Task 5.

Load Balancer & Auto Scaling

Configure Application Load Balancer (ALB)

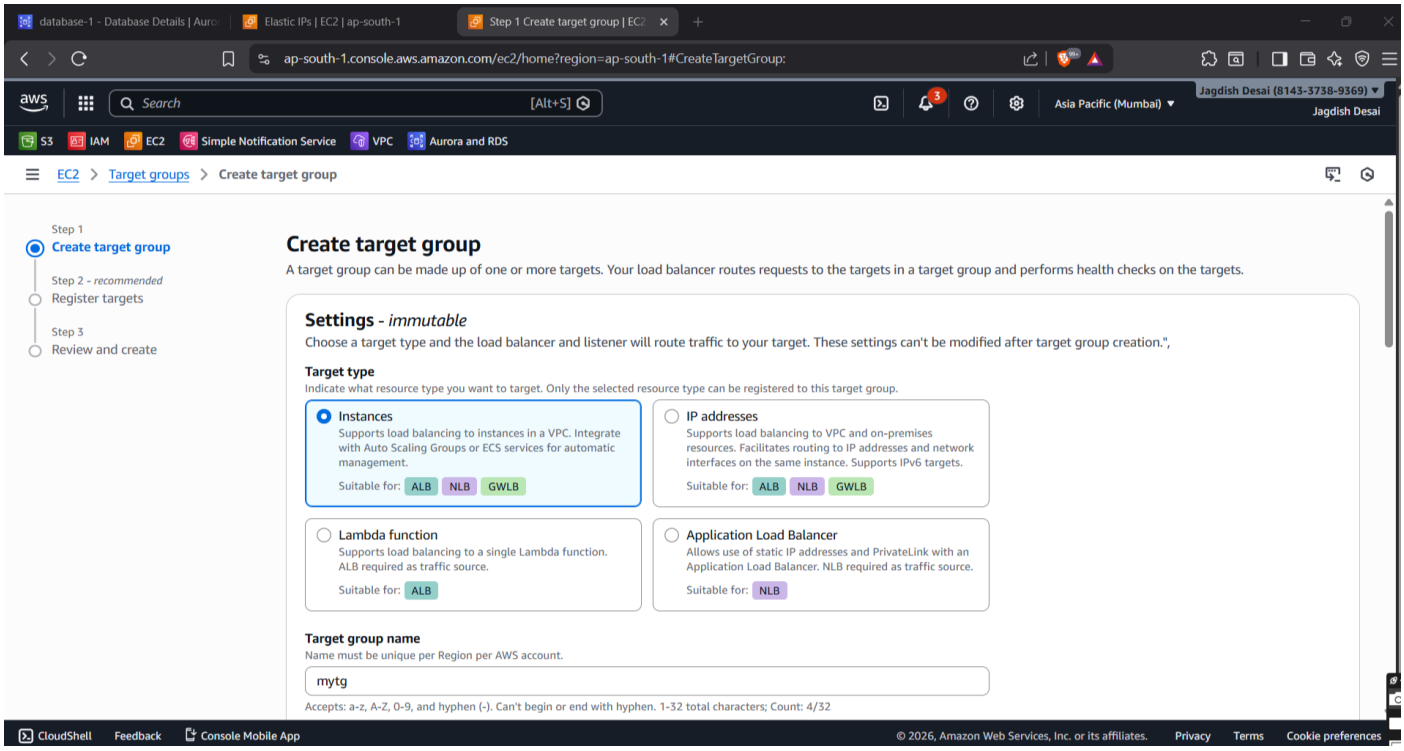
Attach Auto Scaling Group (ASG)

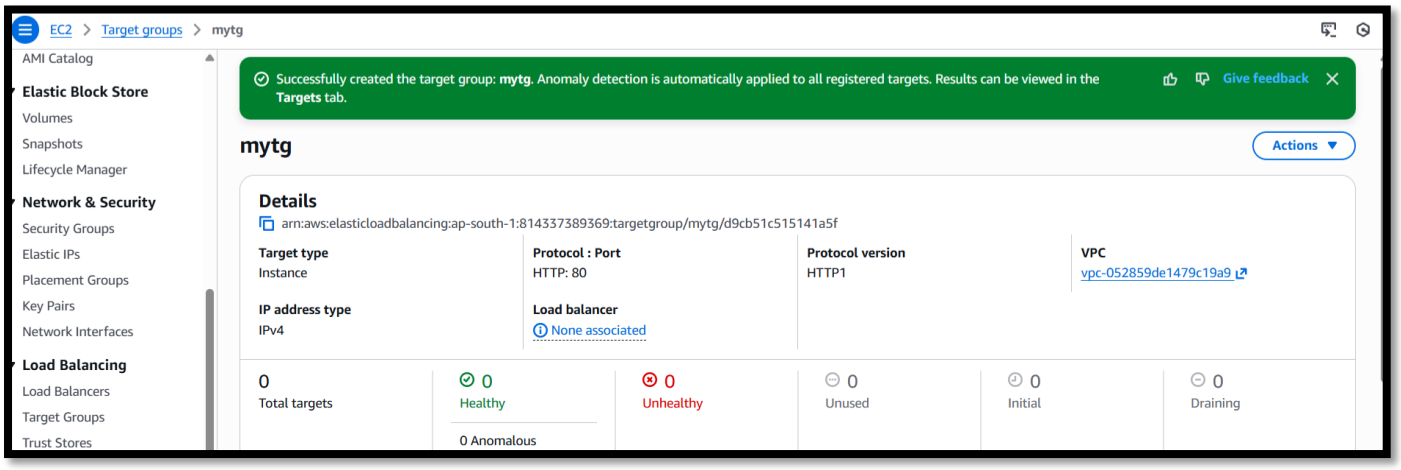
Scale based on CPU utilization

Steps:

Step 1: Create Target Group mytg

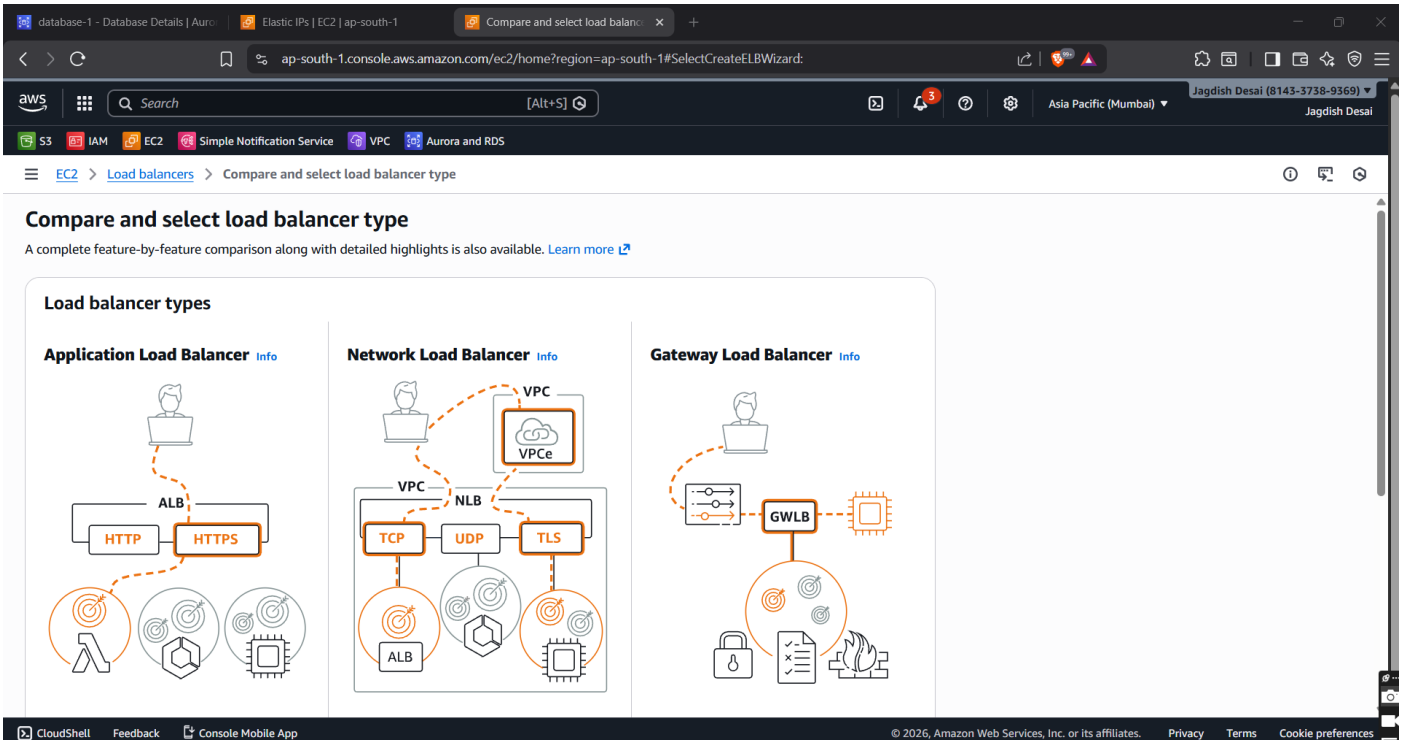
1. **EC2 → Target Groups → clicking on Create**



