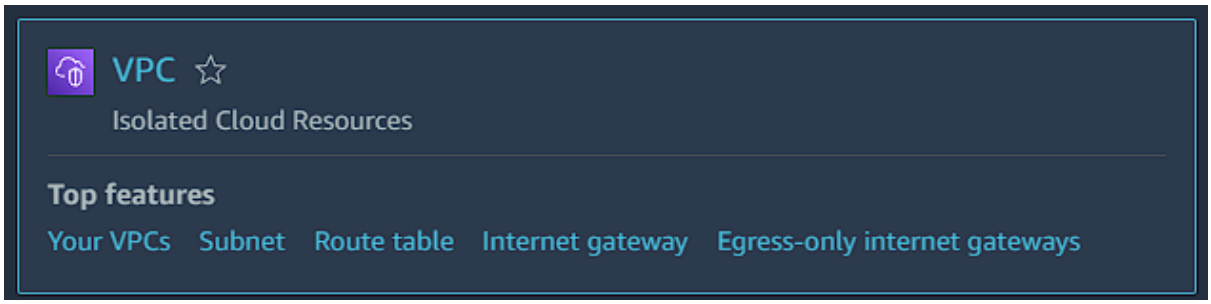
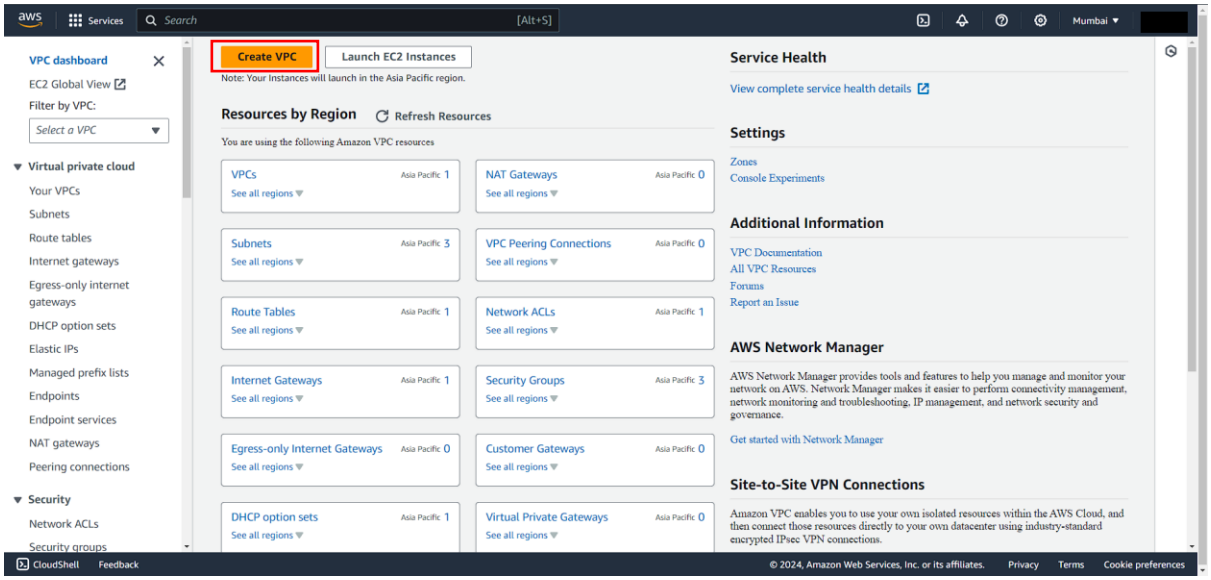
😊 Creating Virtual Private Cloud (VPC)

