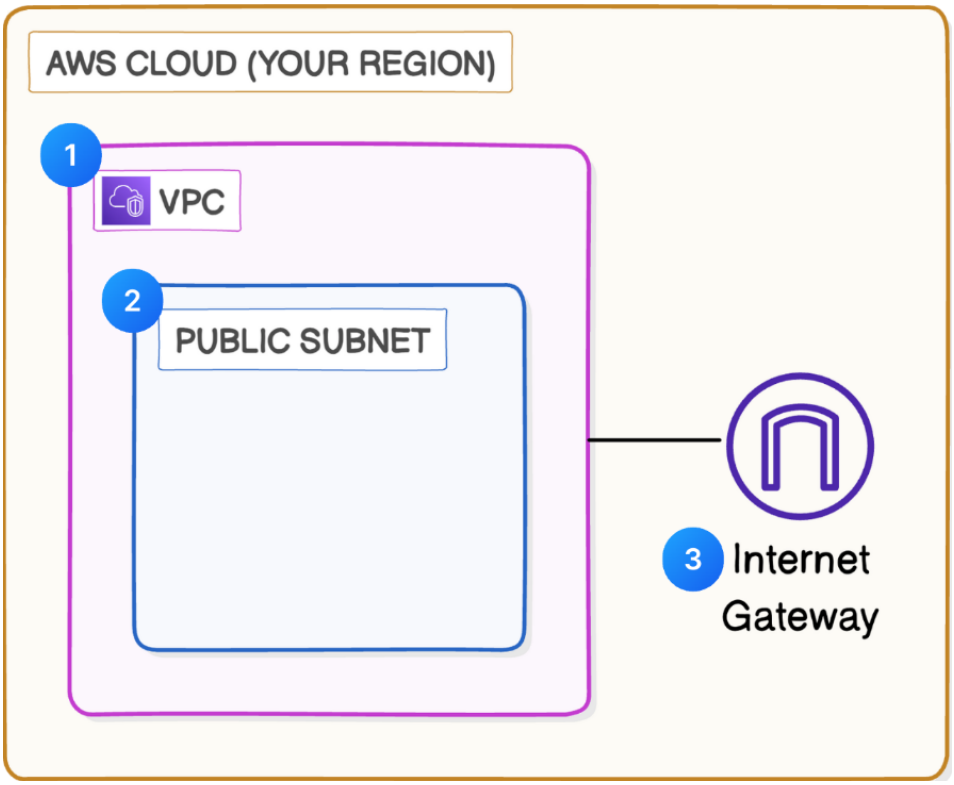
Build a Virtual Private Cloud



Introducing Today's Project!

What is Amazon VPC?

Amazon VPC is a service that lets you create a logically isolated network within AWS. It provides full control over IP address ranges, subnets, routing, and security, allowing secure communication between AWS resources and the internet or on-premises.

How I used Amazon VPC in this project

In today's project, I used Amazon VPC to create a secure, isolated network within AWS. I set up a VPC, created subnets for organizing resources, and attached an internet gateway to enable internet access for instances in the public subnet.

One thing I didn't expect in this project was...

One thing I didn't expect in this project was how seamlessly AWS handles the creation of default resources like the default VPC and internet gateway. This made it easier to start the setup without needing to manually configure basic network component.

This project took me...

