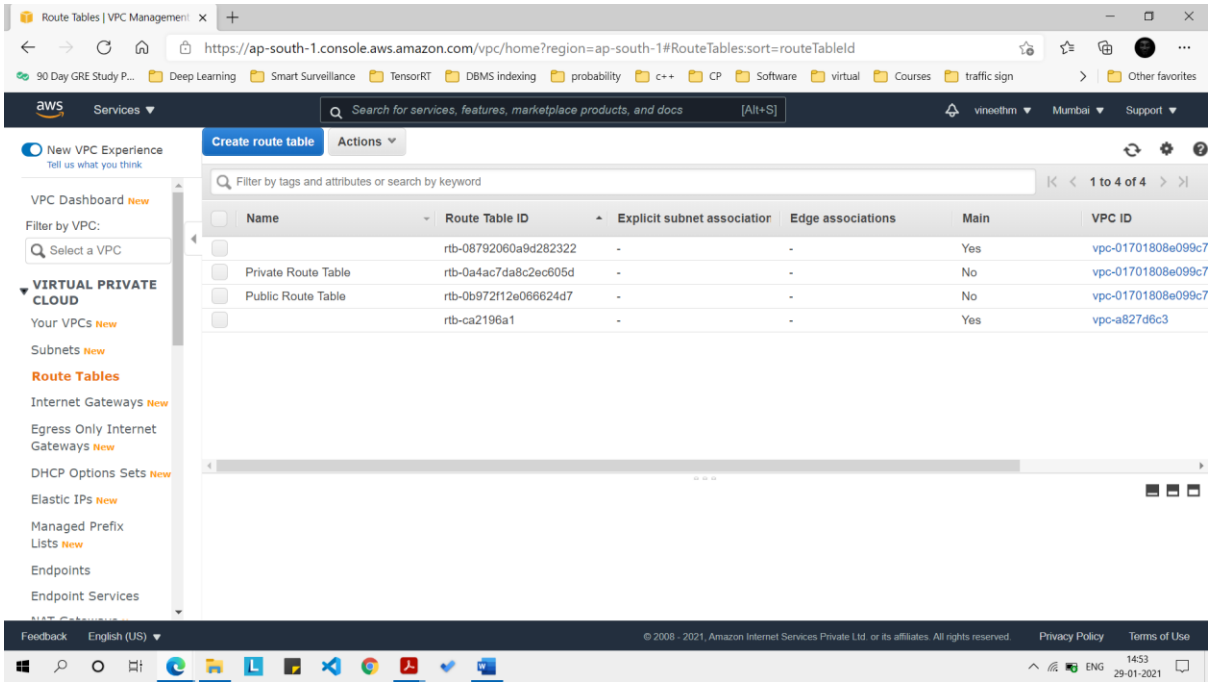
Task-3: Create Internet Gateway and attach it to VPC





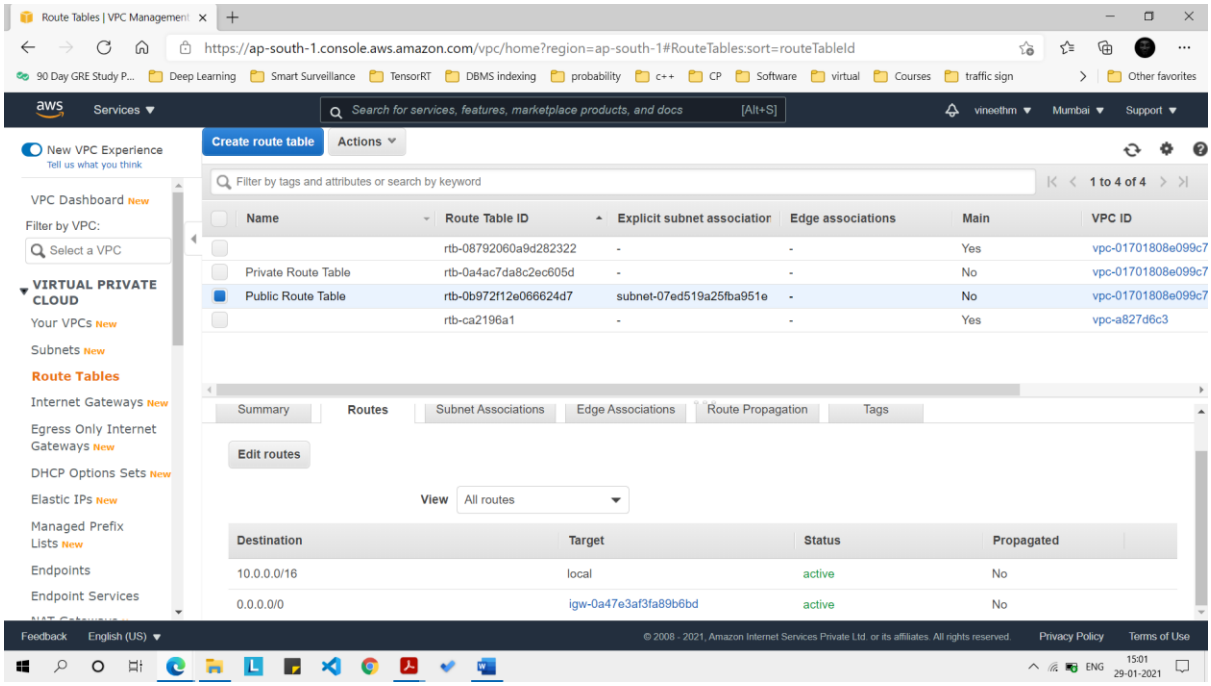
Task-4: Create route tables for public and private subnet