🤓 Step 1: Create VPC

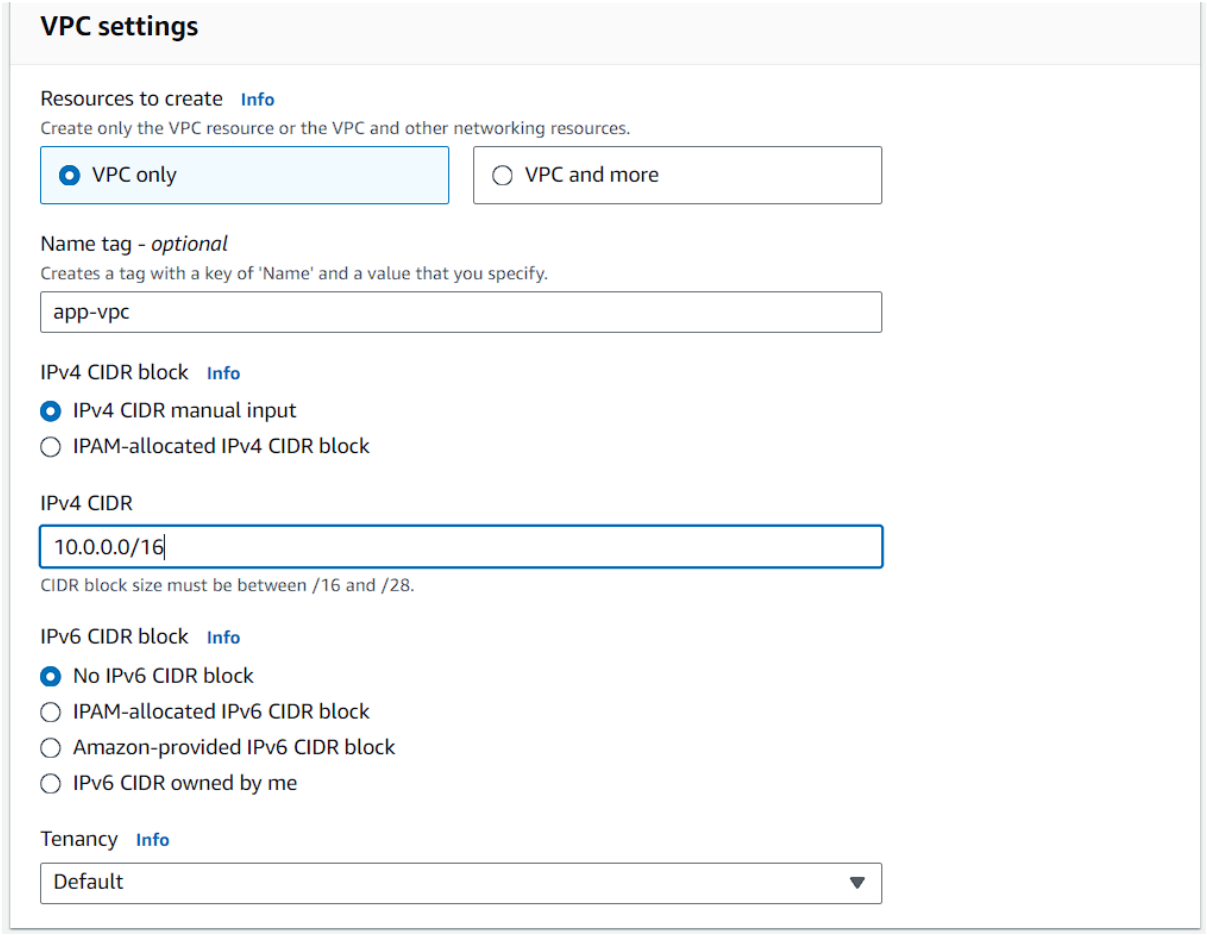
1. Login to AWS Console. Now you need to search for VPC. Choose this service accordingly.



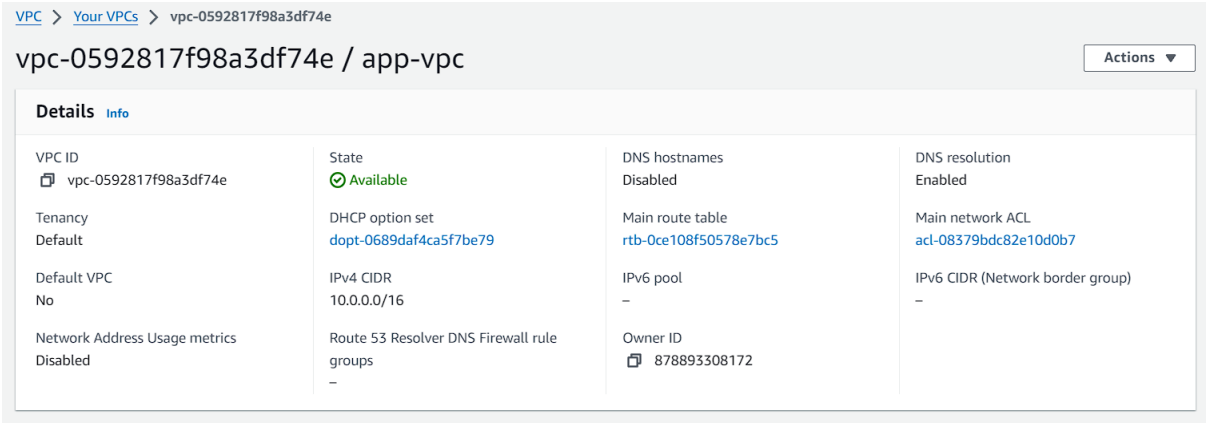
2. This is how your VPC dashboard would look like.
3. Now you need to click on Create VPC.



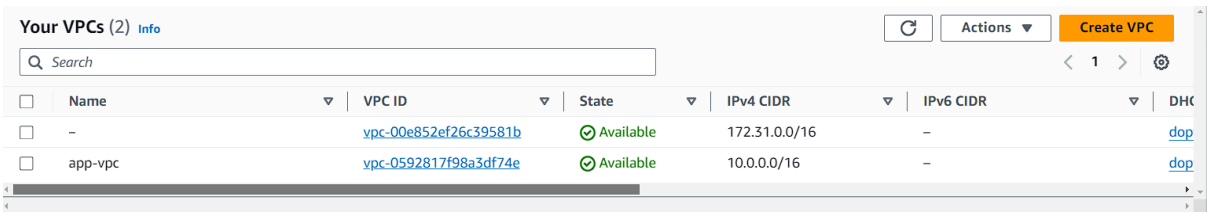
4. So, on the VPC creation page you need to select VPC only.
5. Then you need to give it a name of your choice.
6. Now you need to select IPv4 CIDR manual input and put your CIRD in place.
7. In this the IPv4 CIDR is 10.0.0.0/16
8. There is no need to select IPv5 CIDR block because you don’t need it right now.
9. Then just click on Create VPC.