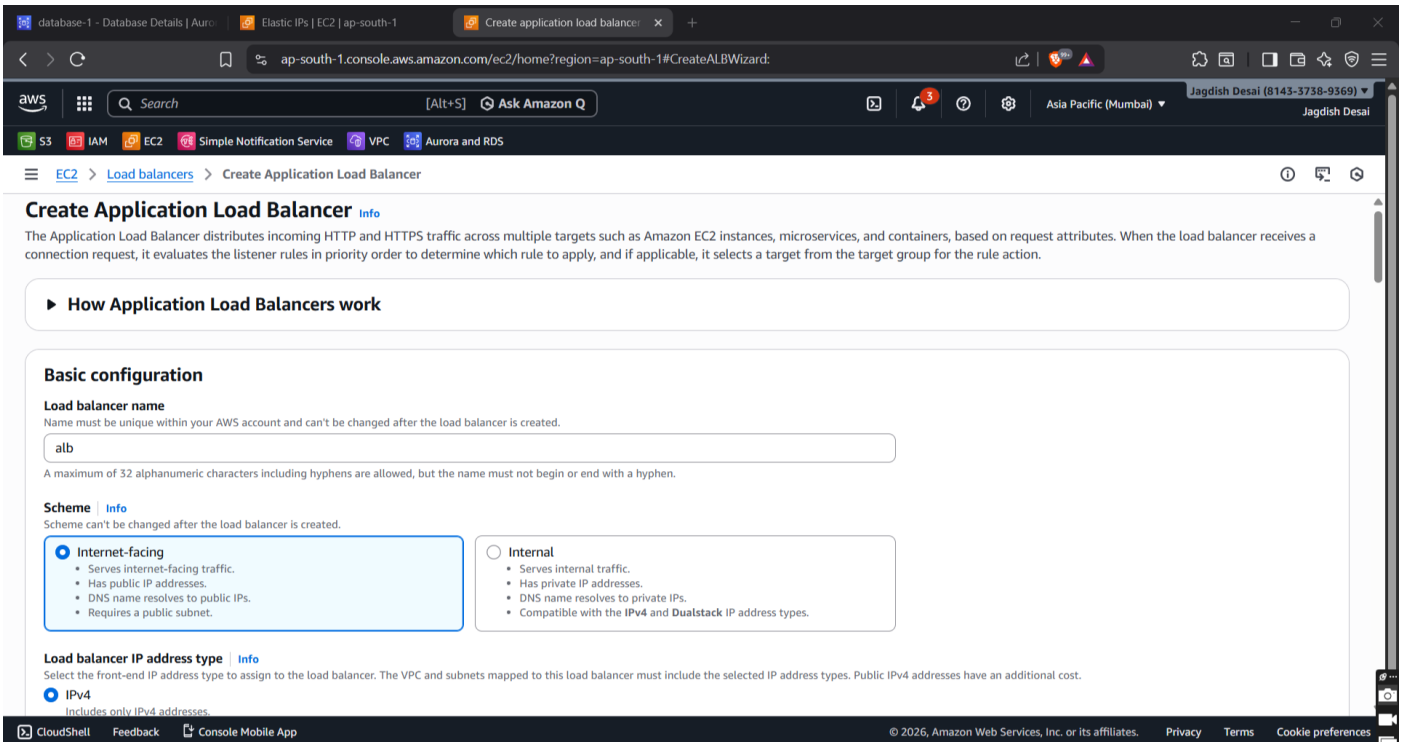


Step 2: Create Application Load Balancer

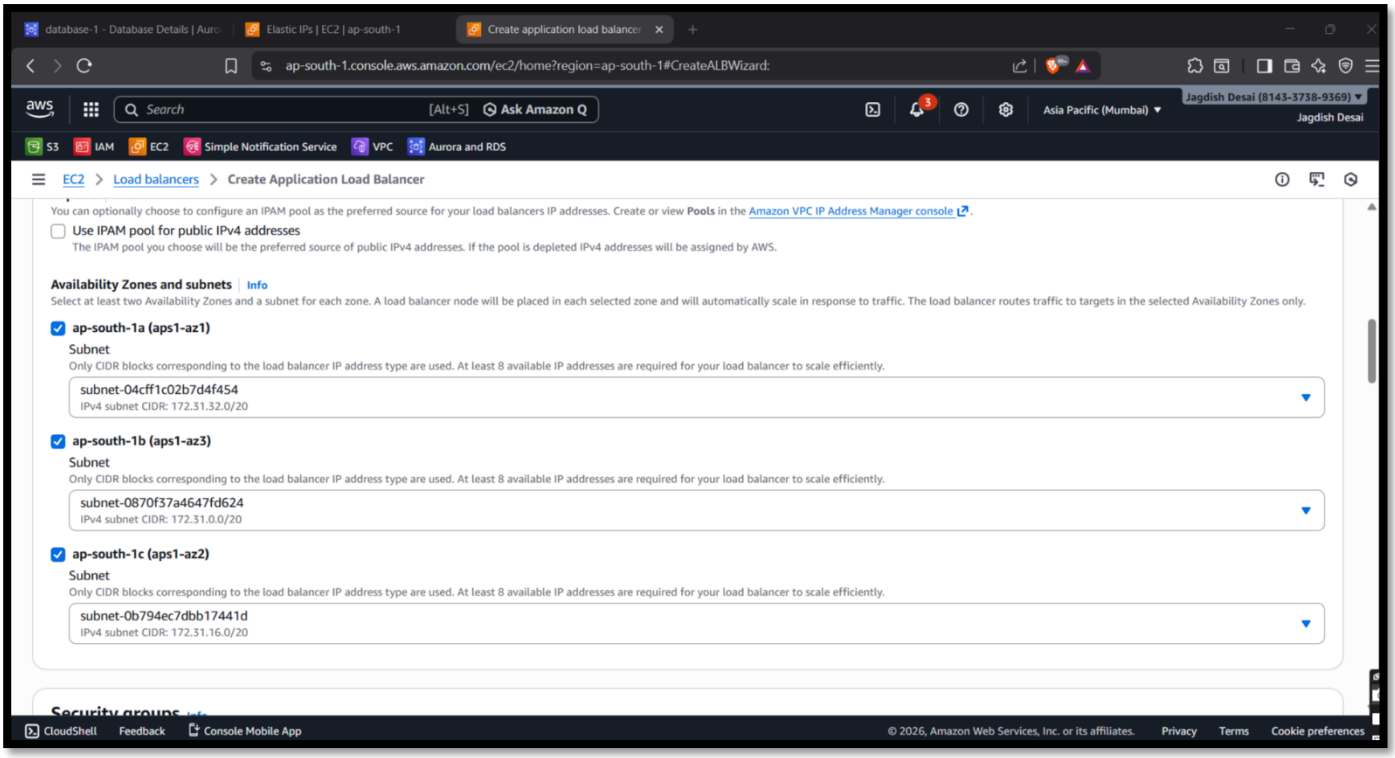
EC2 → Load Balancers → Create



Select application load balancer and click on create.



- Select at least two Availability Zones and a subnet for each zone. A load balancer node will be placed in each selected zone and will automatically scale in response to traffic. The load balancer routes traffic to targets in the



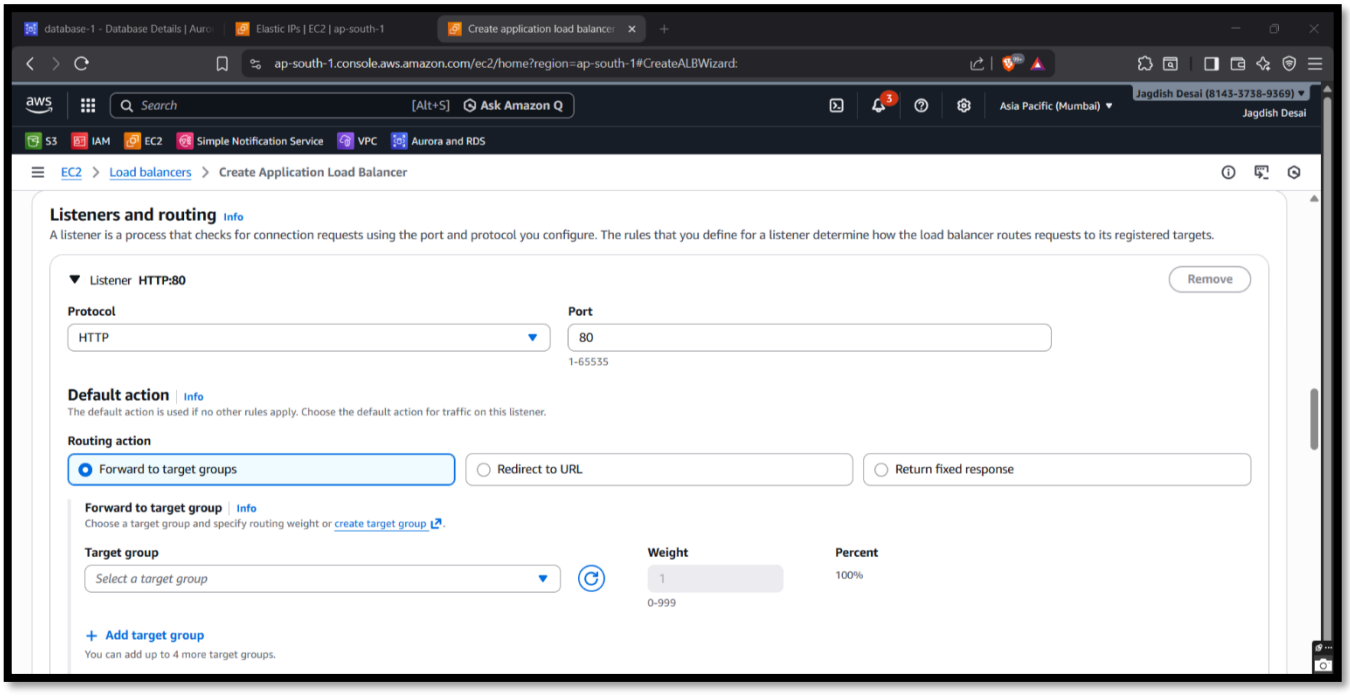
selected Availability Zones only

Security Group:

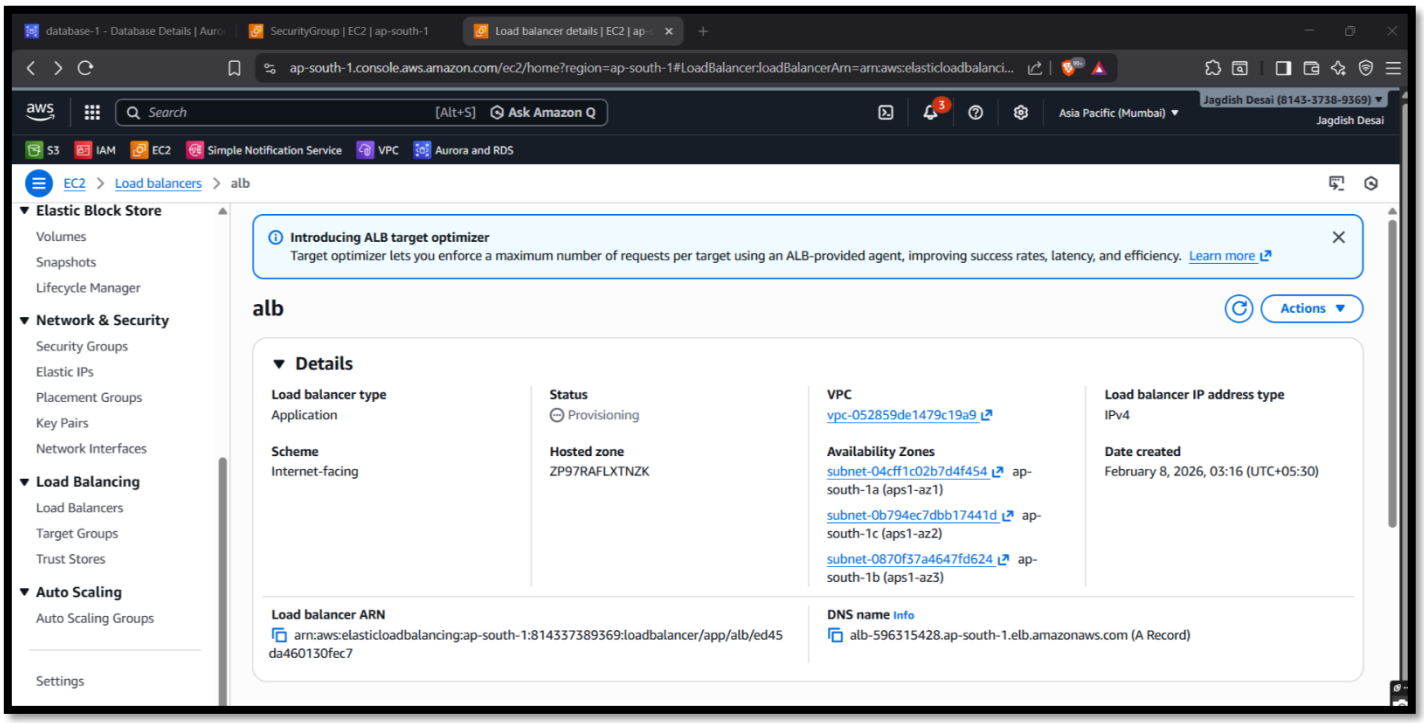
- Allow HTTP (80)

Listener:

- HTTP → 80 → Forward to **Target Group**

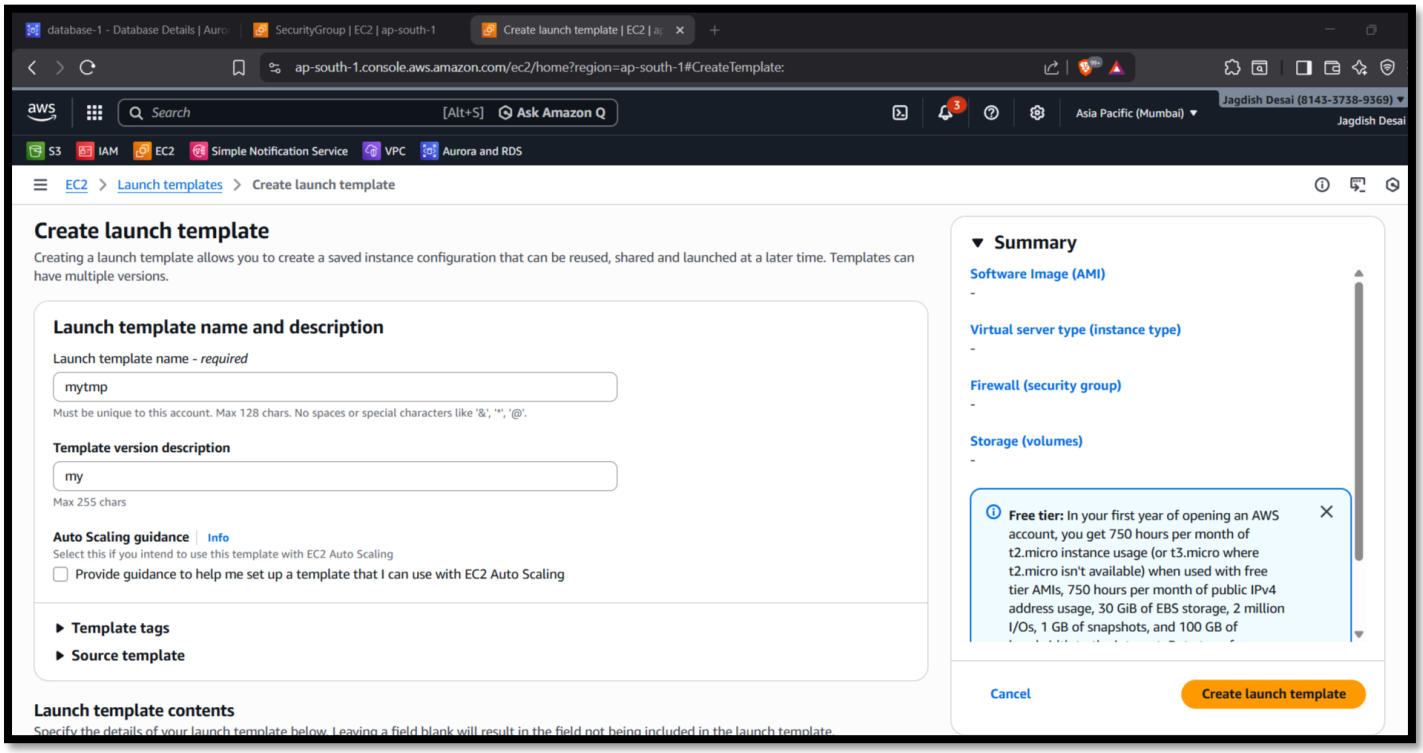


Successfully created application load balancer

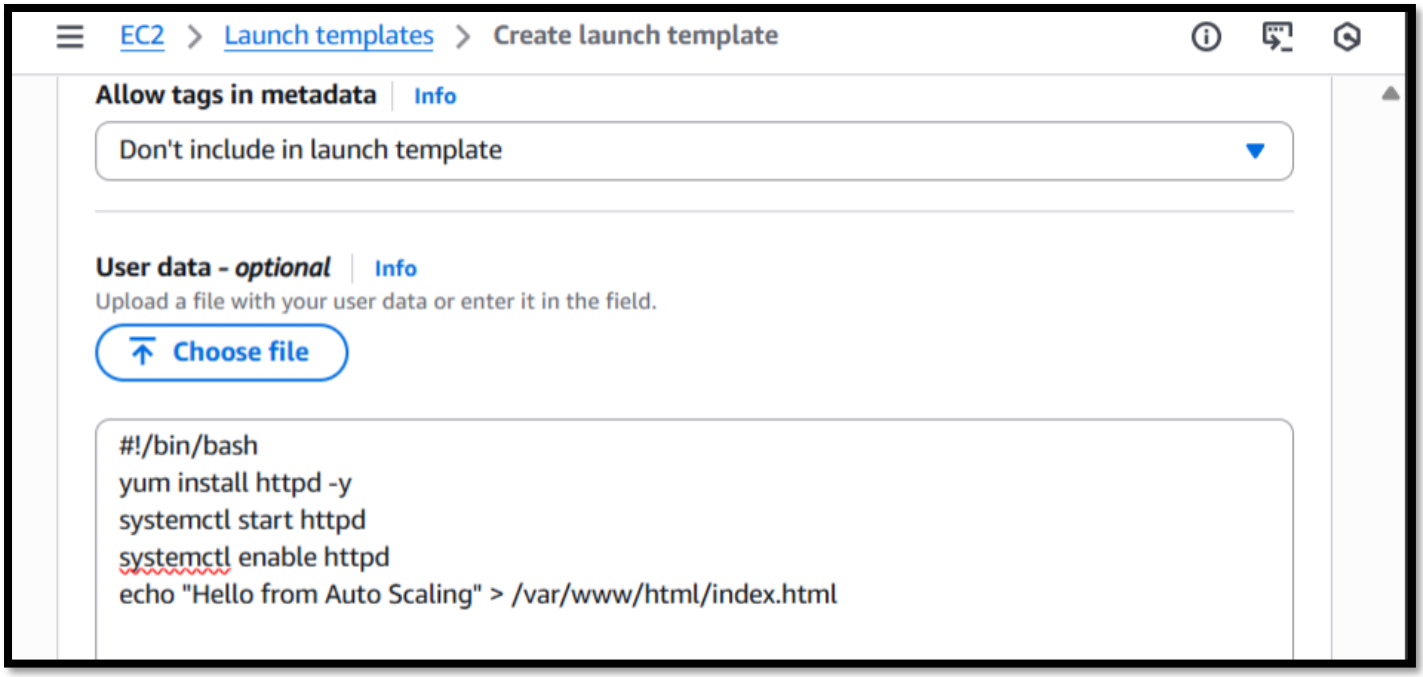


Create Auto Scaling Group (ASG)