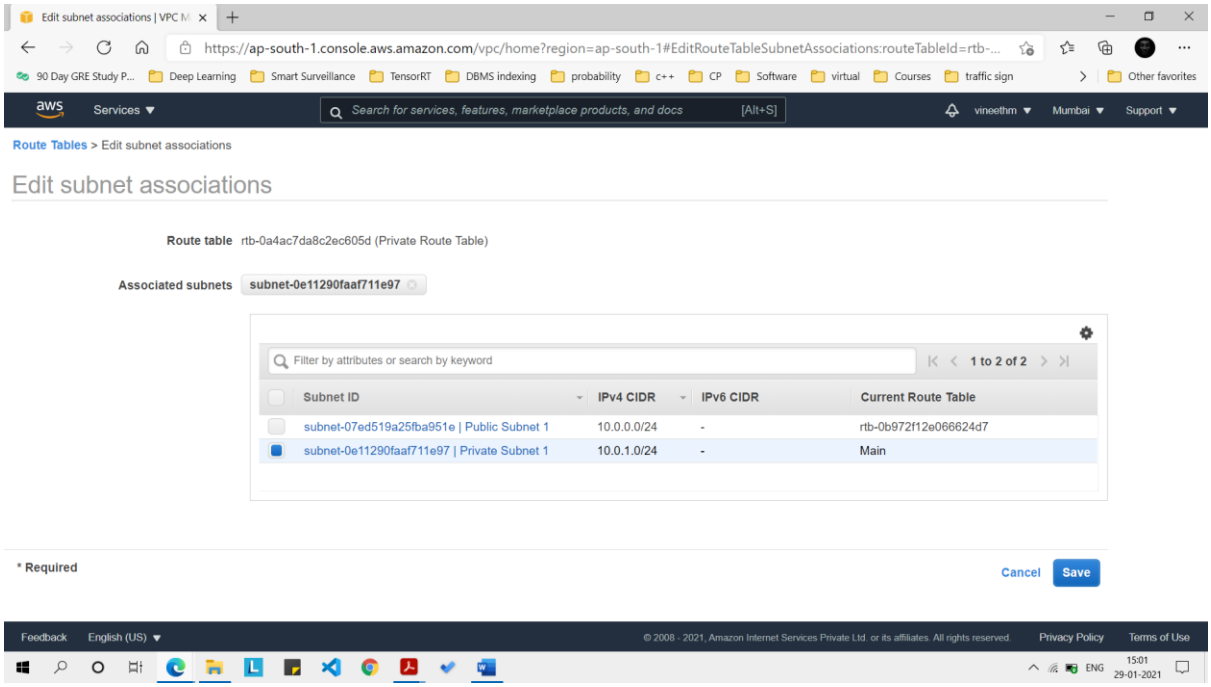


Task-5: configure route tables.

