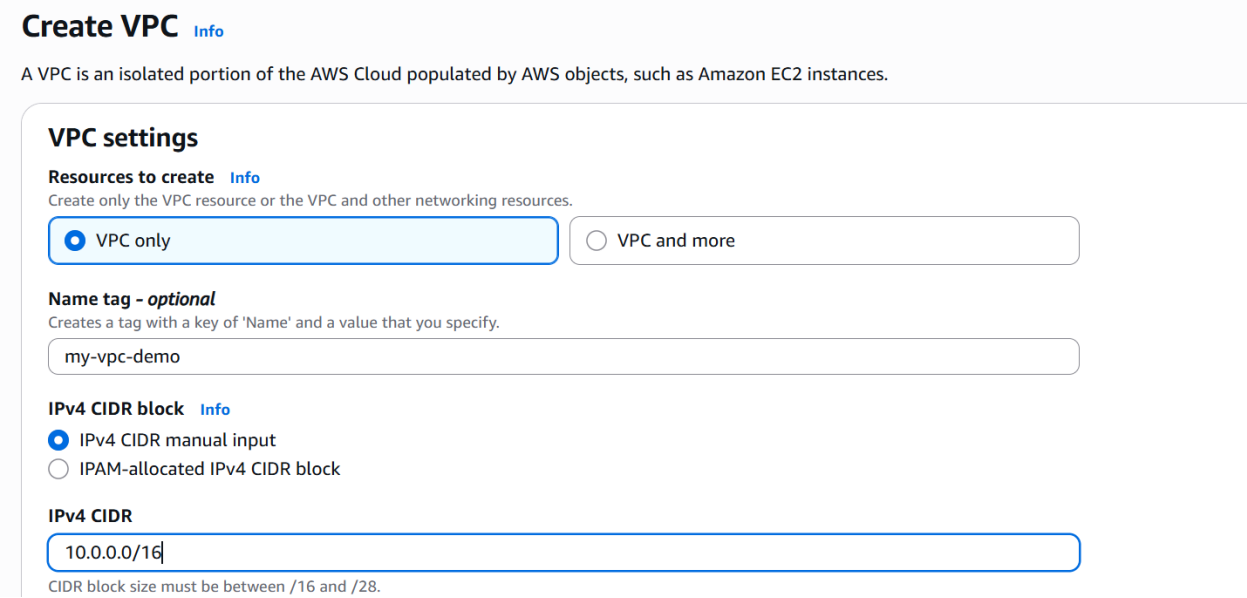
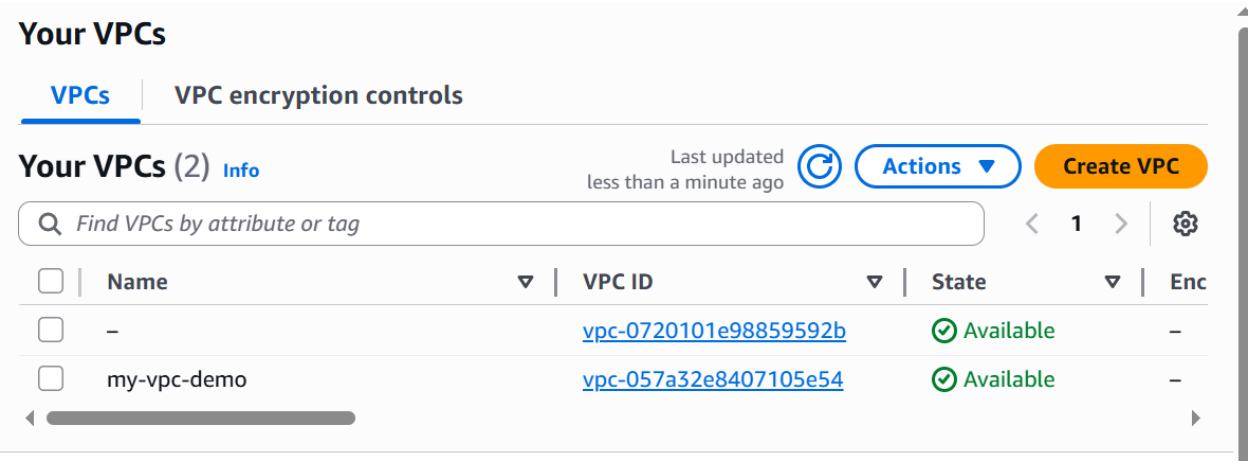
Creating VPC In AWS