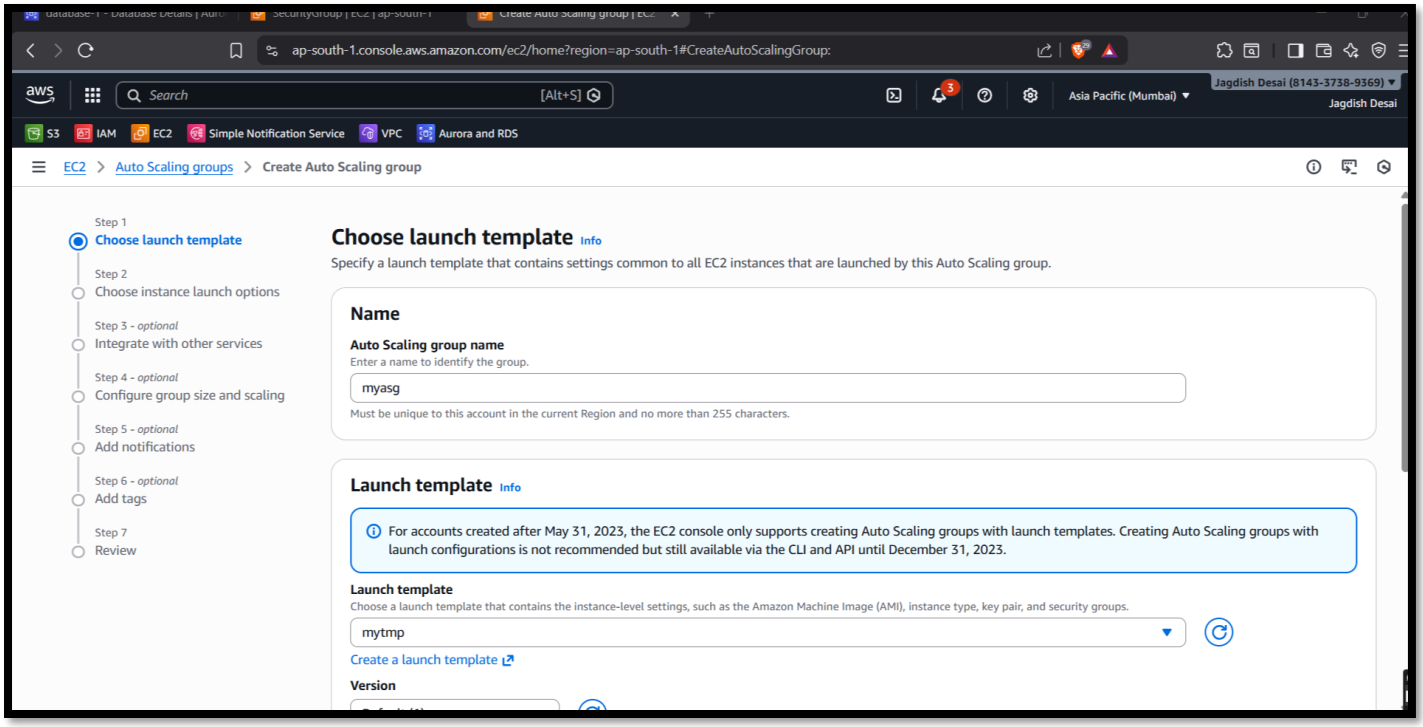
Step 1: Create Launch Template mytmp



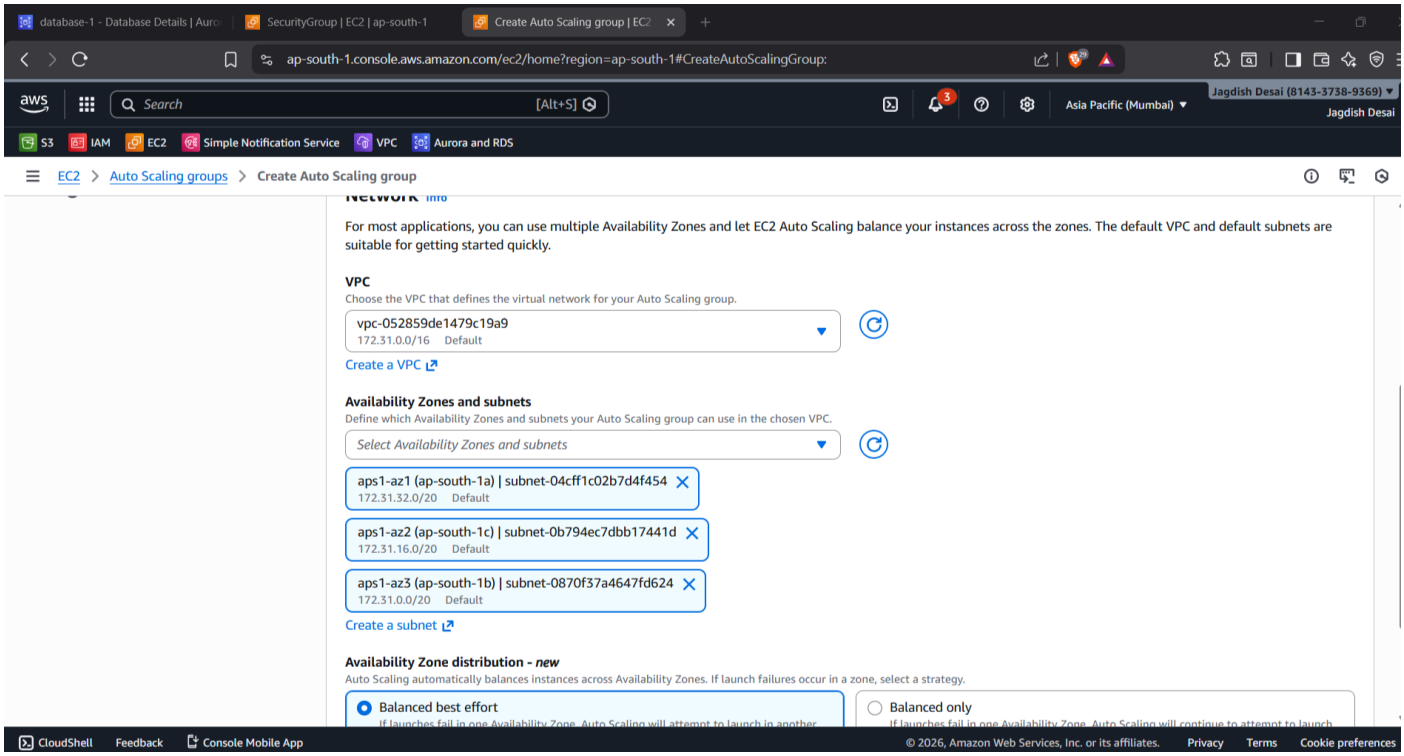
Write user data:



Step 2: Create Auto Scaling Group myasg

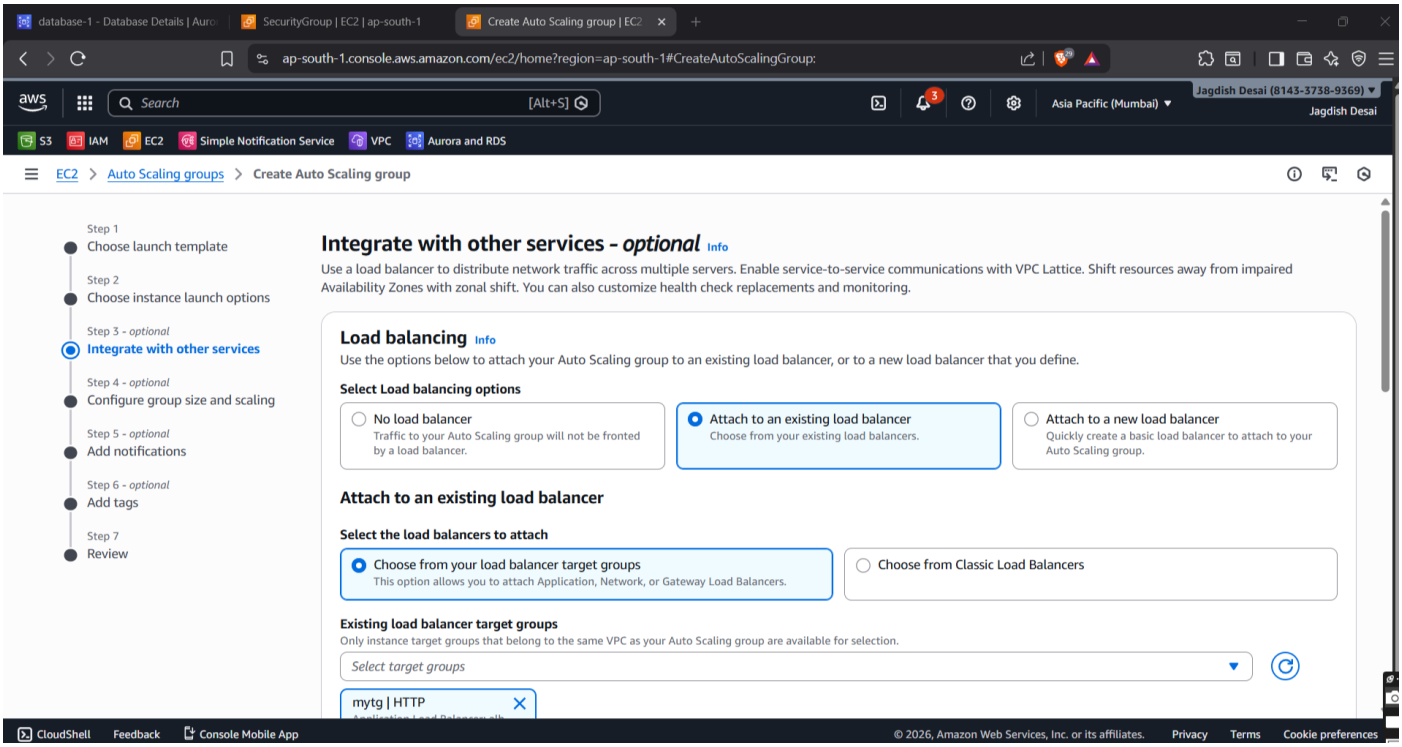


- **Select VPC & subnets**



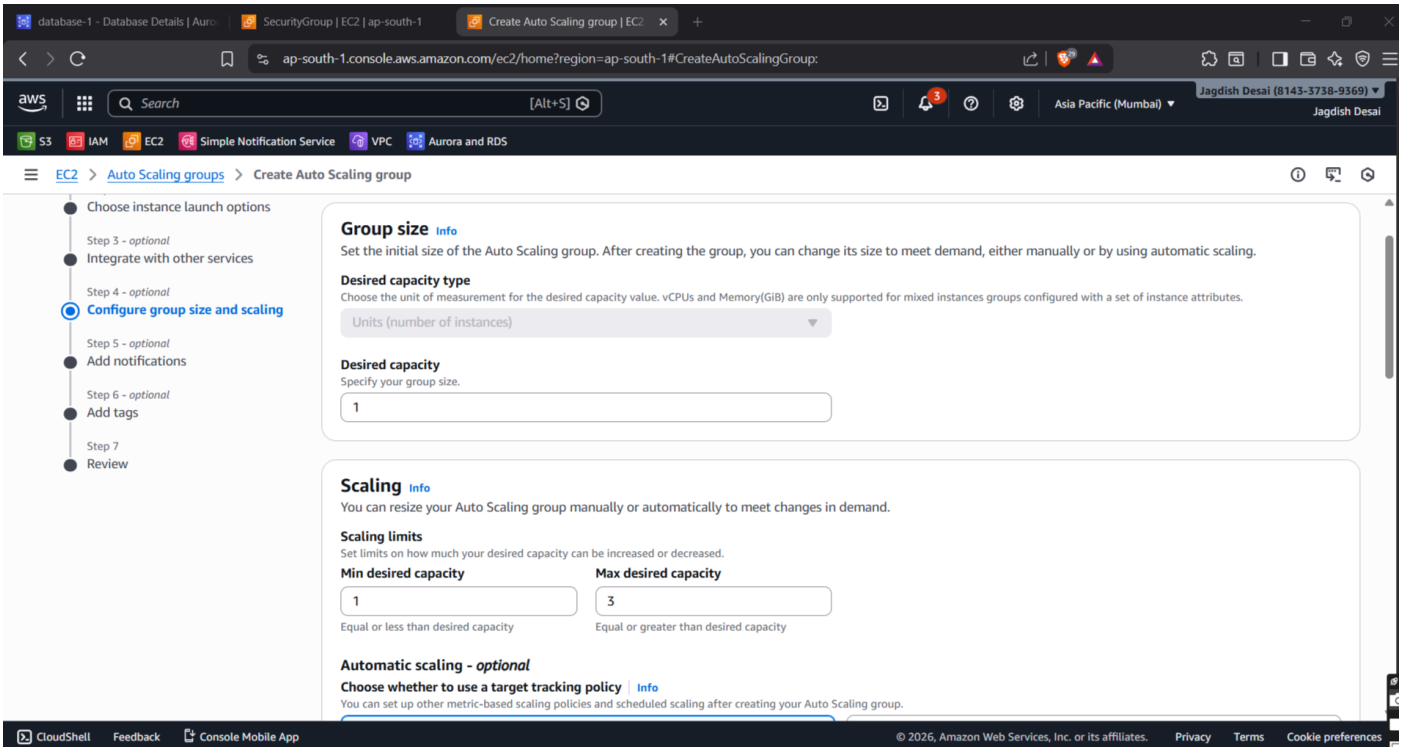
Attach to **existing Load Balancer**

Select **Target Group**

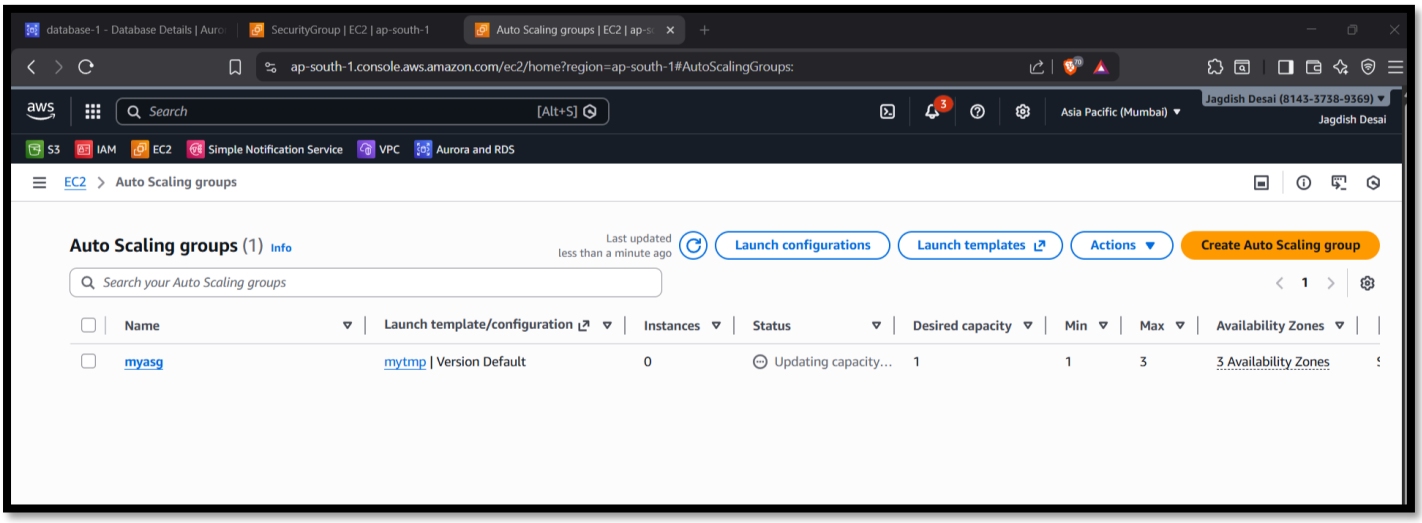


Group size:

- Desired: 1
- Min: 1
- Max: 3



Create Myasg

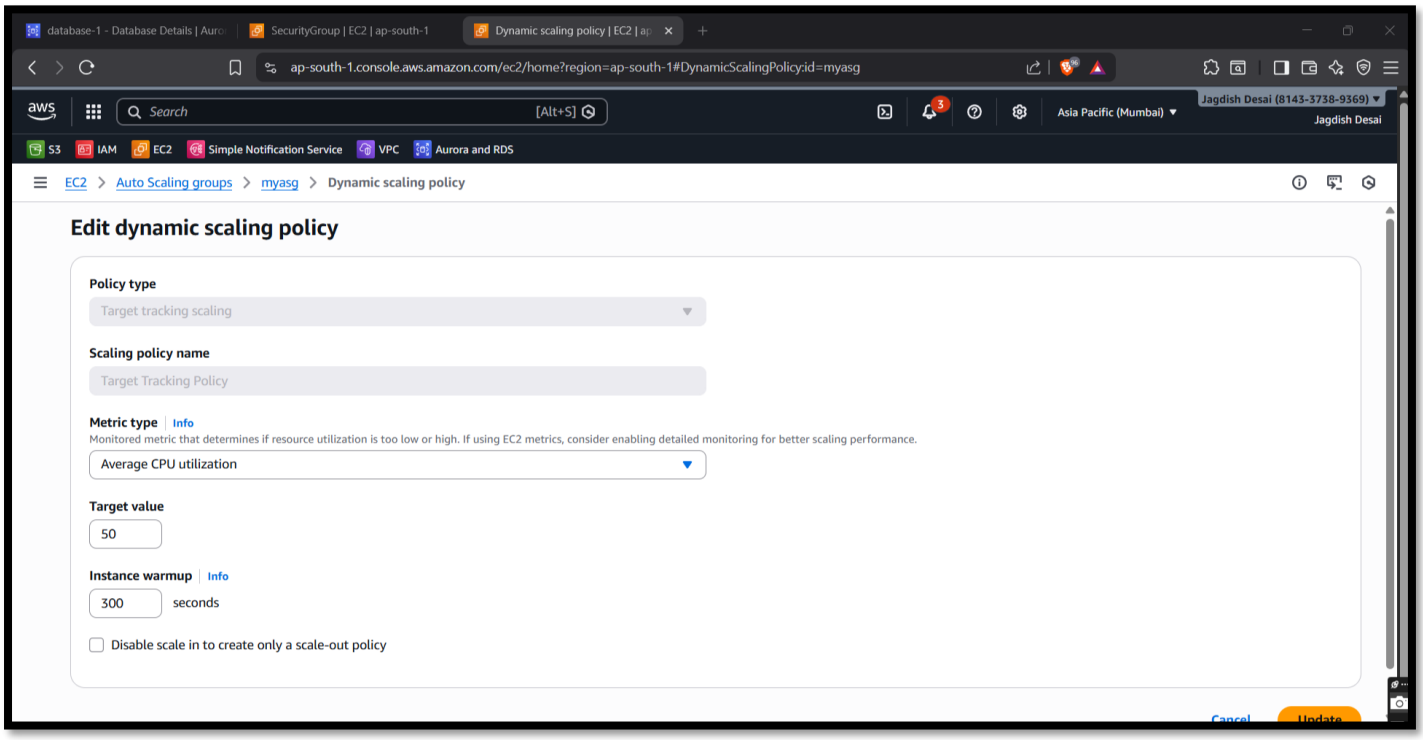


Scale based on CPU Utilization

Step 1: Adding Scaling Policy

1. ASG → **Automatic scaling**
2. Choose **Target tracking**
3. Metric: **Average CPU utilization**
4. Target value: **50%**
5. Create

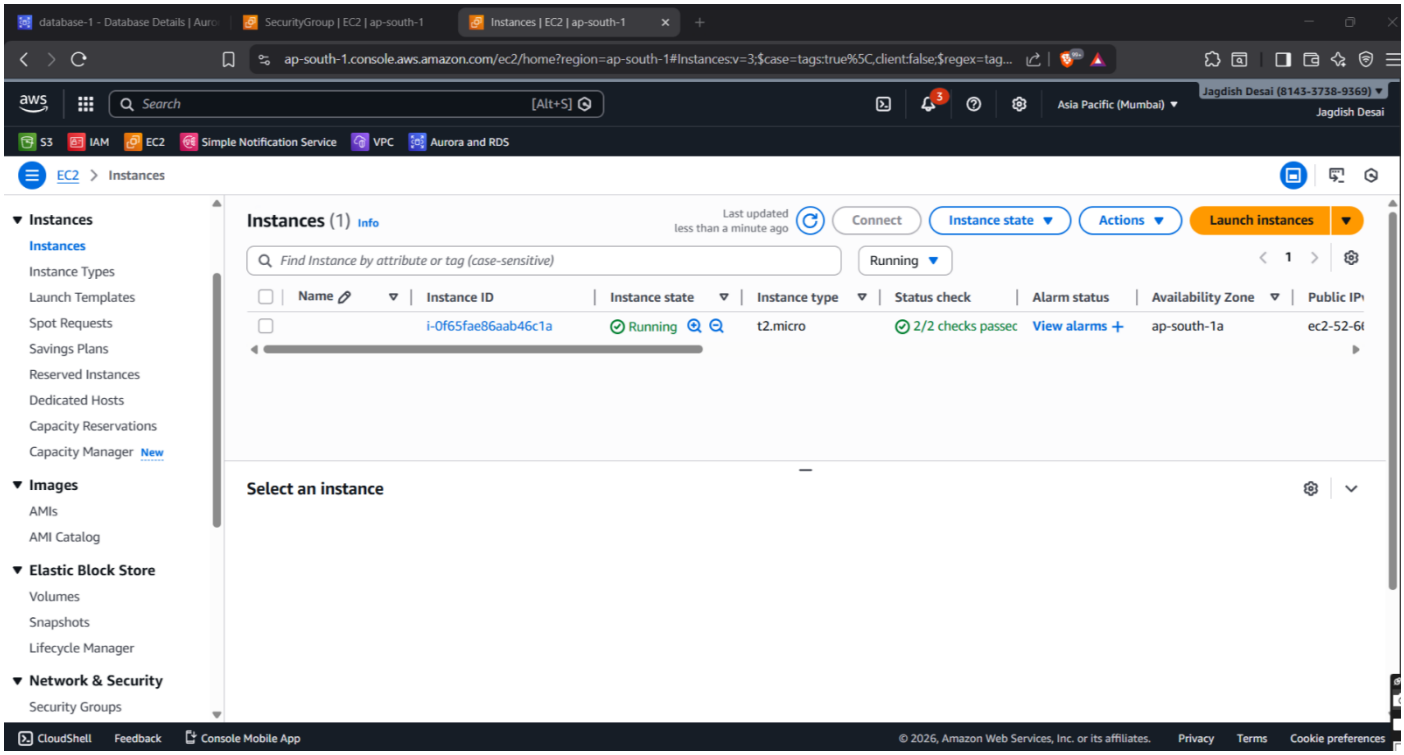
📈 If CPU > 50% → new EC2 added
📉 If CPU < 50% → EC2 removed