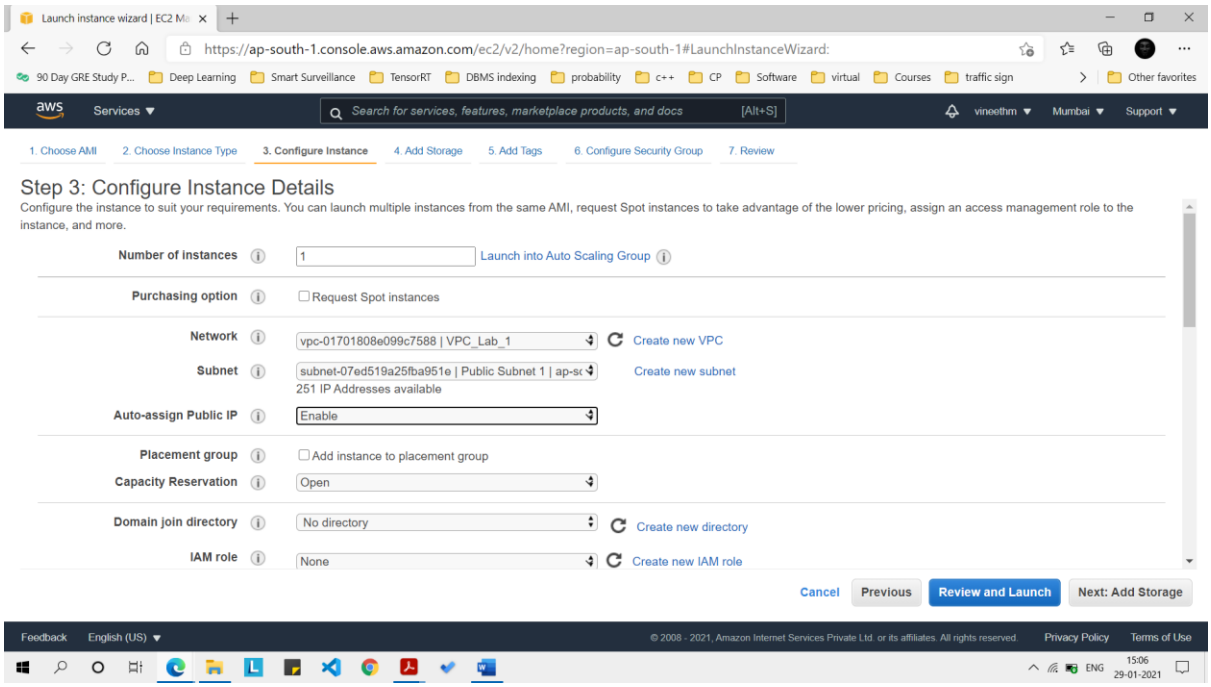
Public route table → IGW

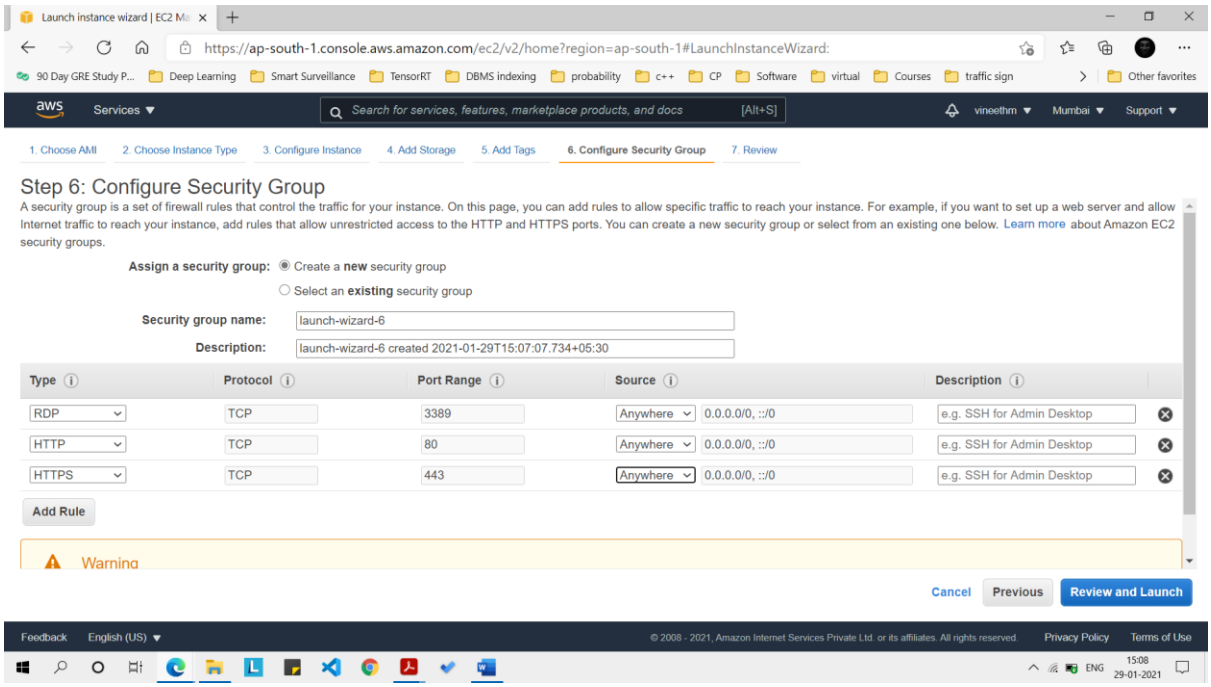


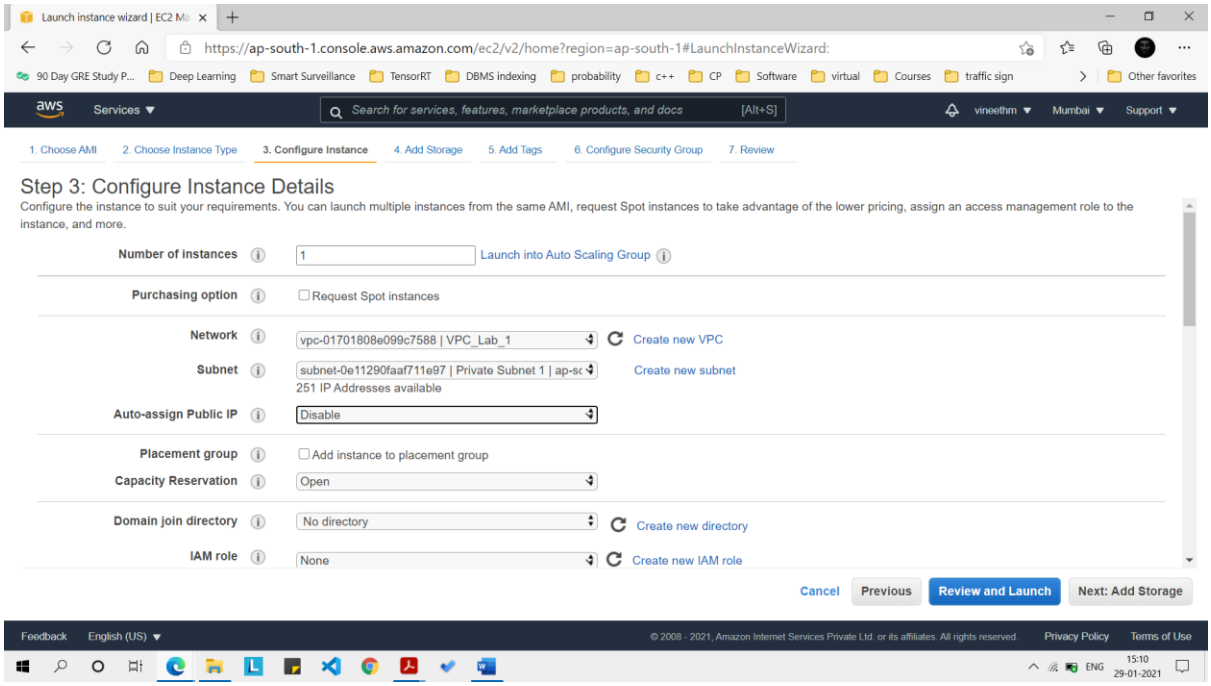
Private route table → NAT gateway



Task-6: Launch 2 different windows EC2 instances in each created subnet






Launch instance wizard | EC2 M
https://ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#LaunchInstanceWizard:
Services
Search for services, features, marketplace products, and docs [Alt+S]
vineethm
Mumbai
Support
1. Choose AMI
2. Choose Instance Type
3. Configure Instance
4. Add Storage
5. Add Tags
6. Configure Security Group
7. Review
Step 3: Configure Instance Details
Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.
Number of instances
1
Launch into Auto Scaling Group
Purchasing option
Request Spot instances
Network
vpc-01701808e099c7588 | VPC_Lab_1
Create new VPC
Subnet
subnet-0e11290faaf711e97 | Private Subnet 1 | ap-sc
Create new subnet
