ADVANCED CLOUD COMPUTING - AWS SOLUTION CERTIFICATE - APPLIED

Assignment

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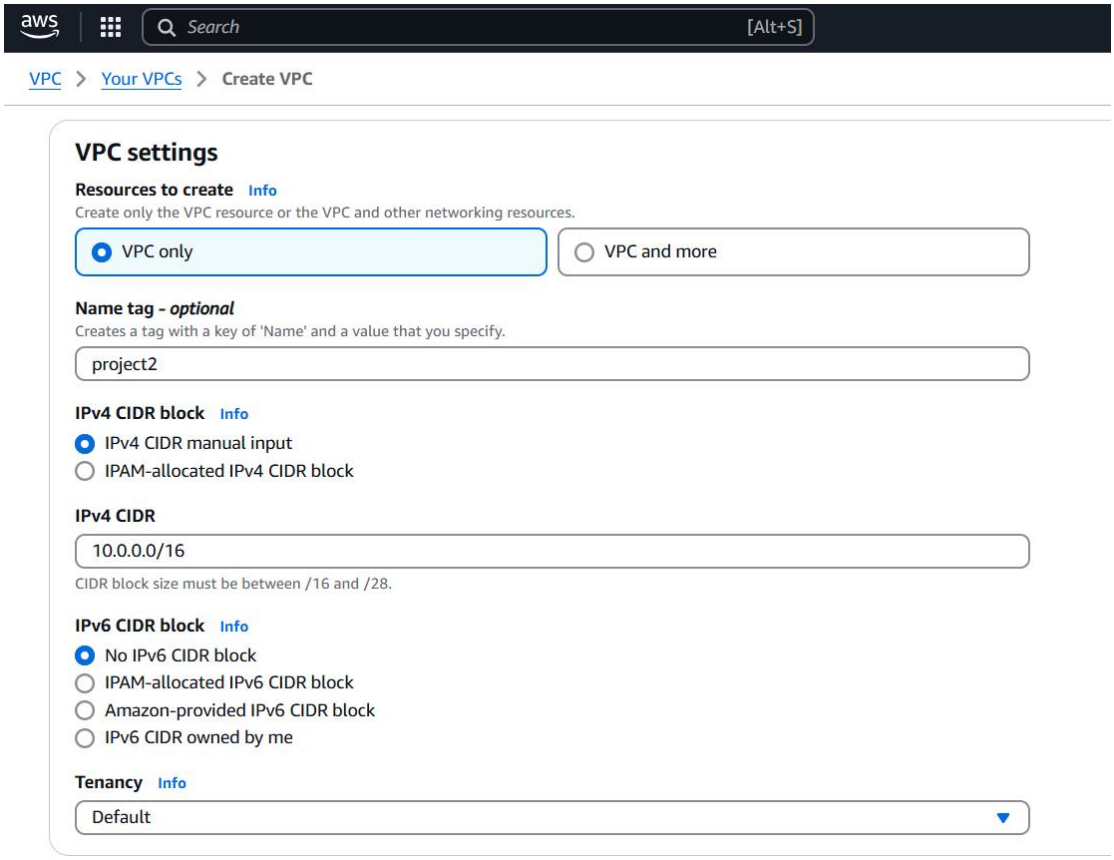
Step 1: Create a VPC

Go to the AWS Console → VPC Service.

1. Click "Create VPC".
2. Enter the following details:-

- Name tag: e.g., project2
- IPv4 CIDR block: e.g., 10.0.0.0/16
- IPv6 CIDR block: No IPv6 CIDR block.
- Tenancy: Default.
- The CIDR block 10.0.0.0/16 is chosen to allow a wide range of IP addresses for future scalability.



Then Click **"Create VPC"**.