Our Final work Flow

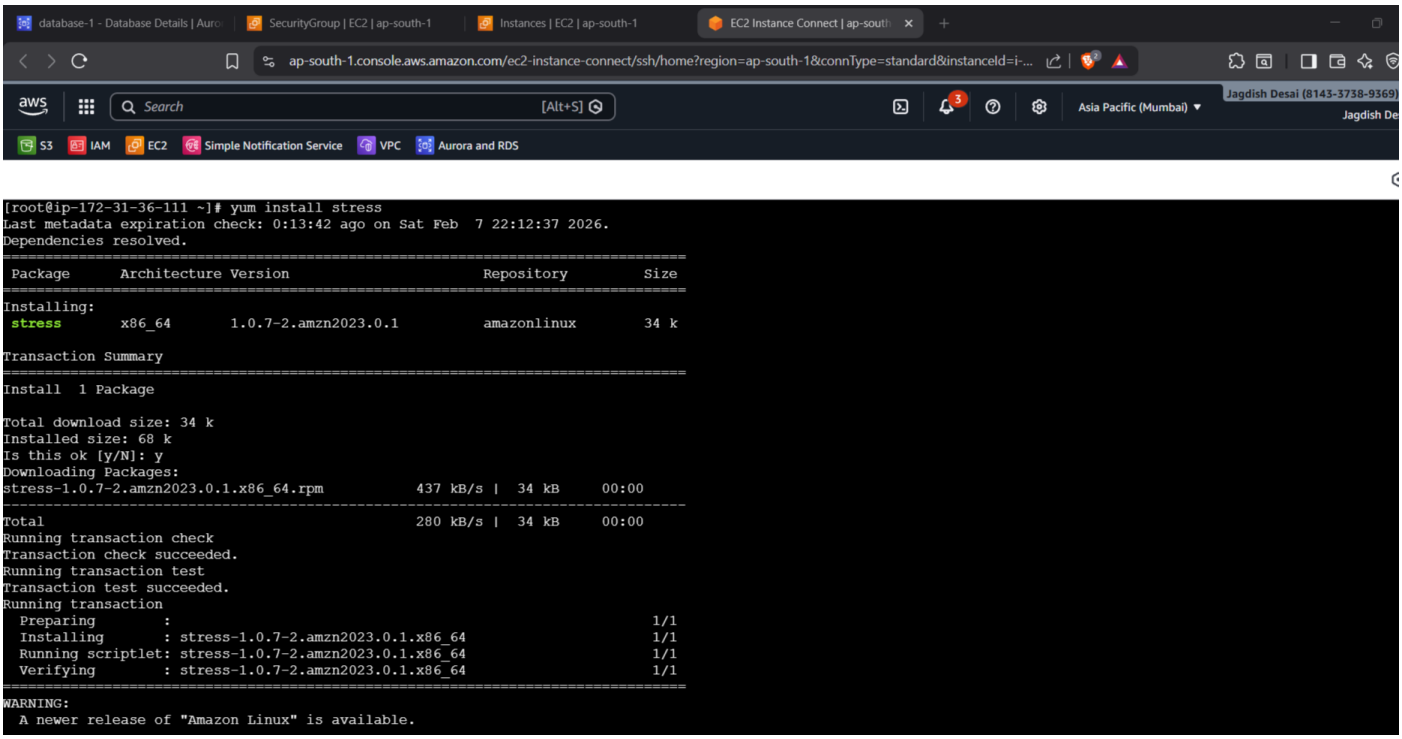
User → ALB → Target Group → EC2 (ASG)

This Is created instance by us: ASG launched EC2:



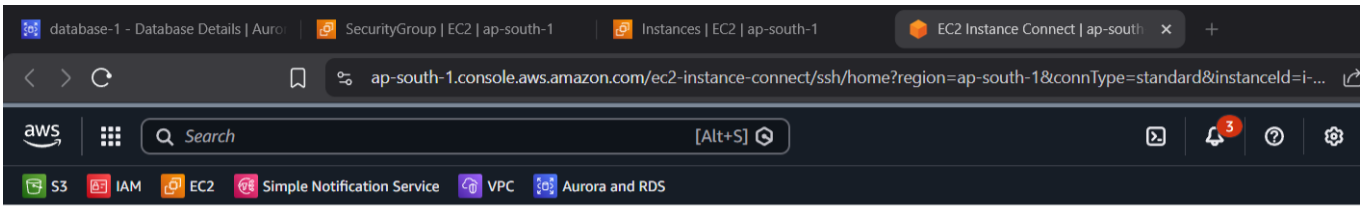
Create CPU Load (SSH into EC2)

Yum install stress -y



Increasing stress

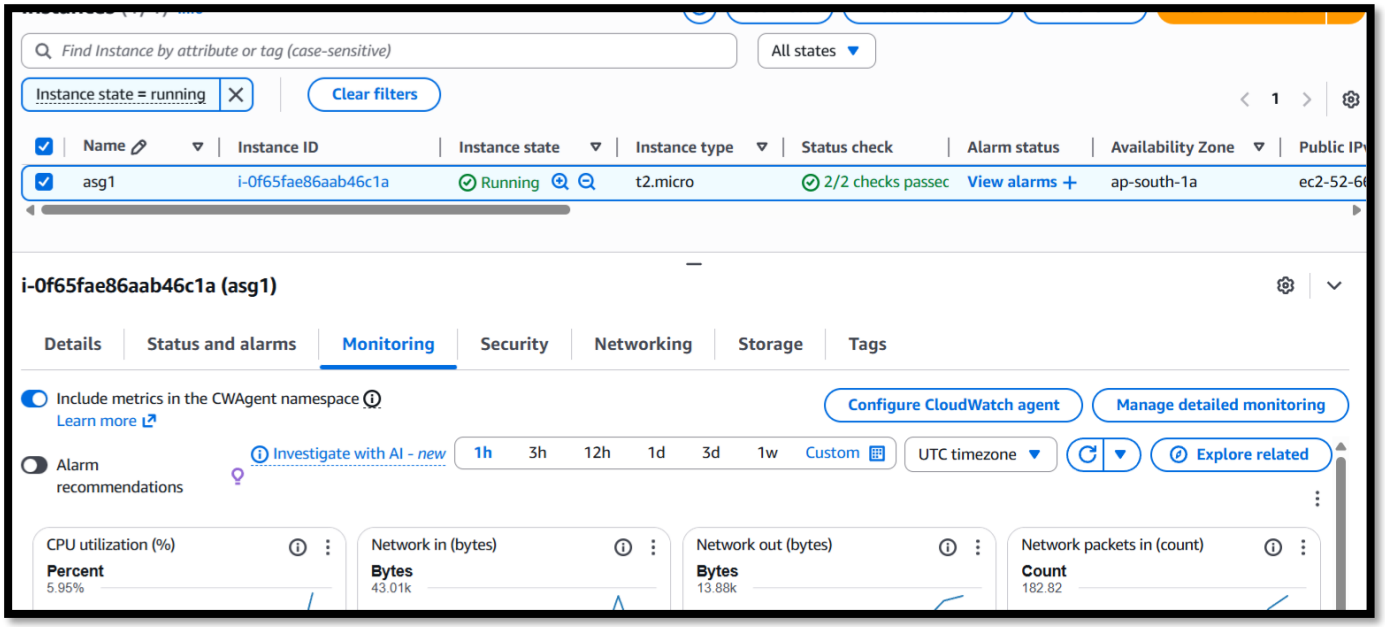
stress --cpu 80 --io 4 --vm 2 --vm-bytes 128M --timeout 1000s &



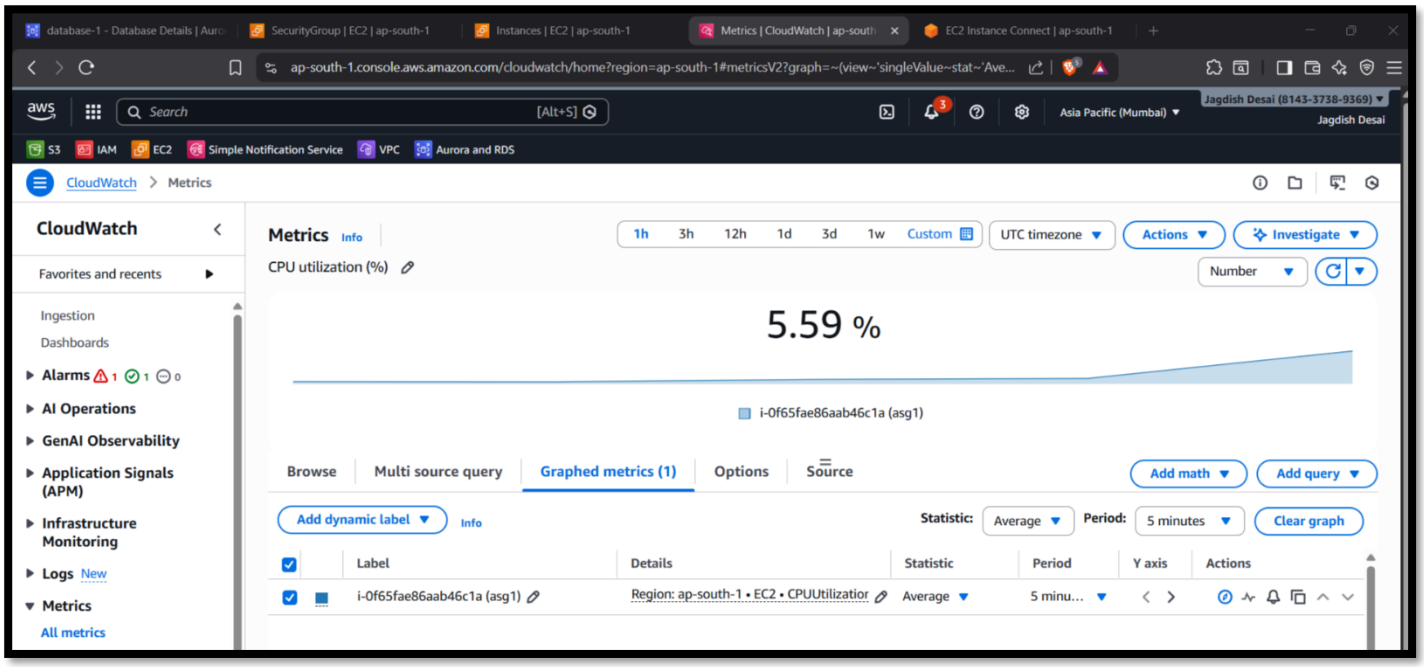

```
[root@ip-172-31-36-111 /]# stress --cpu 80 --io 4 --vm 2 --vm-bytes 128M --timeou
t 1000s &
[1] 27447
[root@ip-172-31-36-111 /]# stress: info: [27447] dispatching hogs: 80 cpu, 4 io, 2 vm, 0 hdd
```