251 IP Addresses available
Auto-assign Public IP
Disable
Placement group
Add instance to placement group
Capacity Reservation
Open
Domain join directory
No directory
Create new directory
IAM role
None
Create new IAM role
Cancel
Previous
Review and Launch
Next: Add Storage
Feedback
English (US)
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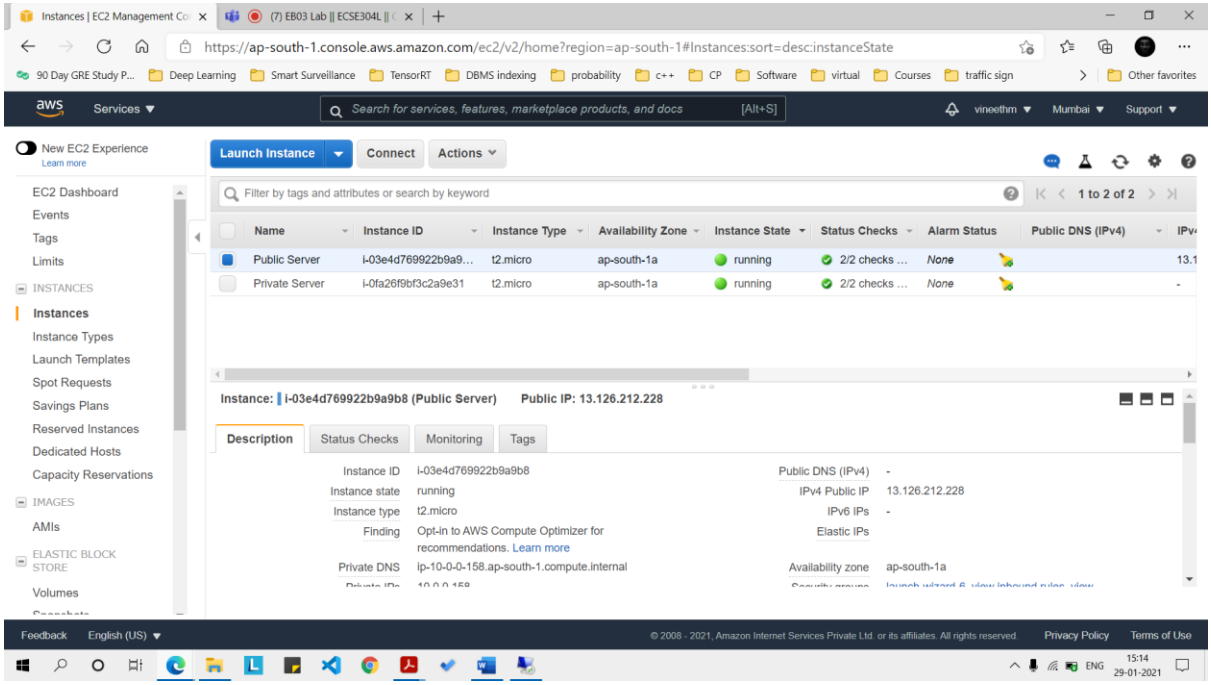
Instances | EC2 Management Co
(7) EB03 Lab || ECSE304L ||
https://ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#Instances:sort=desc:instanceState
Services
Search for services, features, marketplace products, and docs [Alt+S]
vineethm
Mumbai
Support
New EC2 Experience
Learn more
EC2 Dashboard
Events
Tags
Limits
INSTANCES
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
IMAGES
AMIs
ELASTIC BLOCK STORE
Volumes
Launch Instance
Connect
Actions
Filter by tags and attributes or search by keyword
1 to 2 of 2
Name
Instance ID
Instance Type