Step 2: Create Subnets

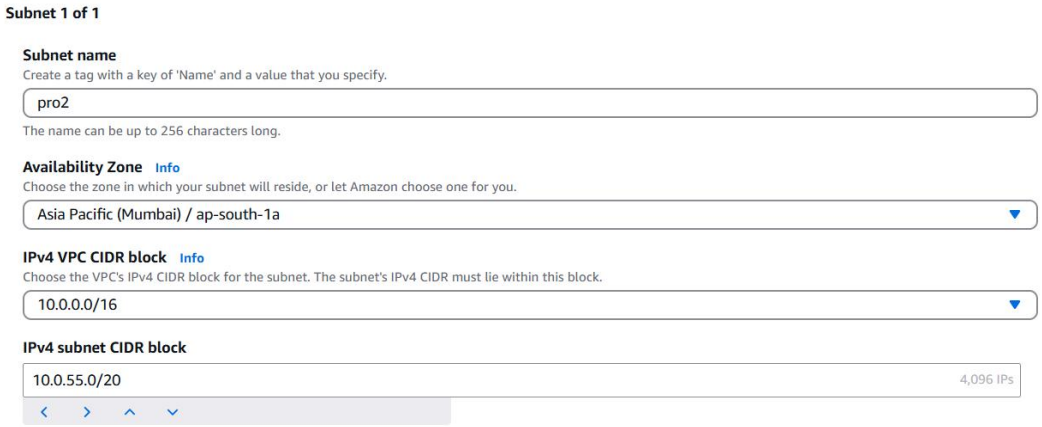
Public subnets are designed to host resources like web servers accessible via the internet. Private subnets host sensitive resources, such as databases, that require restricted access.

Public Subnet 1:

1. Go to Subnets → Click "Create subnet".

2. Select the VPC created in Step 1.
3. Enter:-

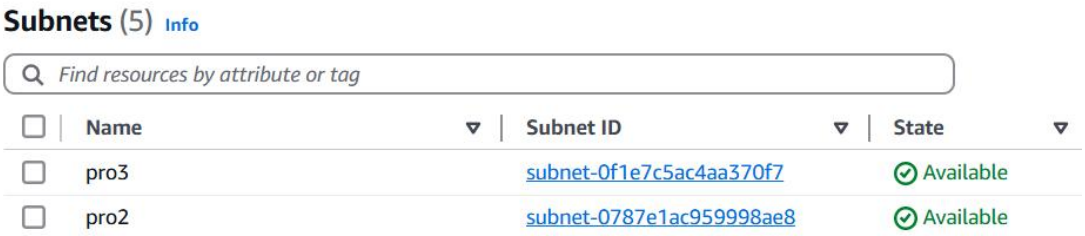
- Name tag: e.g., pro2
- Availability Zone: e.g., ap-south-1a.
- IPv4 CIDR block: e.g., 10.0.55.0/20.



Public Subnet 2:

Repeat the process.

- **Name tag:** e.g., pro3.
- **Availability Zone:** e.g., ap-south-1c.
- **IPv4 CIDR block:** e.g., 10.0.65.0/20.
- Click **"Create subnet"**.



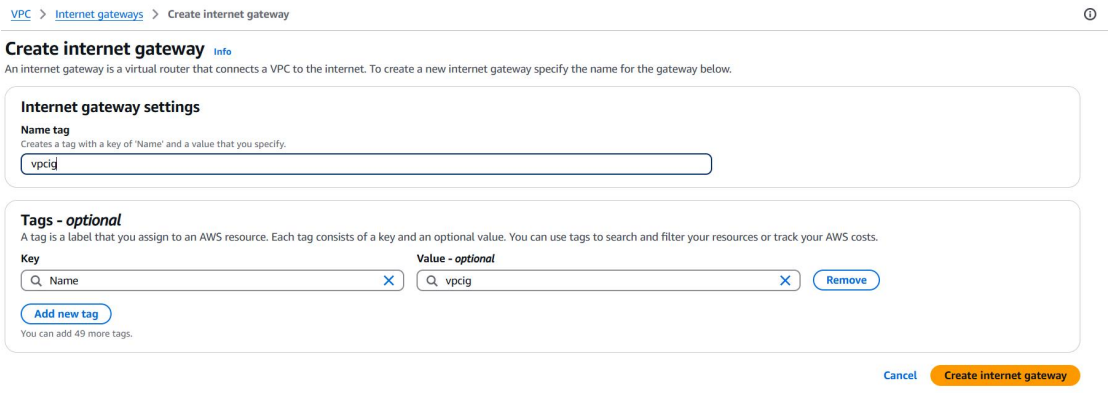
Step 3: Create an Internet Gateway

An Internet Gateway allows resources in public subnets to communicate with the internet.