10. Here your VPC is created.

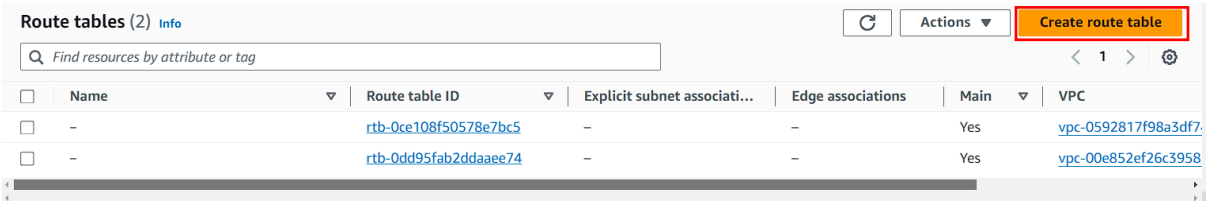


11. Now if you go back, you will see that the unnamed VPC with CIDR block is your account default VPC.

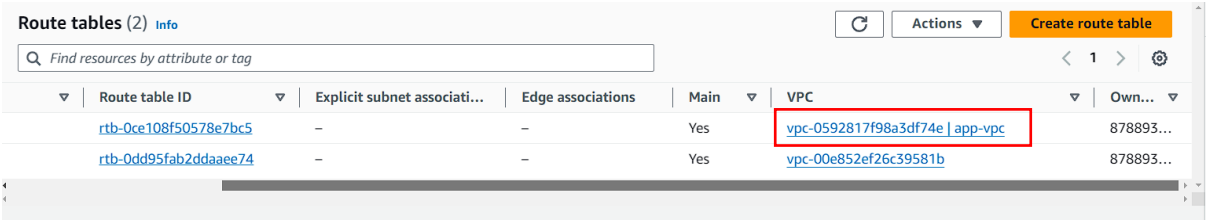


Step 2: Naming Route table

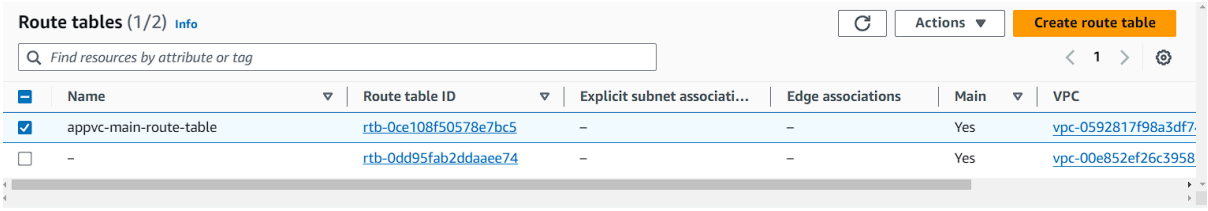
1. Now go to route tables, you will see that two route tables have already been there. These route table belongs to your VPC. One table belongs to your default route table and one belongs to your newly created VPC.



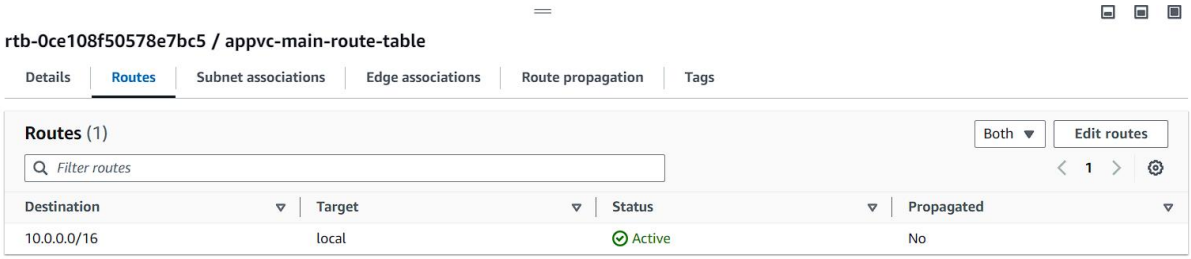
2. Now if you will scroll route table pane to the right you will see that which one from your route table belongs to VPC that you created.



3. Once you have identified that now you need to give name to that route table.

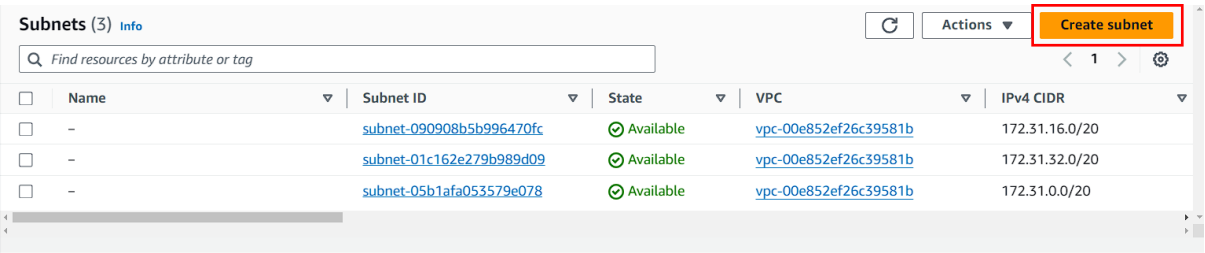


4. Now if you go on to the routes, you will see there is a default route also in place. So, any traffic from any EC2 instance. Within the VPC. Can be directed onto the VPC itself. So, this rule or route allows traffic between the EC2 instances within a VPC.