Availability Zone
Instance State
Status Checks
Alarm Status
Public DNS (IPv4)
Public Server
i-03e4d769922b9a9...
t2.micro
ap-south-1a
running
2/2 checks ...
None
Private Server
i-0fa26f9bf3c2a9e31
t2.micro
ap-south-1a
running
2/2 checks ...
None
Instance: i-03e4d769922b9a9b8 (Public Server)
Public IP: 13.126.212.228
Description
Status Checks
Monitoring
Tags
Instance ID
i-03e4d769922b9a9b8
Instance state
running
Instance type
t2.micro
Finding
Opt-in to AWS Compute Optimizer for recommendations. Learn more
Private DNS
ip-10-0-0-158.ap-south-1.compute.internal
Public DNS (IPv4)
IPv4 Public IP
13.126.212.228
IPv6 IPs
Elastic IPs
Availability zone
ap-south-1a
Feedback
English (US)
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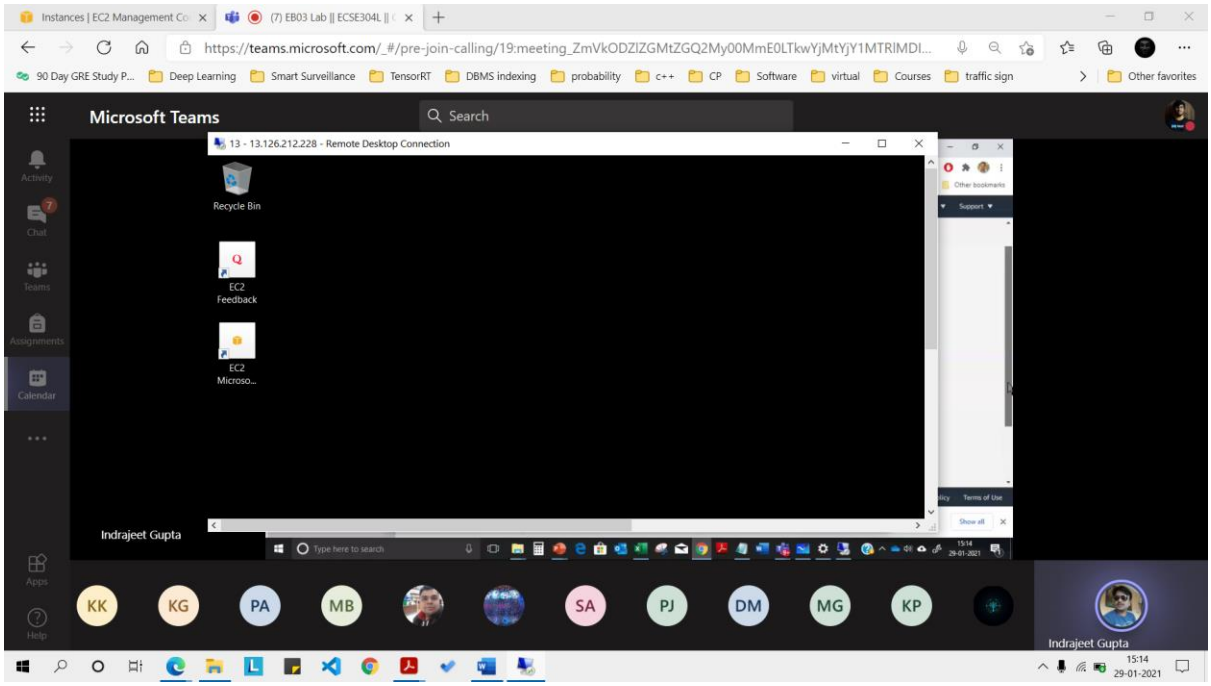
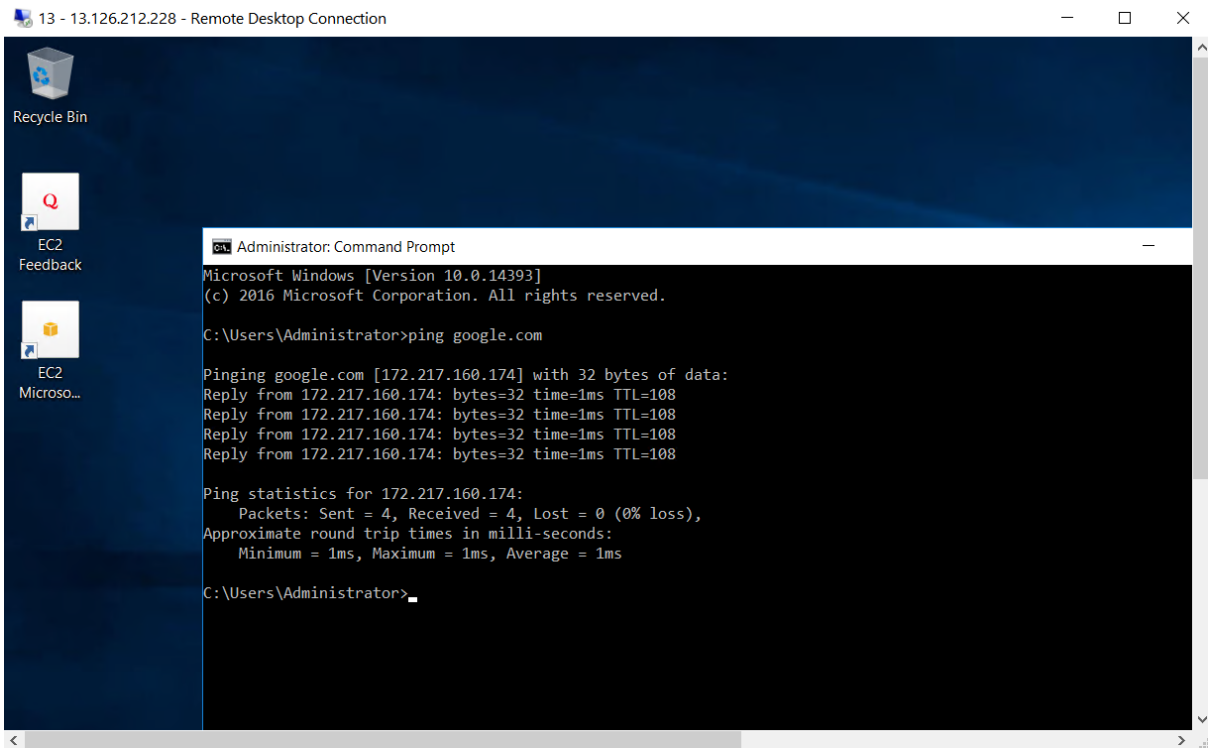
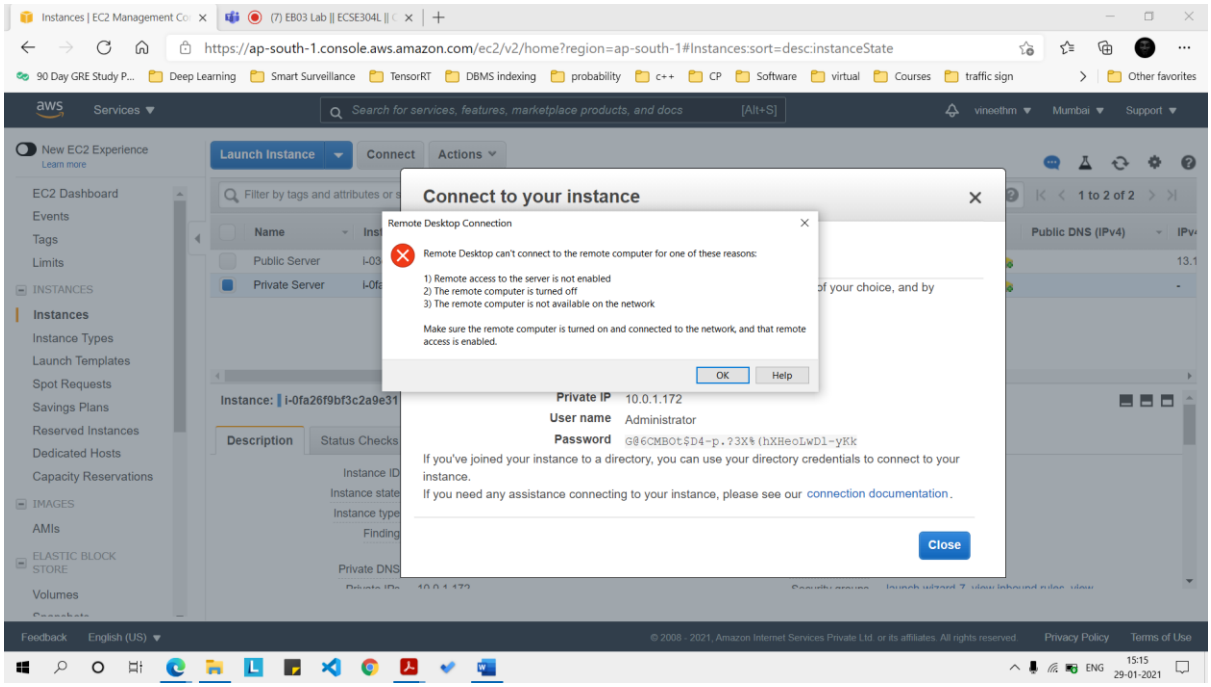
Task-7: Check the internet availability of the running EC2 instances.