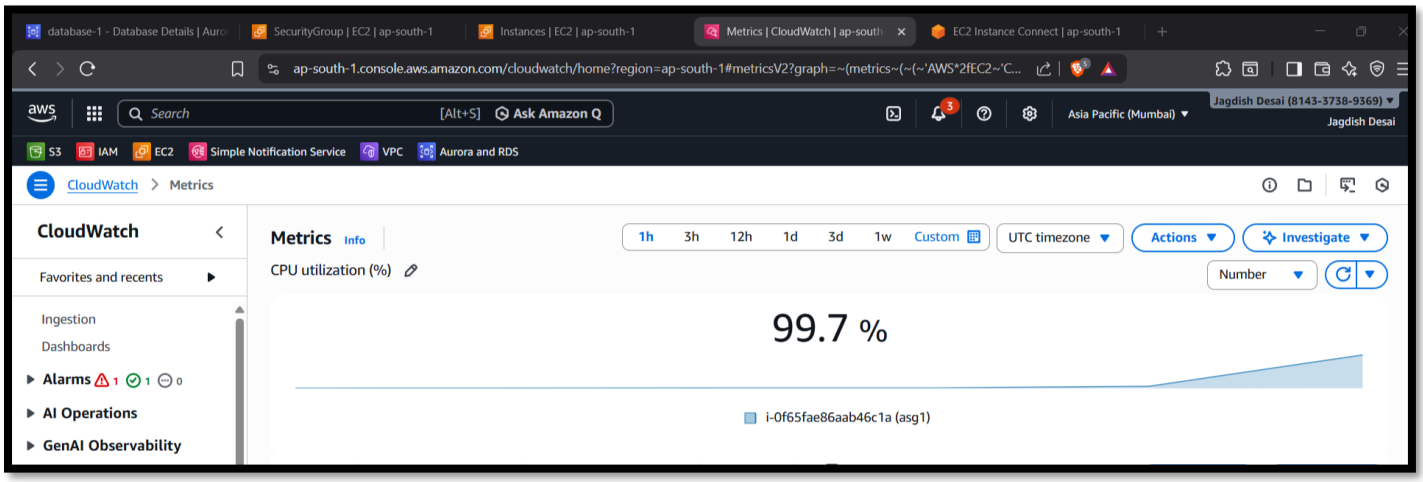
Increasing more stress

stress --cpu 80 --io 4 --vm 2 --vm-bytes 128M --timeout 1000s &

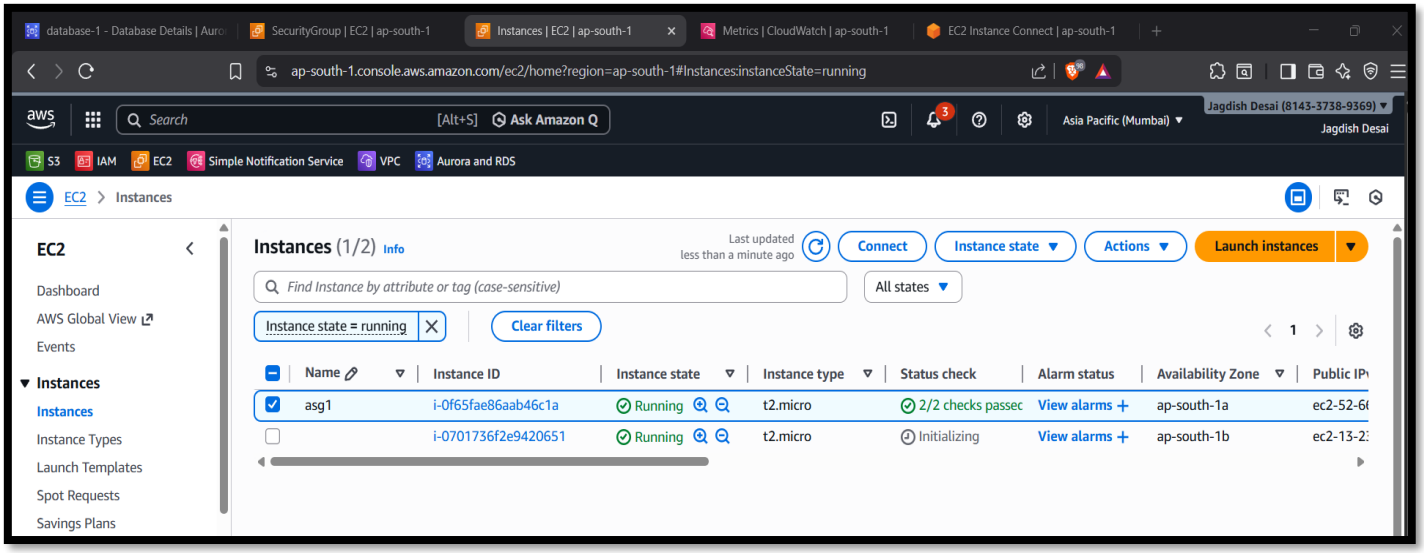


View Cpu Load: ip- 52.66.118.136

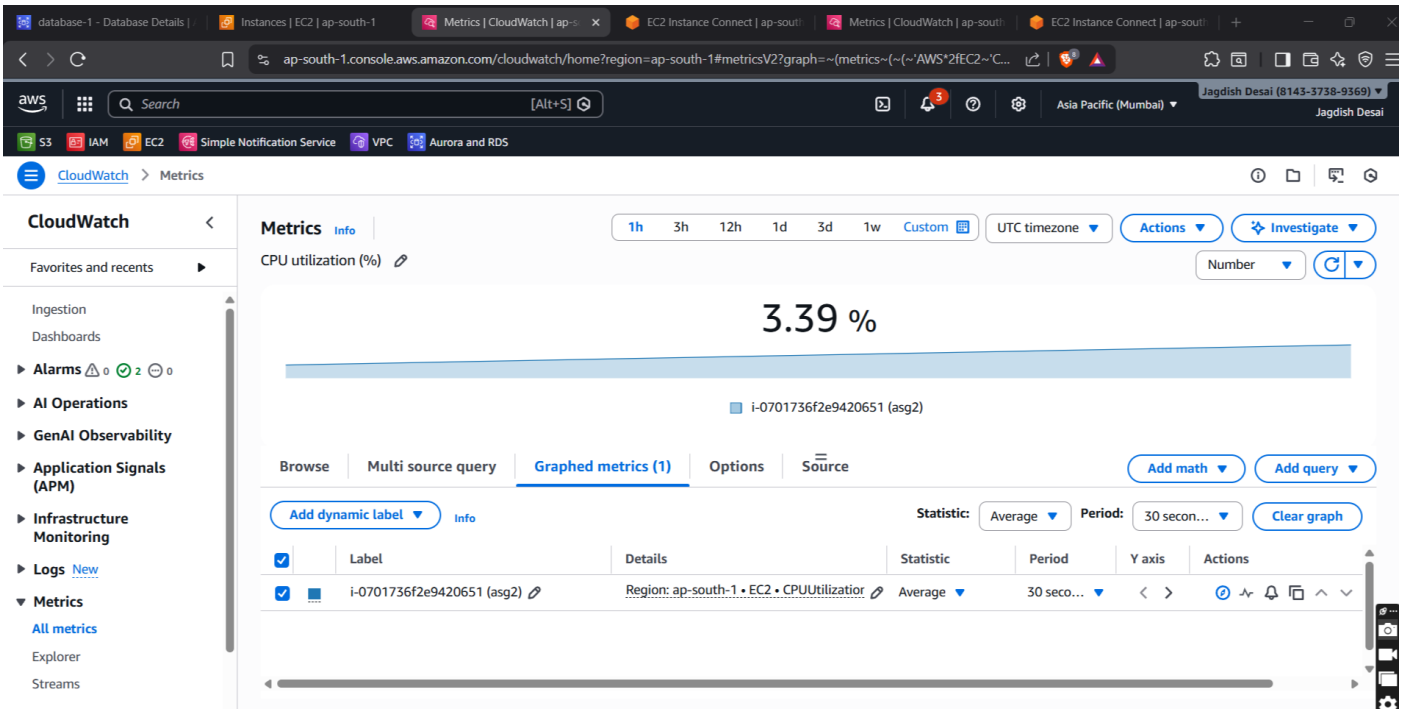


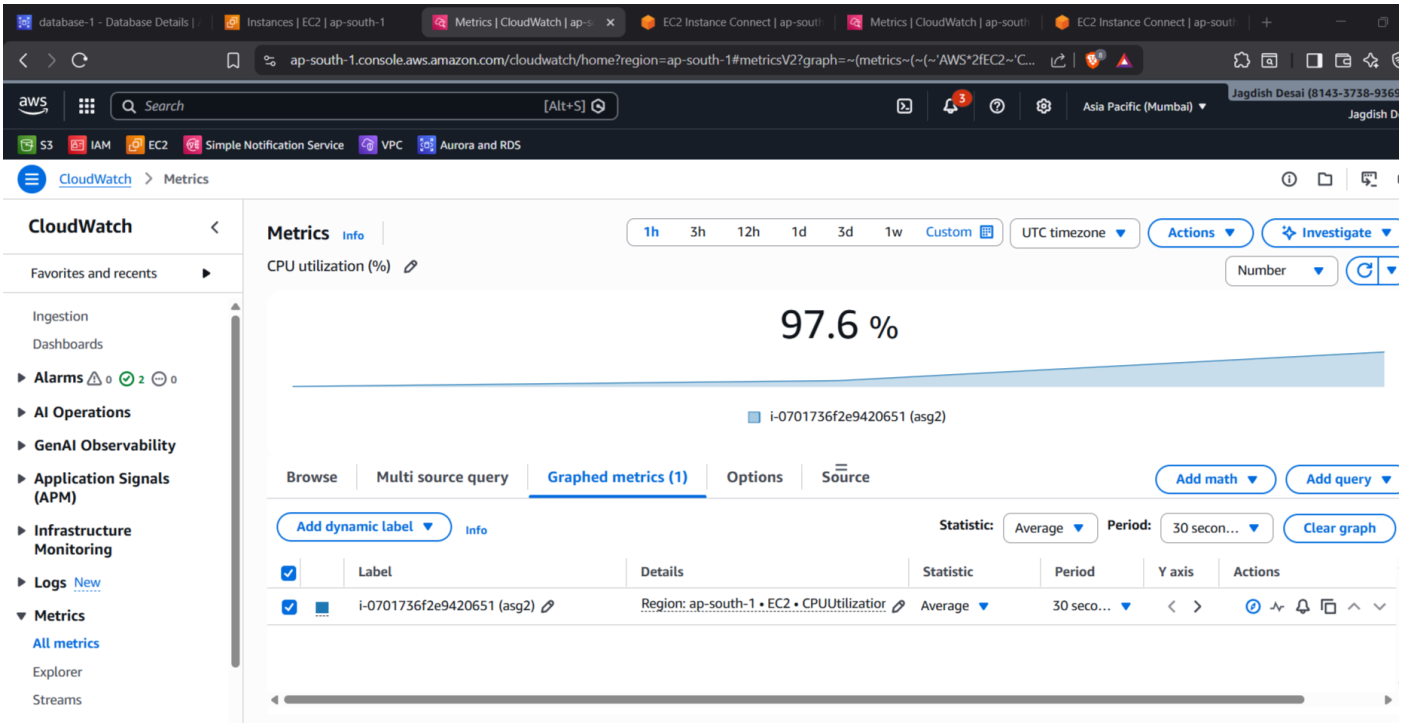


After Increasing Load after above 50% It Crates another instance

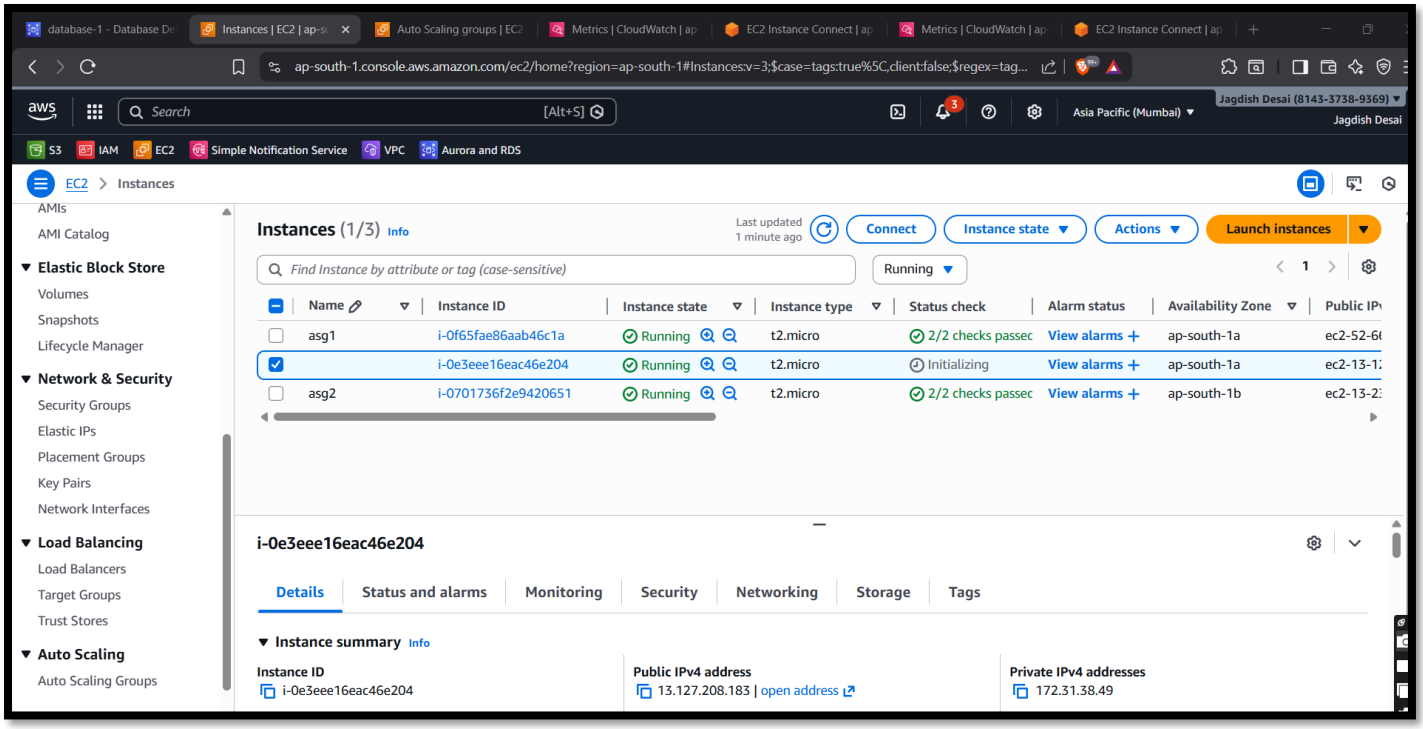