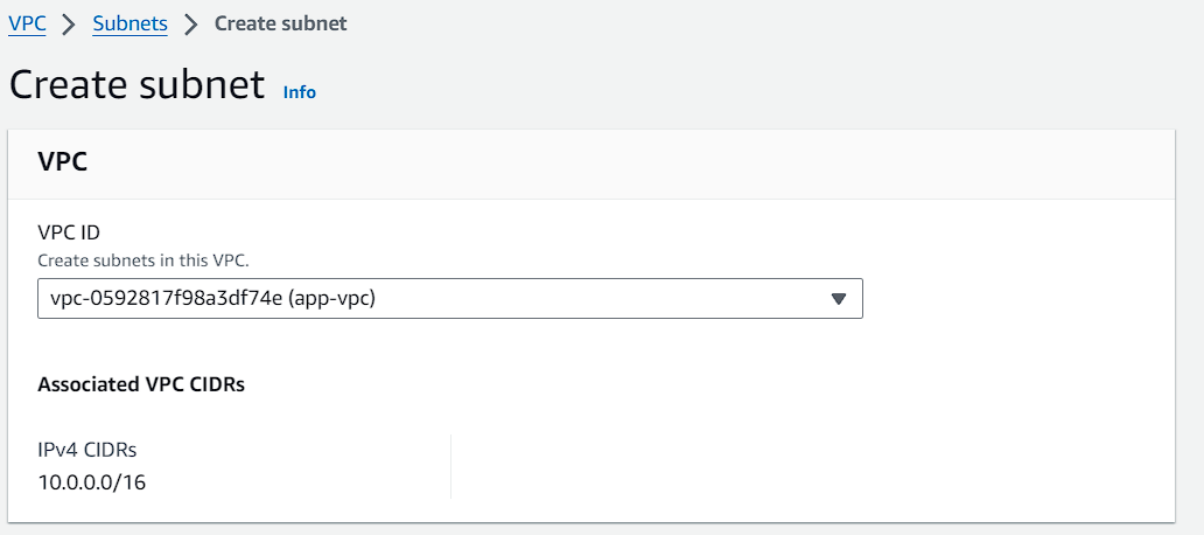


🤓 Step 3: Creating Subnet

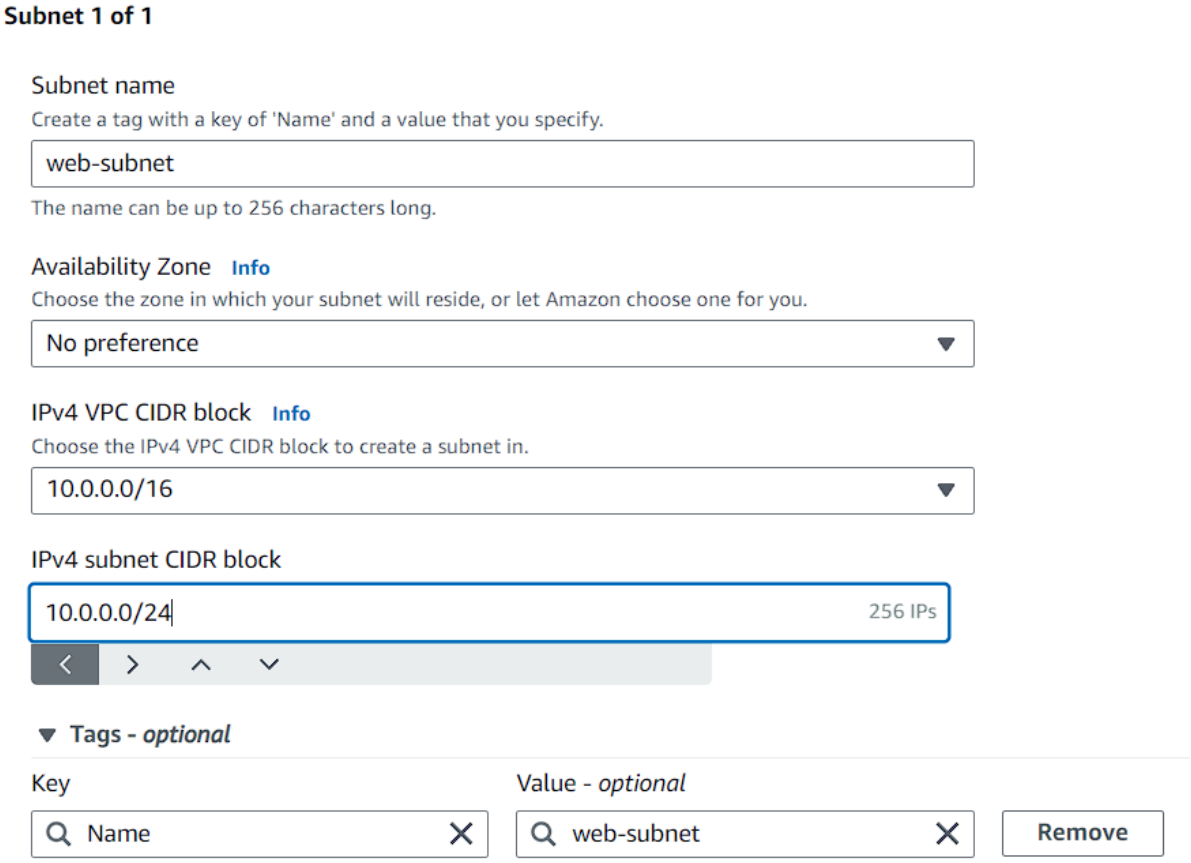
1. Now if you will go to subnets. You will see three subnets in place. But they belong to the default VPC.
2. Here you are going to create new subnets for your VPC. So, for that click on Create subnet.



3. While creating subnets you need to choose the VPC first so, that you define which VPC you want for your subnets.



4. Now after scrolling down a little, you have to give your subnet a name.
5. Then choose one of the availability zones, so, that you can define which zone you want for your subnet.
6. After that you need write the IPv4 subnet CIDR block for it.