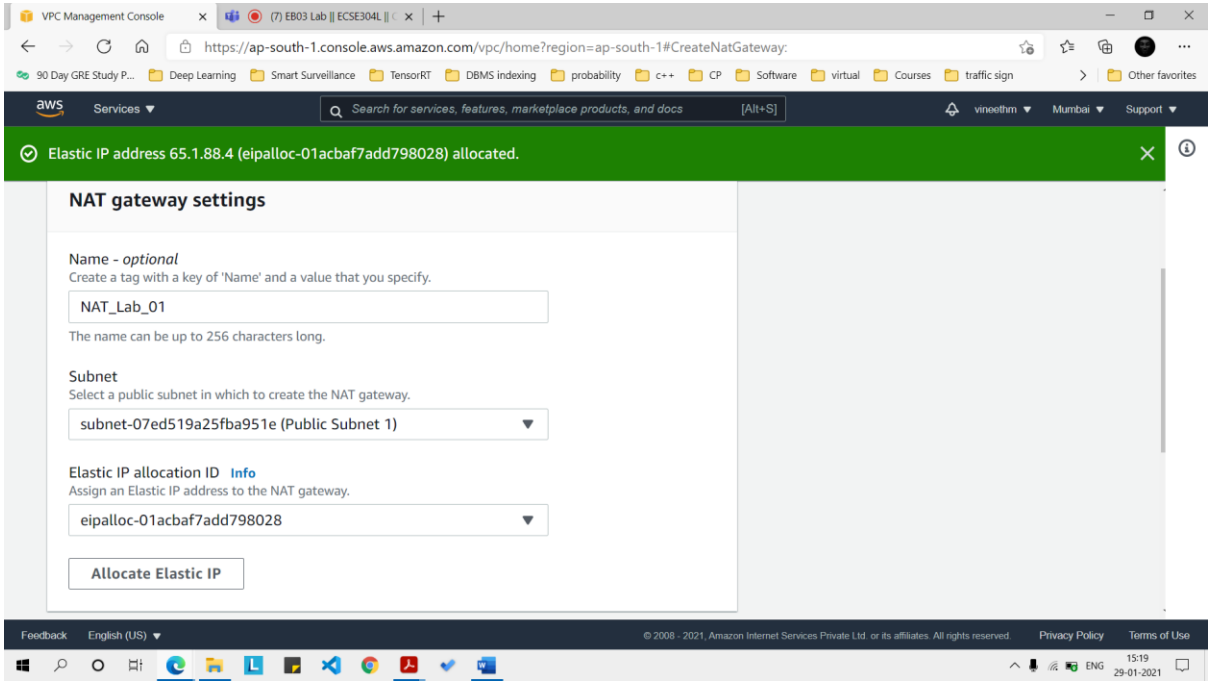


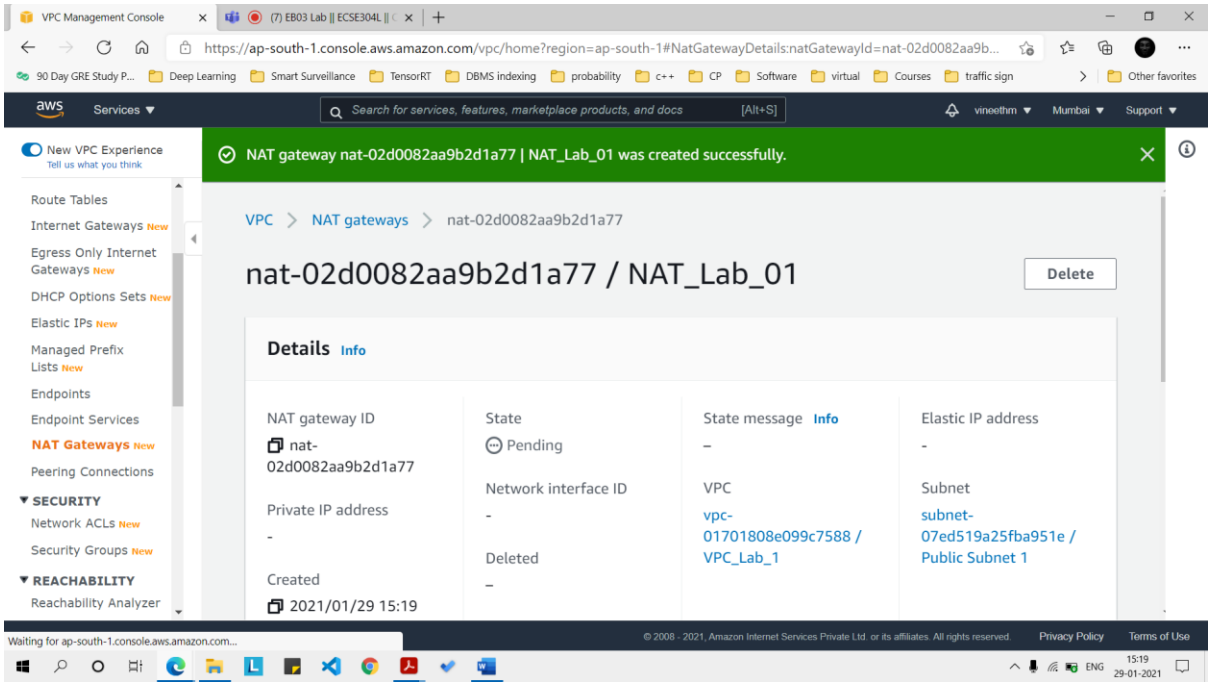
We get the below error when connecting to the instance in the private subnet because there is no route in the private route table.

To resolve this issue, we need to create the NAT Gateway and add it in the private route table.