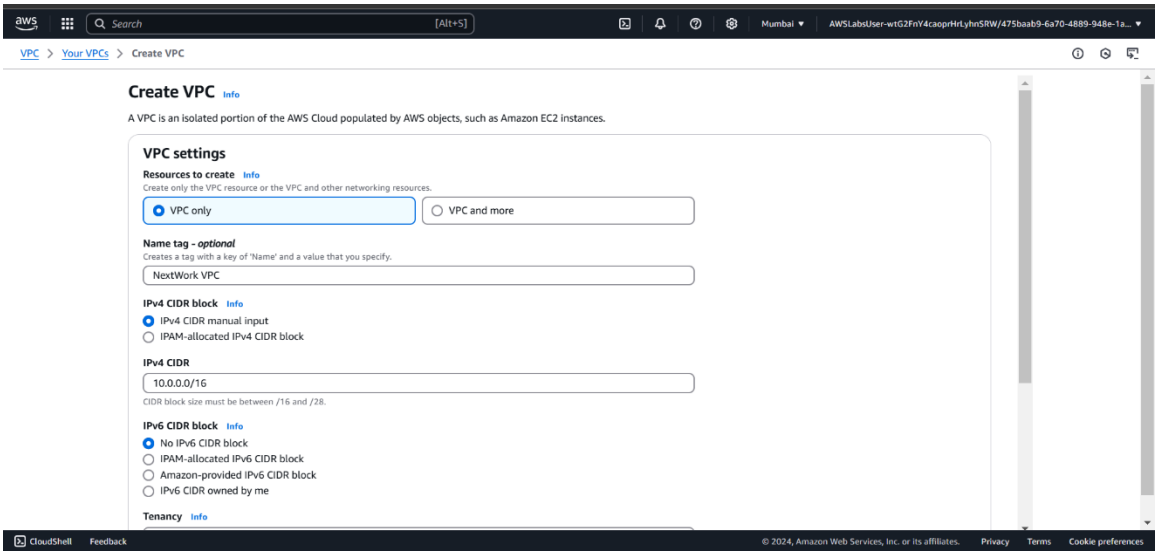
This project took me One hour to complete. Santhosh Babu NextWork Student NextWork.org Virtual Private Clouds.

Virtual Private Clouds VPCs

VPCs are Virtual Private Clouds, isolated networks in cloud environments. They enable users to deploy resources like servers and databases securely with customizable IP ranges, subnets, routing, and firewall settings for enhanced privacy and control.

There was already a default VPC in my account ever since my AWS account was created. This is because AWS automatically creates a default VPC to simplify the setup process, enabling users to deploy resources without manually configuring networking.

IPv4 stands for Internet Protocol version 4, written as four sets of numbers (e.g., 192.168.0.1), with each ranging from 0 to 255. This allows for 4,294,967,296 possible addresses. Each device in a network, like a VPC, must have a unique IPv4 address.

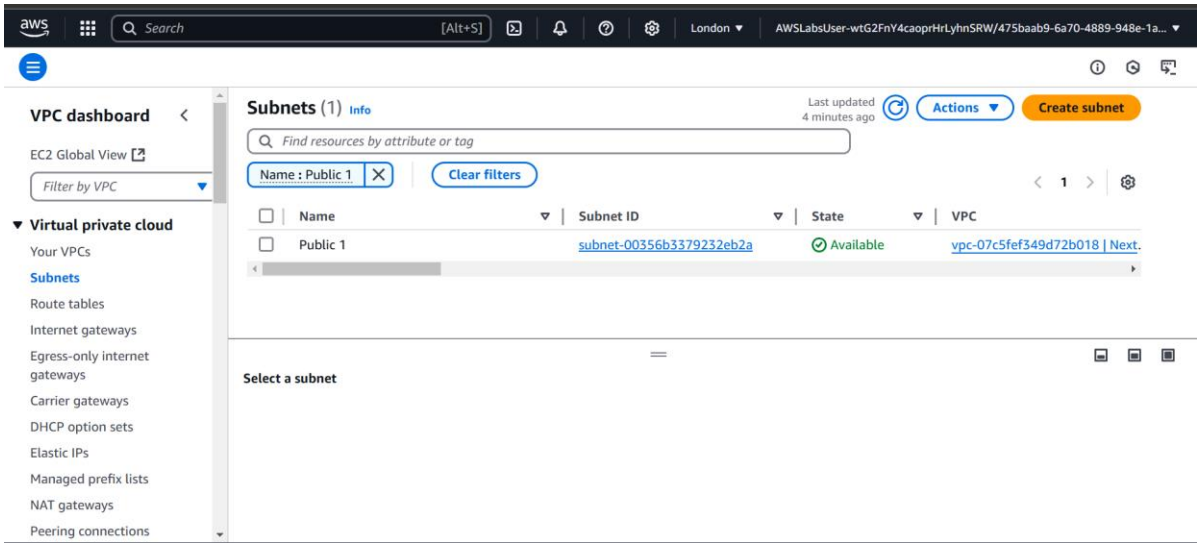


Subnets

Subnets are smaller segments of a network within a VPC, used to organize and isolate resources.There are already subnets existing in my account, one for every Availability Zone, allowing efficient distribution and management of resources across zones.