7. Once, it is done now if you will scroll down a little again. You will see that you have an option to add new subnet. Click on it.

8. Now you will see that you can again create a subnet.
9. Now give it a name, whatever suits you.
10. Then for it choose another availability zone.
11. Then give it another CIDR block address.
12. And create your subnets.

Subnet 2 of 2

Subnet name

Create a tag with a key of 'Name' and a value that you specify.

db-subnet

The name can be up to 256 characters long.

Availability Zone Info

Choose the zone in which your subnet will reside, or let Amazon choose one for you.

Asia Pacific (Mumbai) / ap-south-1b

IPv4 VPC CIDR block Info

Choose the IPv4 VPC CIDR block to create a subnet in.

10.0.0.0/16

IPv4 subnet CIDR block

10.0.1.0/24 256 IPs

Tags - *optional*

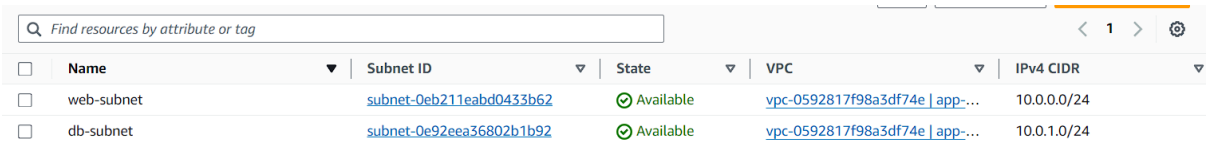
Key | Value - *optional*

Name | db-subnet | Remove

Add new tag

You can add 49 more tags.

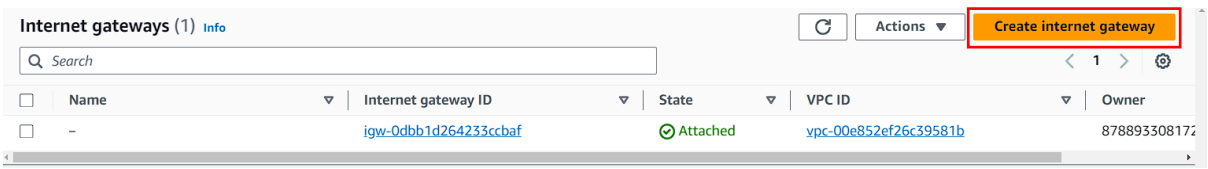
13. Now you will see that your subnets are created.



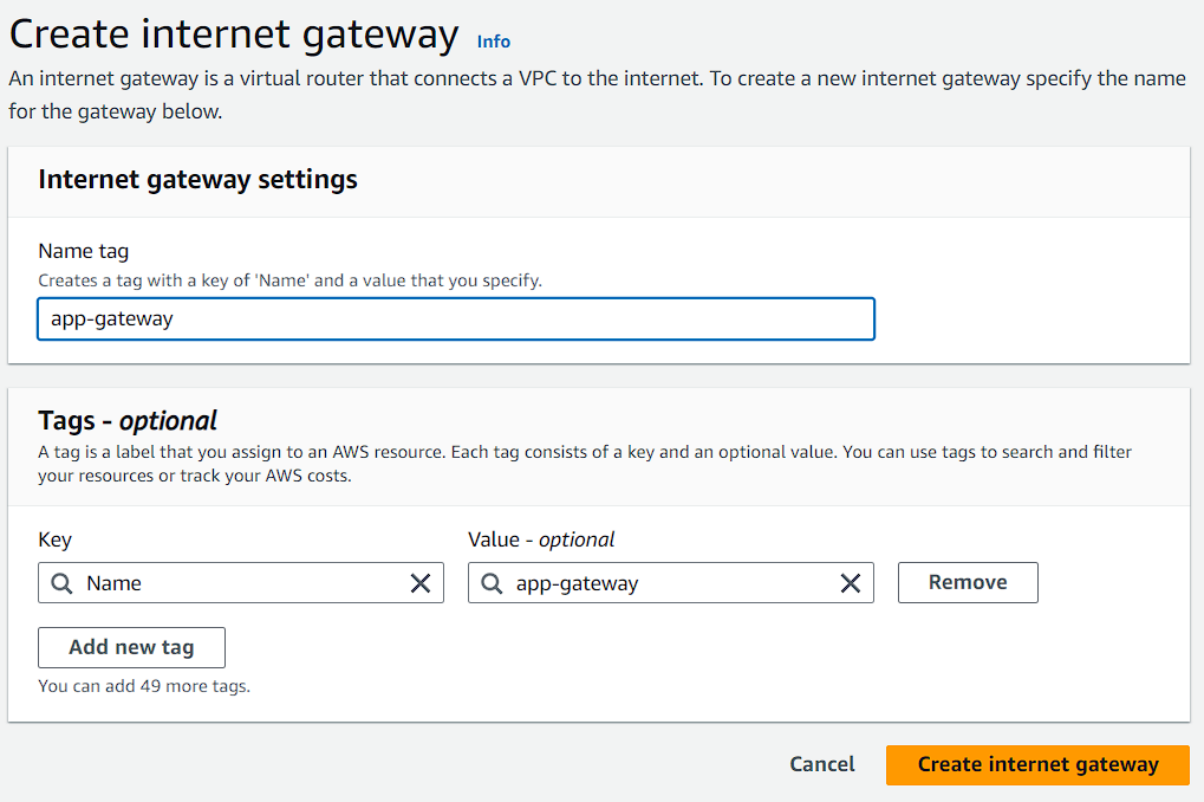
Step 4: Creating Internet Gateway (IGT)

An Internet Gateway (IGW) is a component of Amazon Web Services (AWS) that acts as a bridge between a Virtual Private Cloud (VPC) and the public internet. It allows for network traffic to travel between the two networks, enabling inbound and outbound connections from resources within the VPC.