Go to **Internet Gateways** → Click **"Create Internet Gateway"**.

Enter:

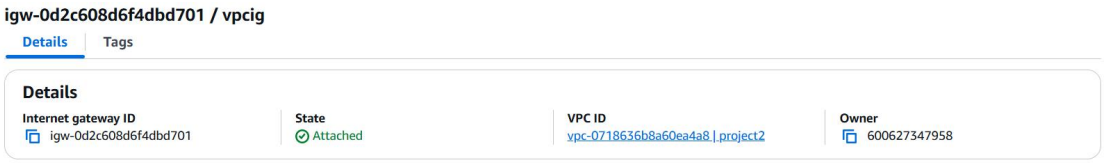
- **Name tag:** e.g., vpcig.



Click **"Create Internet Gateway"**.

Attach the Internet Gateway to the VPC:-

- Select the created Internet Gateway → Click **"Actions"** → **"Attach to VPC"**.
- Select your VPC (e.g., project2) → Click **"Attach"**.

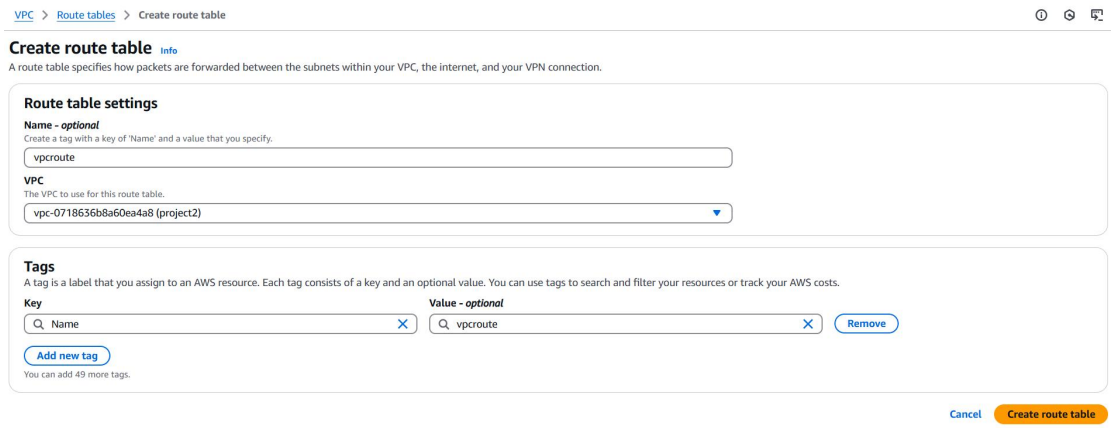


Step 4: Create a Route Table

Go to Route Tables → Click "Create route table".

Enter:

- Name tag: e.g., vpcroute.
- Select the VPC (e.g., project2).
- Click "Create Route Table".



Add a route to the Route Table:-

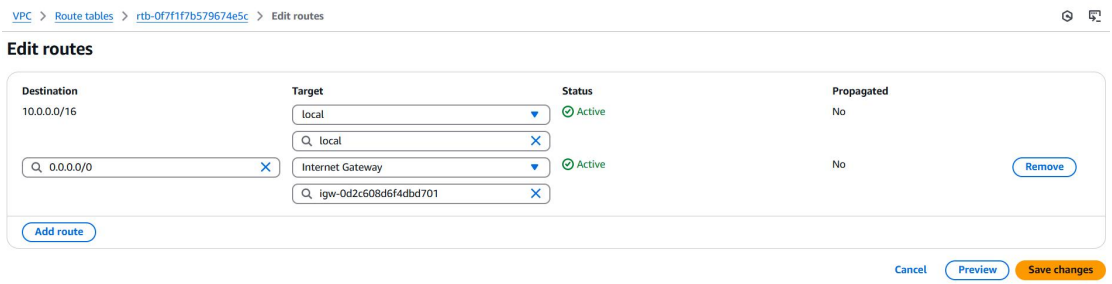
Select the created route table.

Go to the **Routes** tab → Click **"Edit routes"**.