- Now add name tag
- IPv4 CIDR: 10.0.0.0/16 = 65,536
- Click on Create VPC



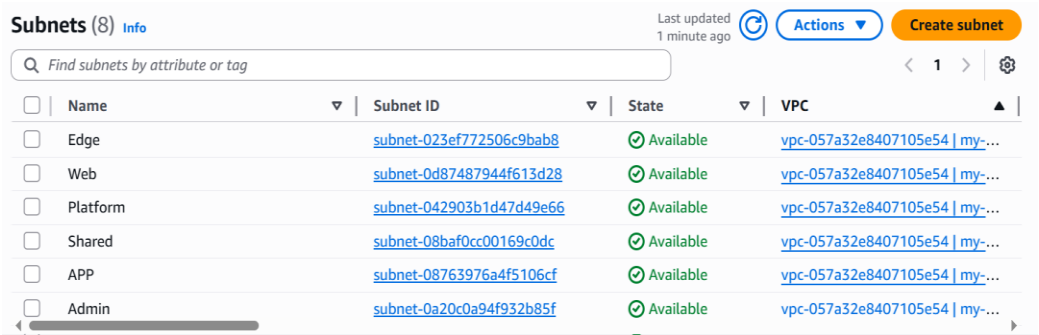
Now Create 6 Subnets

Creating **Exactly 6 subnets**, each with **different IP capacities**.

Subnet Name	Purpose	Required IPs	CIDR
Admin	Bastion / Ops	~256	/24
Edge	Ingress / LB	~512	/23
Web	Web Tier	~1,024	/22
App	App Tier	~2,048	/21
Platform	Containers / Tools	~4,096	/20
Shared	Large Internal Services	~8,192	/19

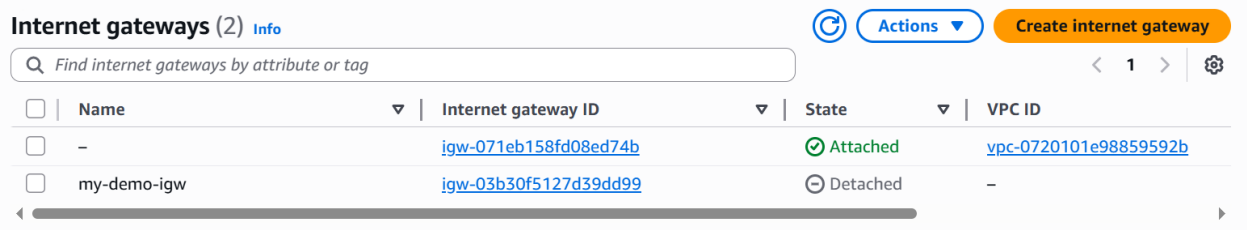
- Here Created 6 Subnets

Subnet Name	Required IPs & CIDR
Shared	10.0.0.0/19 = 8,192 IP's
Platform	10.0.32.0/20 = 4,096 IP's
App	10.0.48.0/21 = 2,048 IP's
Web	10.0.56.0/22 = 1,024 IP's
Edge	10.0.60.0/23= 512 IP's
Admin	10.0.62.0/24 = 256 IP's

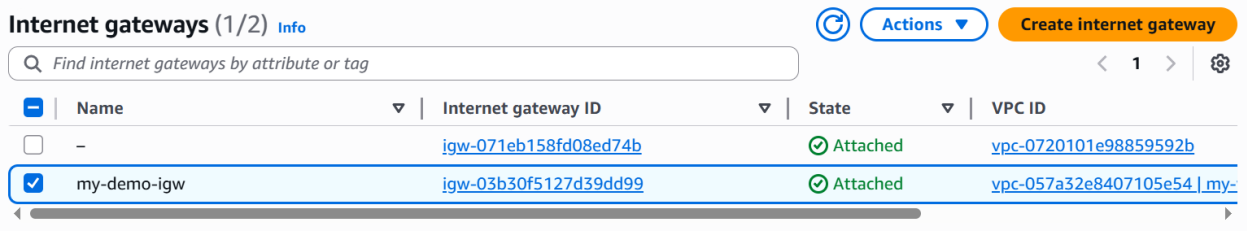


Now Creating Internet Gateway

- Creating **one Internet Gateway**.
- Attach it to the VPC.
- Internet access must be **controlled and intentional**