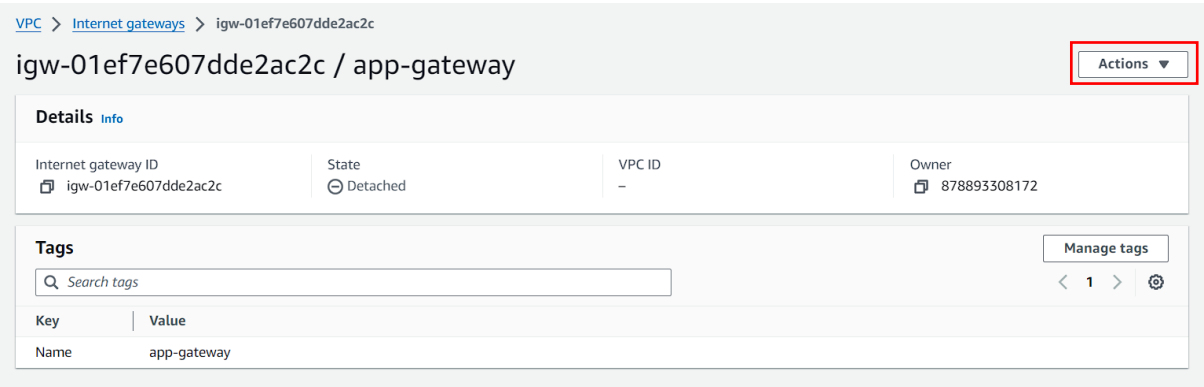
1. To create Internet gateway, it is very simple. Just navigate to internet gateways.
2. You will see an internet gateway already there attached with your default VPC.
3. Now you need to click on Create internet gateway.



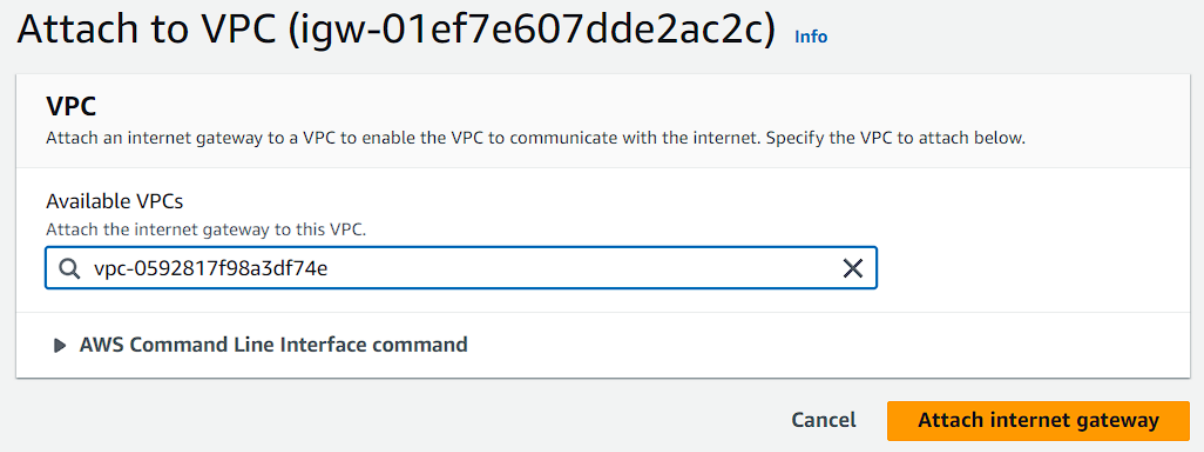
4. You just need to give it a name and then click on create internet gateway.



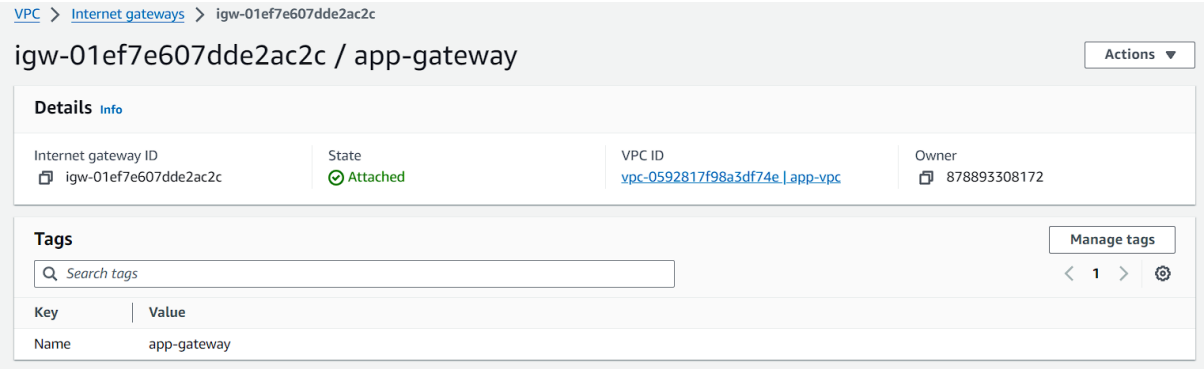
5. You will see that your internet gateway is created but it is not attached to any of the VPC.
6. It is because you need to attach it with the VPC of your choice.
7. To attach your internet gateway, you need to click on Actions. Then click on attach VPC.