Add the following:

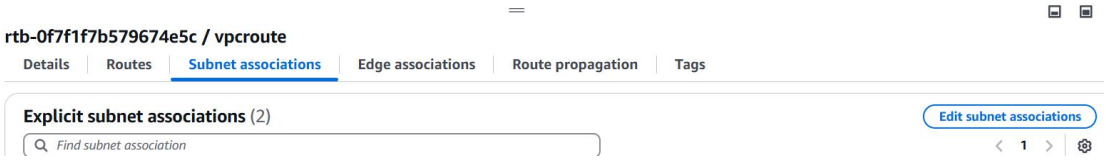
- **Destination:** 0.0.0.0/0
- The 0.0.0.0/0 destination ensures that traffic to any IP address outside the VPC is routed through the Internet Gateway.
- **Target:** Select the Internet Gateway (e.g., vpcig).

Click **"Save changes"**.

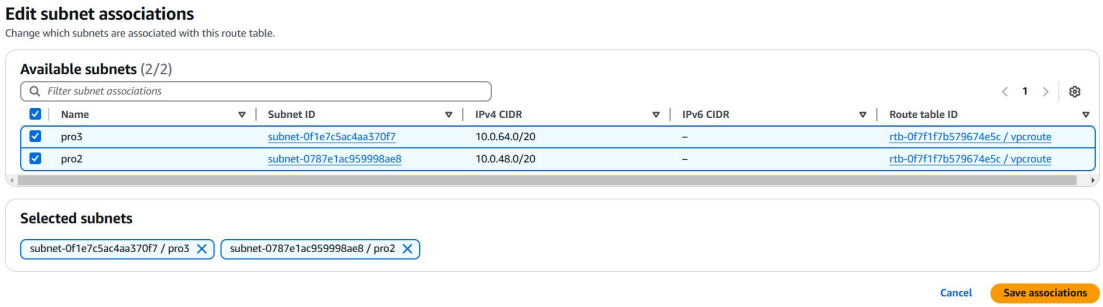


Step 5: Attach Subnets to the Route Table

- Select the Route Table created in Step 4 (e.g., vpcroute).
- Go to the **Subnet associations** tab → Click **"Edit subnet associations"**.



- Select the subnets created earlier (pro2 and pro3).
- Click **"Save"**.
- Associating subnets with the route table enables the public subnets to use the Internet Gateway for internet communication.



Step 6 : Verify in Resource Map

Navigate to the VPC Dashboard:

- Go to **VPC** in the AWS Console.

Select Your VPC:

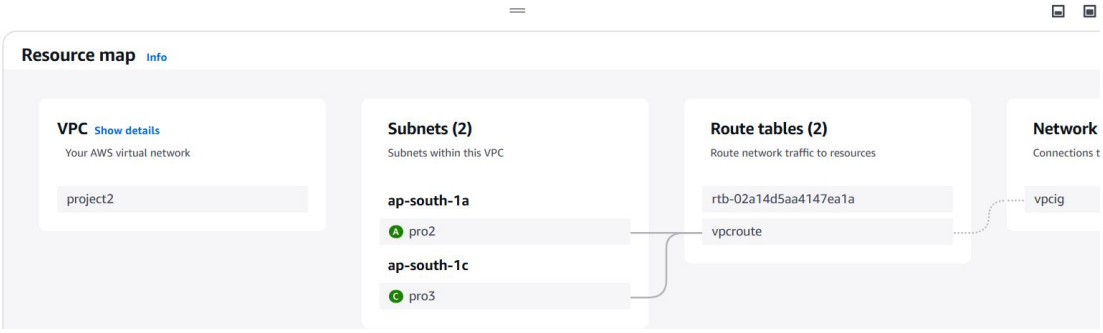
- Locate the VPC you created (e.g., project2).
- Click on the VPC's name or select it.

Open the Resource Map:

- On the VPC details page, scroll to find the **Resource Map** section (usually visible at the top or in the sidebar).
- Click **"Show details"** if the resource map is collapsed.

Test by launching instances:

- In pro2 (public subnet), assign a public IP, and verify internet connectivity (e.g., ping google.com).
- In pro3 (private subnet), verify isolation (cannot directly access the internet).



Troubleshooting tip:

- If the instance cannot access the internet, ensure the security group allows outbound HTTP/HTTPS traffic and SSH access.