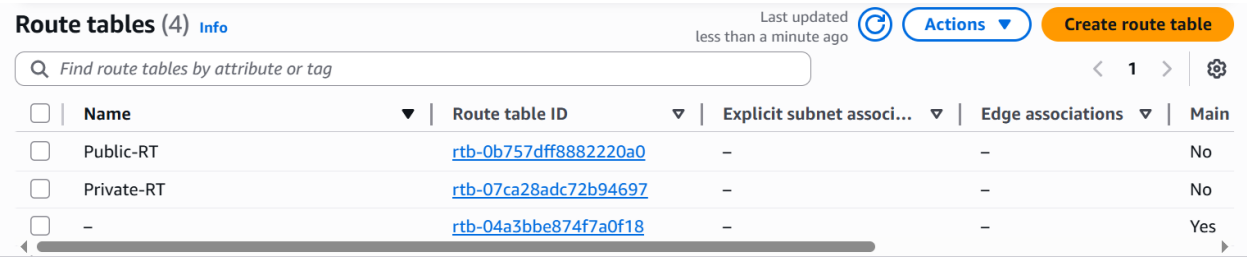
- Now Internet Gateway has Created.
- Now this is in Detached state and Attach to VPC.
- Go to Actions
- Click On Attach to VPC
- It will navigate to other page there you will find your VPC you have created
- And Then Click on VPC you have Created
- Now you can see the IGW has Attached to VPC



Now Creating Route Tables

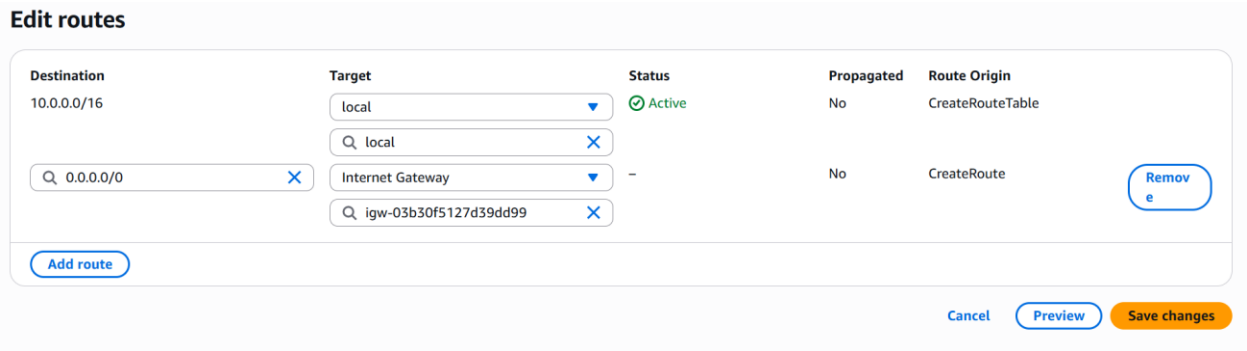
- Click on Create Route Tables

- Create **2** Route Tables: **Public-RT and Private-RT**
- Assign a Name to the Route Table
- Then Click on VPC you have created



Now Edit Routes

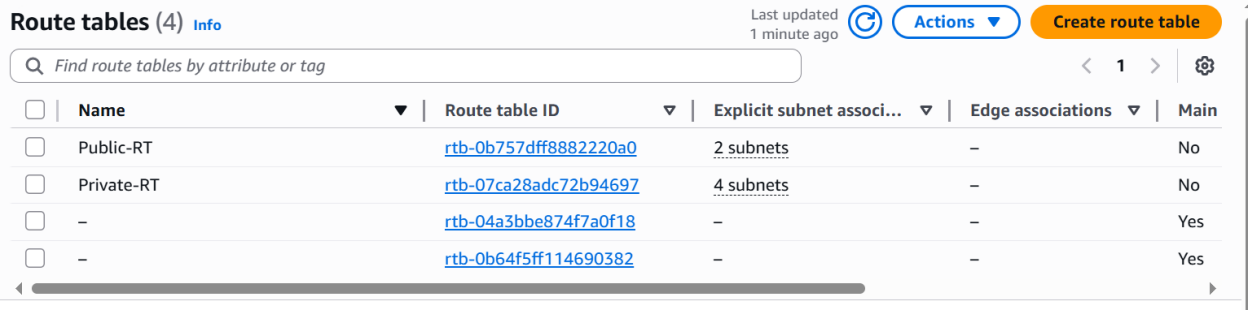
- Add Routes to Public-RT 0.0.0.0/0
- Target – IGW