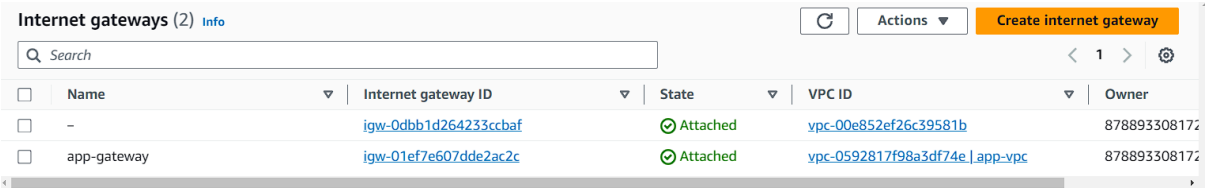
8. Now you need to choose your VPC and click on Attach internet gateway.



9. Once you have attached your IGT, then it will show in attached state.

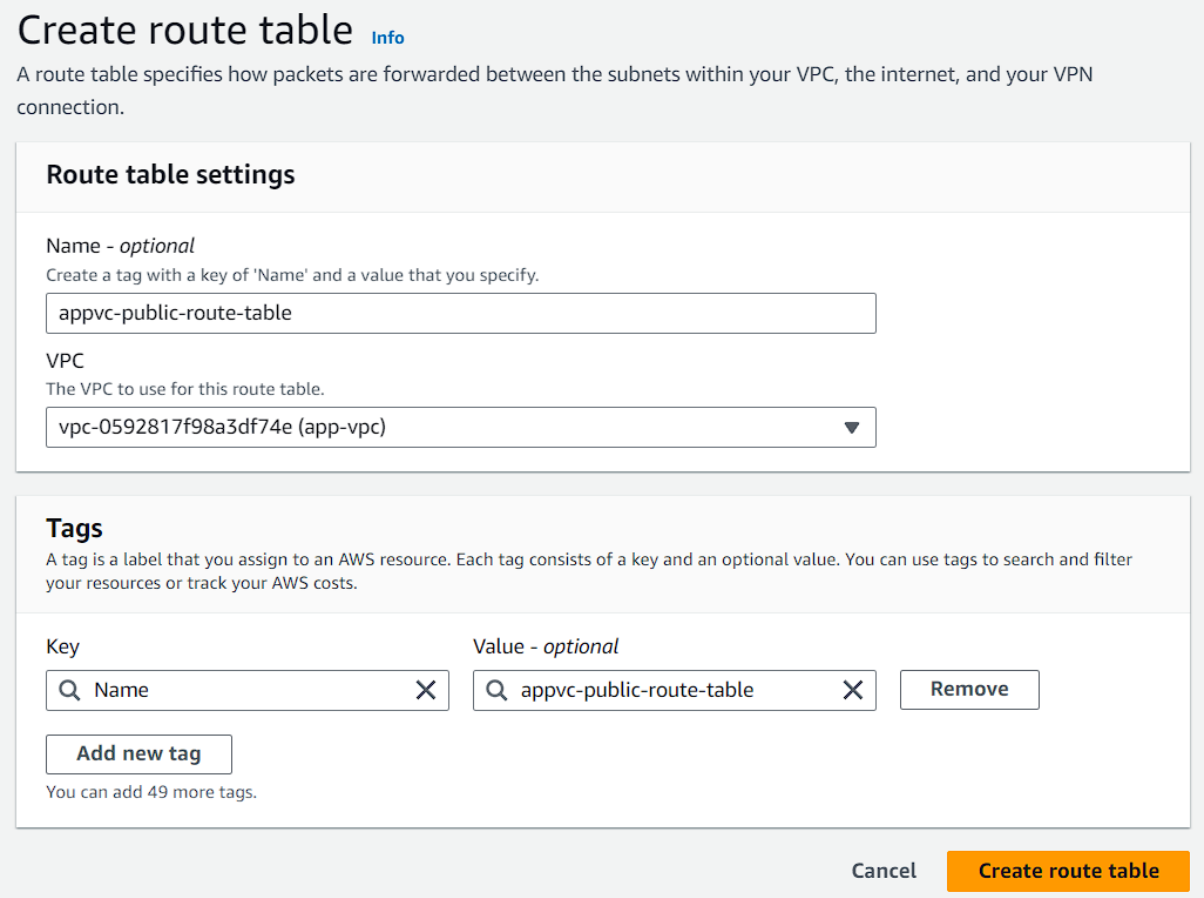


10. If you go back, you will see that you have two IGT attached to two different VPCs.



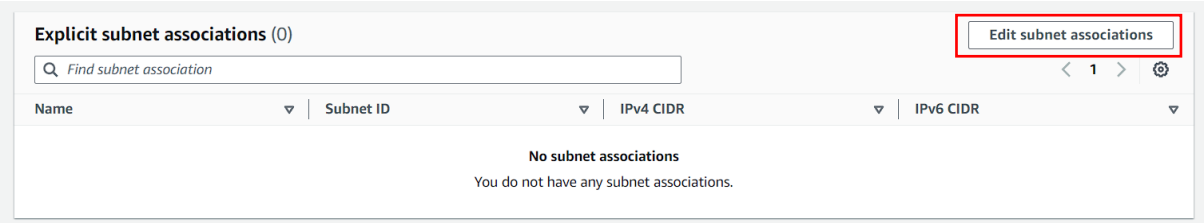
11. Now you have your internet gateway attached onto the VPC, but your subnets have no knowledge on how to route traffic onto the Internet. That's something that you explicitly have to tell the subnets.
12. In this particular virtual private cloud network, you have a local router. This router ensures that traffic moves from a source machine onto the destination within the virtual private cloud itself.
13. Now, you should not be adding a route for the Internet or to this route table because if you do that, it would also be applicable onto your **DB subnet** because your **DB subnet** would also be attached onto this same default route table.
14. So, hence what you need to do is you need to create now a new route table.
15. Attach that route table onto your **Web subnet** that's going to behave as a **public subnet** and you will leave this main route table attached onto **DB subnet.** So, this will behave as a **private subnet.**
16. Now navigate to route table and click on create route table.
17. Here you need to give your route table an appropriate name.