Also we give stress to that asg2 instance: ip- 13.232.12.57





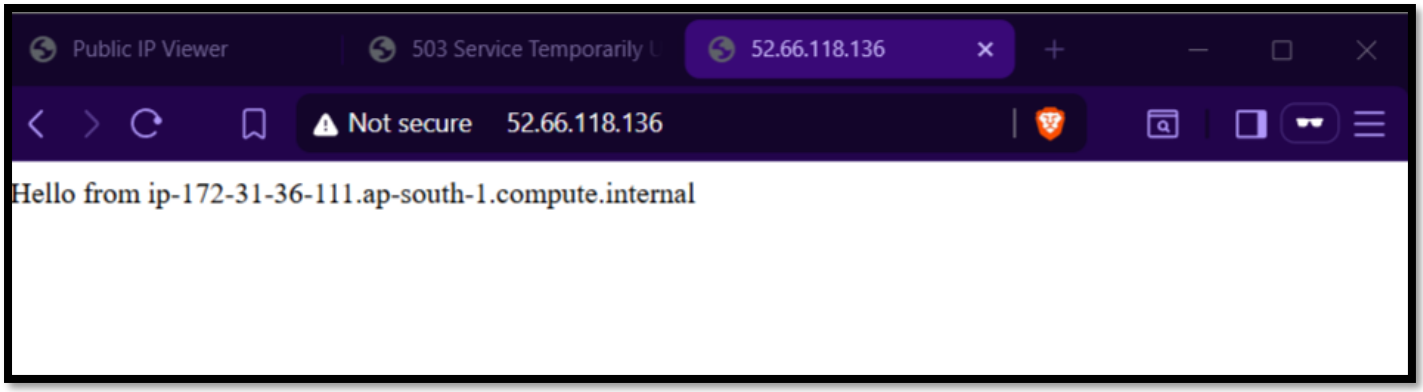
After too much stress new instance will be created: ip-13.127.208.183



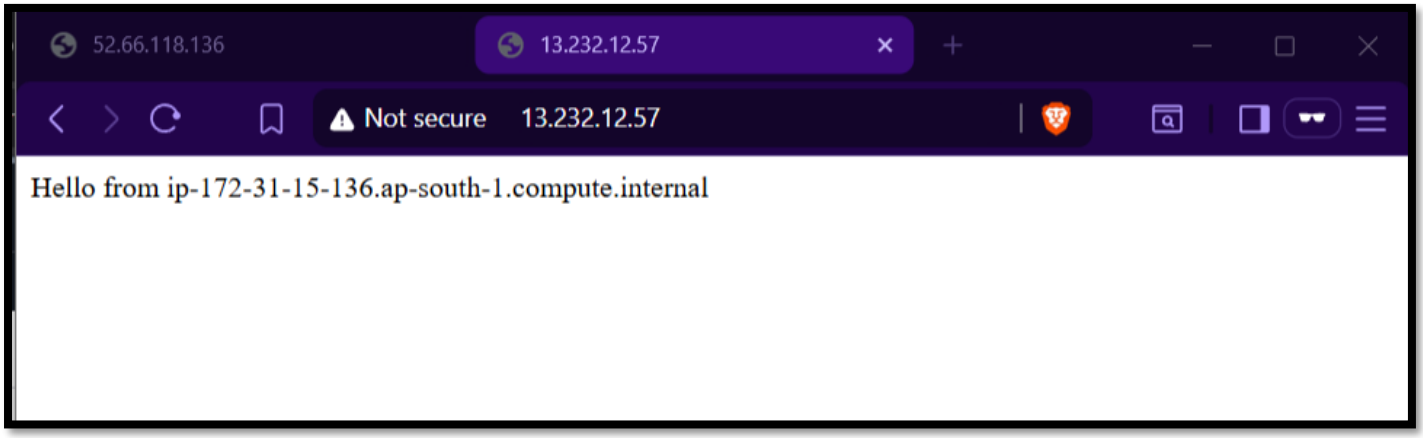
Checking each instance private ip on browser:

1.ASG-1- private-ip 172.31.36.111

echo "Hello from $(hostname)" > /var/www/html/index.html



2.ASG-2- private-ip 172.31.15.136



3.ASG- 3: private-ip 172.31.38.49