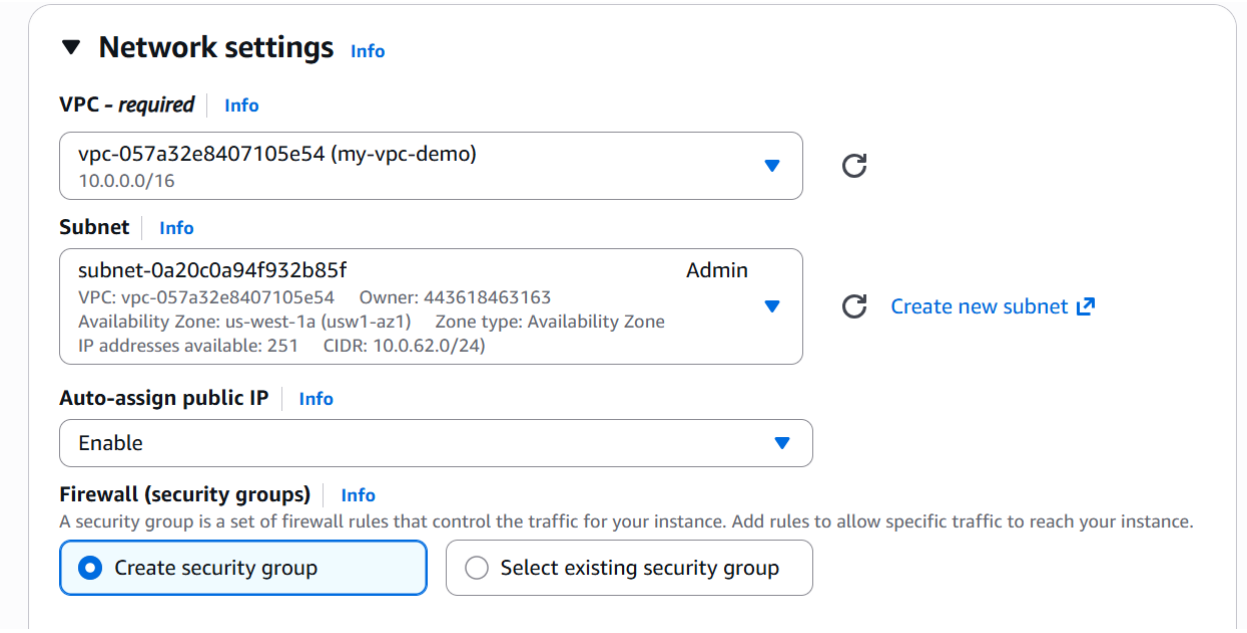
Now Edit Explicit-Subnet Association

Explicitly associate:

a. Admin + Edge subnets → **Public Route Table**
b. Remaining 4 subnets → **Private Route Table**



Now Create EC2 Server and Make some changes in Network



Now Connect to Server

Now ping google.com

Let See the google is ping that means it is public and using Internet

```
ubuntu@ip-10-0-62-211:~$ ping google.com
PING google.com (142.250.191.46) 56(84) bytes of data.
64 bytes from nuq04s42-in-f14.1e100.net (142.250.191.46): icmp_seq=1 ttl=118 time=0.751 ms
64 bytes from nuq04s42-in-f14.1e100.net (142.250.191.46): icmp_seq=2 ttl=118 time=0.902 ms
64 bytes from nuq04s42-in-f14.1e100.net (142.250.191.46): icmp_seq=3 ttl=118 time=0.762 ms
64 bytes from nuq04s42-in-f14.1e100.net (142.250.191.46): icmp_seq=4 ttl=118 time=0.769 ms
64 bytes from nuq04s42-in-f14.1e100.net (142.250.191.46): icmp_seq=5 ttl=118 time=0.768 ms
64 bytes from nuq04s42-in-f14.1e100.net (142.250.191.46): icmp_seq=6 ttl=118 time=0.753 ms
64 bytes from nuq04s42-in-f14.1e100.net (142.250.191.46): icmp_seq=7 ttl=118 time=0.759 ms
64 bytes from nuq04s42-in-f14.1e100.net (142.250.191.46): icmp_seq=8 ttl=118 time=0.785 ms
64 bytes from nuq04s42-in-f14.1e100.net (142.250.191.46): icmp_seq=9 ttl=118 time=0.761 ms
64 bytes from nuq04s42-in-f14.1e100.net (142.250.191.46): icmp_seq=10 ttl=118 time=0.773 ms
64 bytes from nuq04s42-in-f14.1e100.net (142.250.191.46): icmp_seq=11 ttl=118 time=0.765 ms
64 bytes from nuq04s42-in-f14.1e100.net (142.250.191.46): icmp_seq=12 ttl=118 time=0.769 ms
64 bytes from nuq04s42-in-f14.1e100.net (142.250.191.46): icmp_seq=13 ttl=118 time=0.768 ms
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64 bytes from nuq04s42-in-f14.1e100.net (142.250.191.46): icmp_seq=21 ttl=118 time=0.752 ms
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64 bytes from nuq04s42-in-f14.1e100.net (142.250.191.46): icmp_seq=24 ttl=118 time=0.763 ms
64 bytes from nuq04s42-in-f14.1e100.net (142.250.191.46): icmp_seq=25 ttl=118 time=0.756 ms
64 bytes from nuq04s42-in-f14.1e100.net (142.250.191.46): icmp_seq=26 ttl=118 time=0.767 ms
```