18. Then select your VPC and click on create route table.

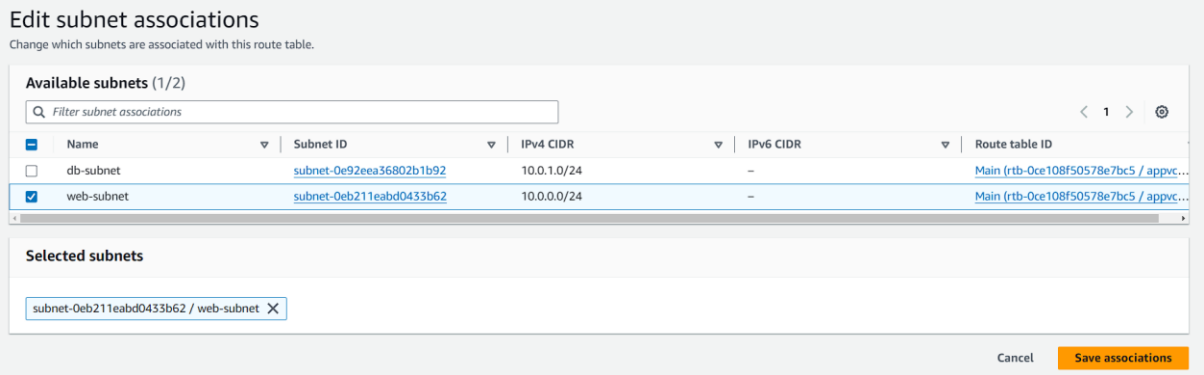


19. Once your route table is created. Go to subnet association.

20. In subnet associations click on edit subnet associations.

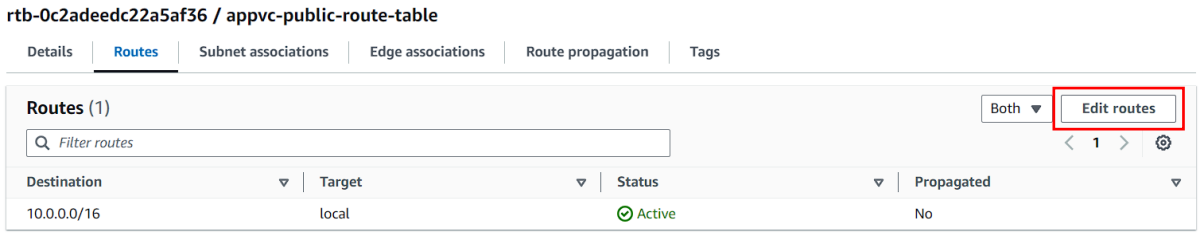


21. Now here you need to select your web subnet and click on save associations.

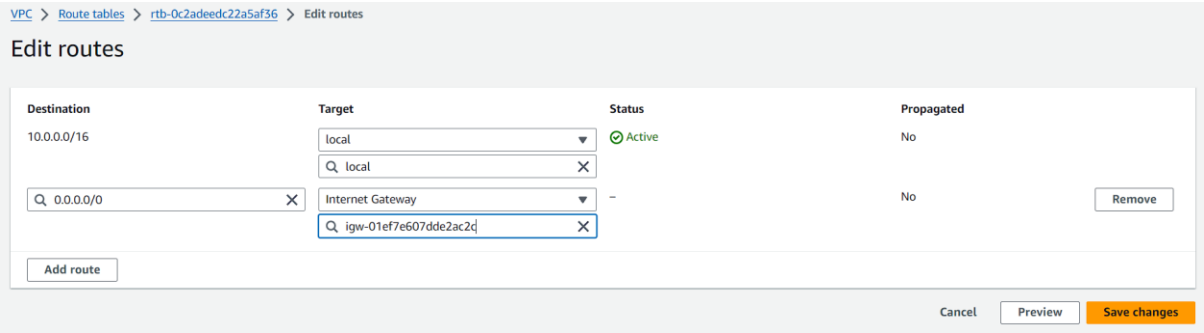


22. So now in this way, you have linked this new route table onto your Web subnet.
23. Now you need to go to routes.

24. There click on edit routes.



25. You'll choose to add a route in the route. You will put the destination as 0.0.0.0/0. This is a representation of traffic for the internet.
26. You will choose the target as your internet gateway.
27. There are different types of services that you can choose as the target. You will choose the Internet Gateway. The gateway that you have.
28. And then you will click on Save Changes.



29. Now if you will go back to subnets and select you web subnet you will see that it has been attached to IGT.

30. So now this is behaving as a public subnet because traffic can now reach the resources defined in the subnet just because of the route that has been added here.
31. So, now any traffic for the Internet will be routed via the Internet Gateway. And the Internet Gateway has the facility of pushing traffic from the EC2 instance onto the internet and also getting traffic from the Internet onto the EC2 instance.