Task-8: Create NAT Gateway




VPC Management Console
https://ap-south-1.console.aws.amazon.com/vpc/home?region=ap-south-1#NatGatewayDetails:natGatewayId=nat-02d0082aa9b...
Services
Search for services, features, marketplace products, and docs [Alt+S]
vineethm
Mumbai
Support
New VPC Experience
Tell us what you think
NAT gateway nat-02d0082aa9b2d1a77 | NAT_Lab_01 was created successfully.
Route Tables
Internet Gateways New
Egress Only Internet Gateways New
DHCP Options Sets New
Elastic IPs New
Managed Prefix Lists New
Endpoints
Endpoint Services
NAT Gateways New
Peering Connections
SECURITY
Network ACLs New
Security Groups New
REACHABILITY
Reachability Analyzer
VPC > NAT gateways > nat-02d0082aa9b2d1a77
nat-02d0082aa9b2d1a77 / NAT_Lab_01
Delete
Details Info
NAT gateway ID
nat-02d0082aa9b2d1a77
State
Pending
State message Info
-
Elastic IP address
-
Private IP address
-
Network interface ID
-
VPC
vpc-01701808e099c7588 / VPC_Lab_1
Subnet
subnet-07ed519a25fba951e / Public Subnet 1
Created
2021/01/29 15:19
Deleted
-
Waiting for ap-south-1.console.aws.amazon.com...
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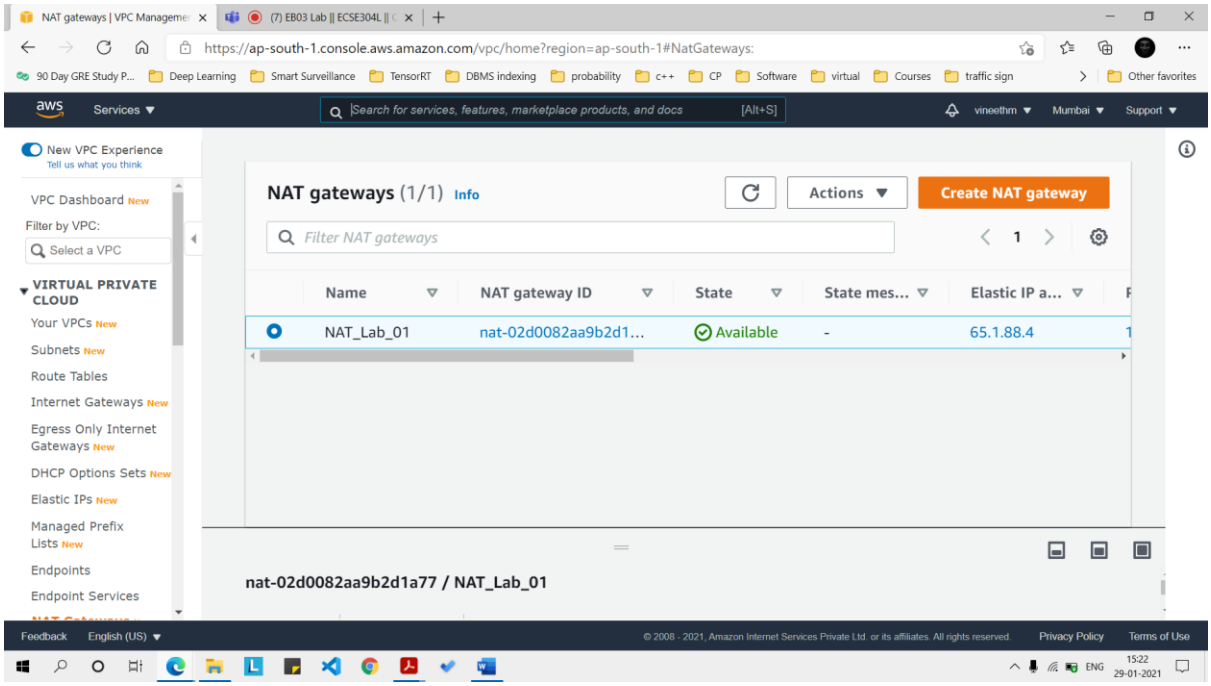
Privacy Policy
Terms of Use
15:19
29-01-2021