Once I created my subnet, I enabled auto-assign public IPv4 addresses. This setting ensures that any EC2 instances launched in the subnet automatically receive a public IP address, allowing them to be accessed from the internet without manual setup.

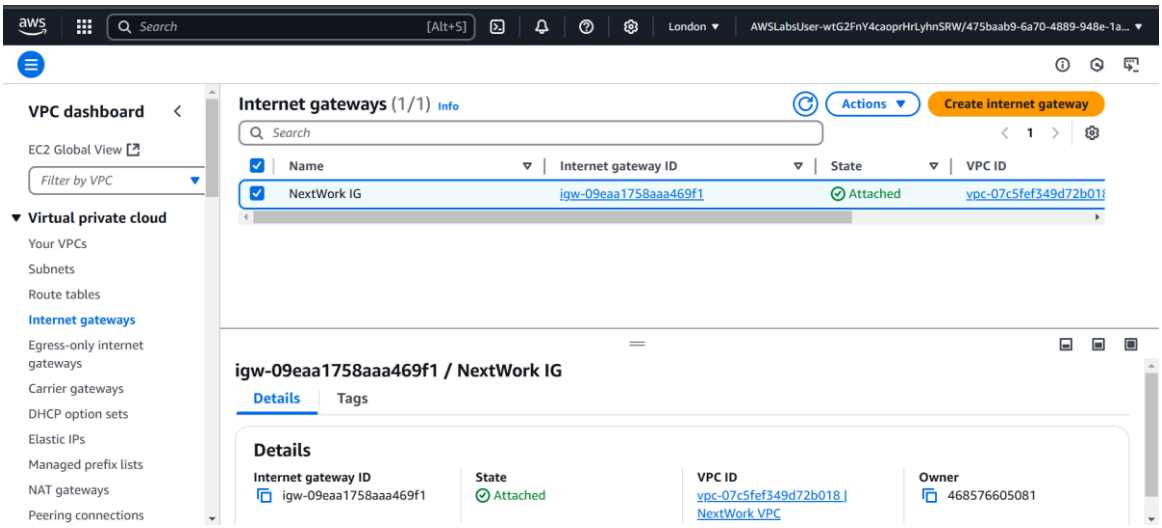
The difference between public and private subnets is that public subnets have internet access via an internet gateway, while private subnets do not. For a subnet to be public, it must have a route to the internet gateway and auto assign public IPs.



Internet gateways

Internet gateways are key to making applications available on the internet. By attaching an internet gateway, your instances can access the internet and be accessible to external users.

Attaching an internet gateway to a VPC means that resources in the VPC, such as EC2 instances, can access the internet. If I missed this step, my instances wouldn't be able to communicate with external networks or be accessible from the internet.



Today you've learnt how to:

1. ☁️ **Create a VPC:** You've taken your first steps by setting up a Virtual Private Cloud (VPC) using Amazon VPC.
2. 🚧 **Create subnets:** Moving deeper into your VPC, you created subnets, which act like neighborhoods within your city, each with unique access rules. You learned the difference between public and private subnets and set up a subnet to allow instances within it to automatically receive public IP addresses, making them accessible from the internet.
3. 🚪 **Set up an internet gateway:** Lastly, you added an internet gateway to your VPC, acting as the main gate that allows data to flow in and out. This setup is essential for any applications that require internet access, such as web servers. You've configured the gateway and linked it to your VPC, ensuring your public instances can reach the outside world and vice versa.
4. 🚦 **Bonus - configure IP addresses and CIDR blocks:** You've configured your VPC with an IPv4 CIDR block, understanding that IP addresses are like street addresses for your resources! You explored how different CIDR blocks dictate the size and scale of your VPC.