NAT gateways | VPC Management
https://ap-south-1.console.aws.amazon.com/vpc/home?region=ap-south-1#NatGateways:
Services
Search for services, features, marketplace products, and docs [Alt+S]
vineethm
Mumbai
Support
New VPC Experience
Tell us what you think
VPC Dashboard New
Filter by VPC:
Select a VPC
VIRTUAL PRIVATE CLOUD
Your VPCs New
Subnets New
Route Tables
Internet Gateways New
Egress Only Internet Gateways New
DHCP Options Sets New
Elastic IPs New
Managed Prefix Lists New
Endpoints
Endpoint Services
NAT gateways (1/1) Info
Actions
Create NAT gateway
Filter NAT gateways
Name
NAT gateway ID
State
State mes...
Elastic IP a...
NAT_Lab_01
nat-02d0082aa9b2d1...
Available
-
65.1.88.4
nat-02d0082aa9b2d1a77 / NAT_Lab_01
Feedback
English (US)
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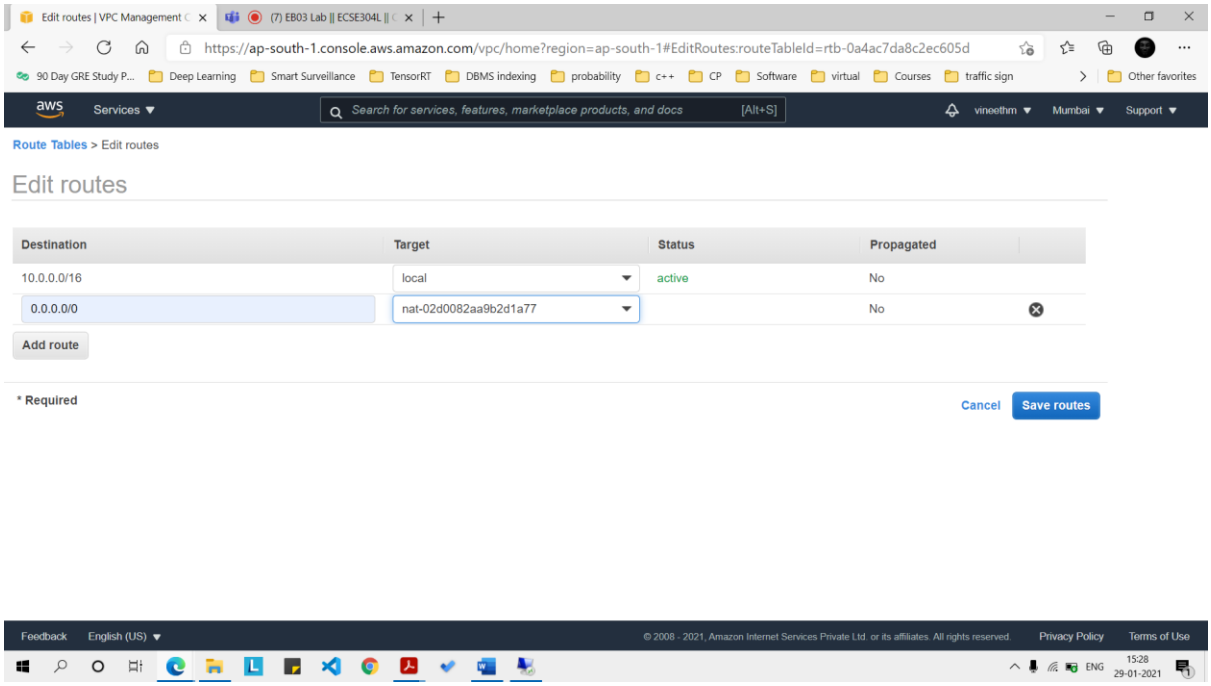
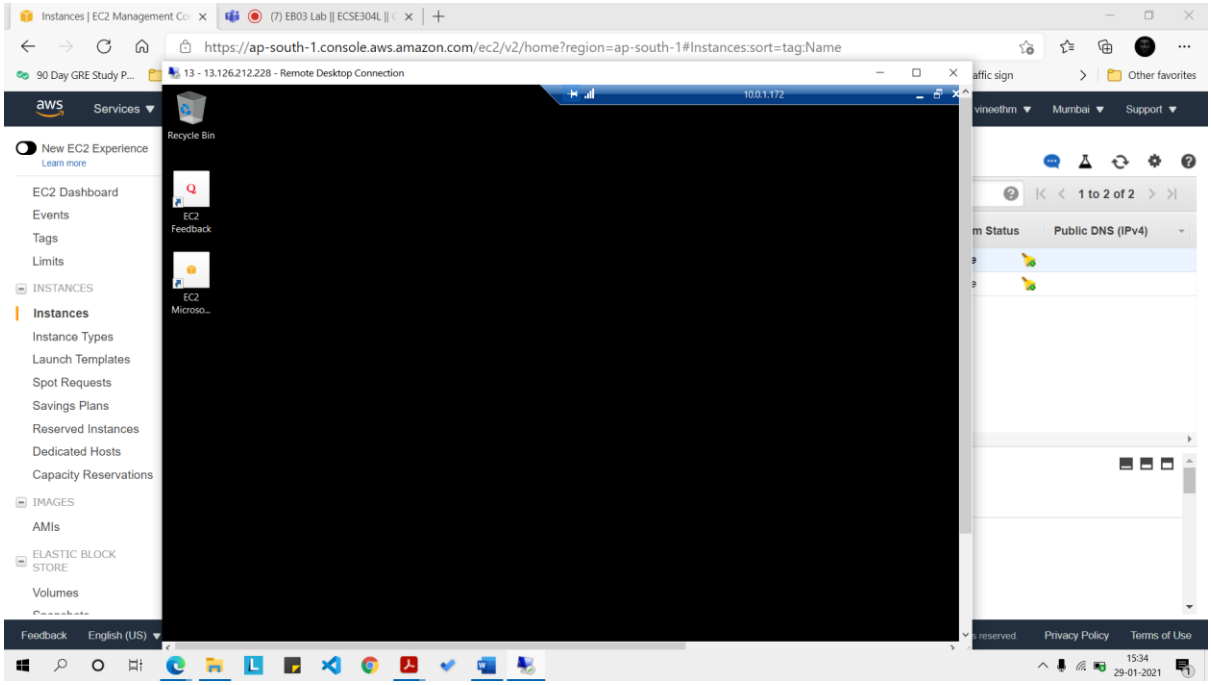
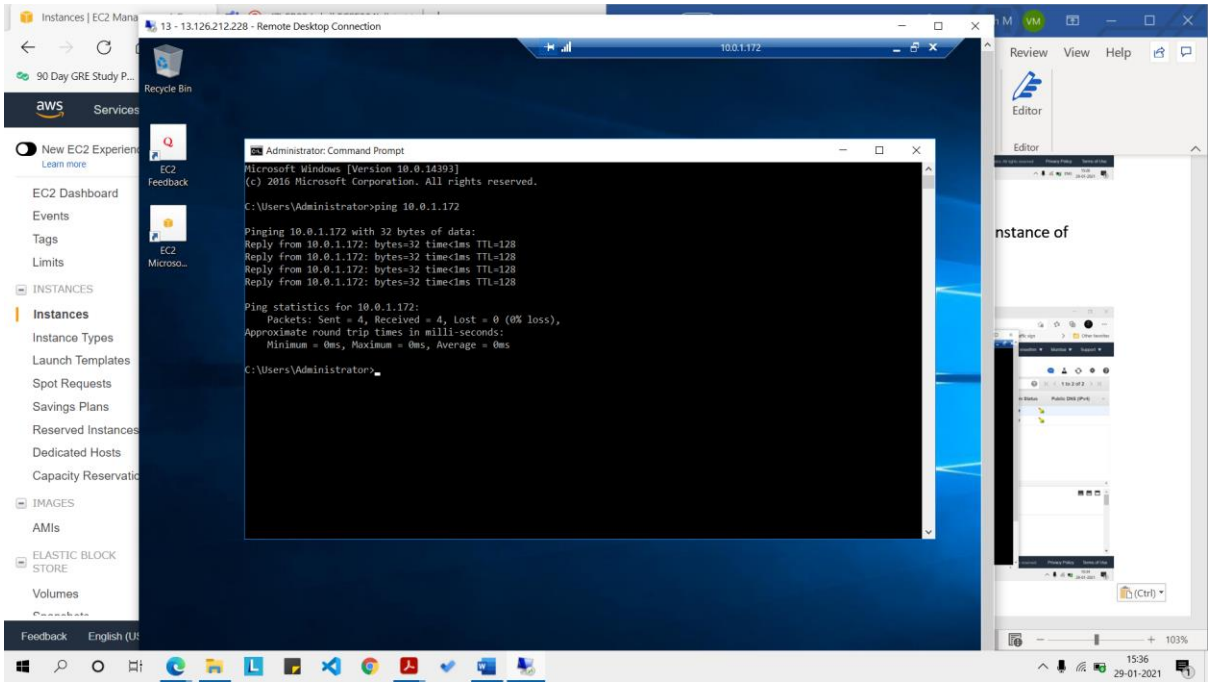
15:22
29-01-2021

Task-9: Attach the NAT Gateway to the private route table



Task-10: Via RDP of the public server, we connected to instance of private subnet.





We can notice the ping command to the private instance results in a success.

We cannot access this instance from outside as it is a part of the private subnet. The public instance can access it because they are a part of the same VPC.