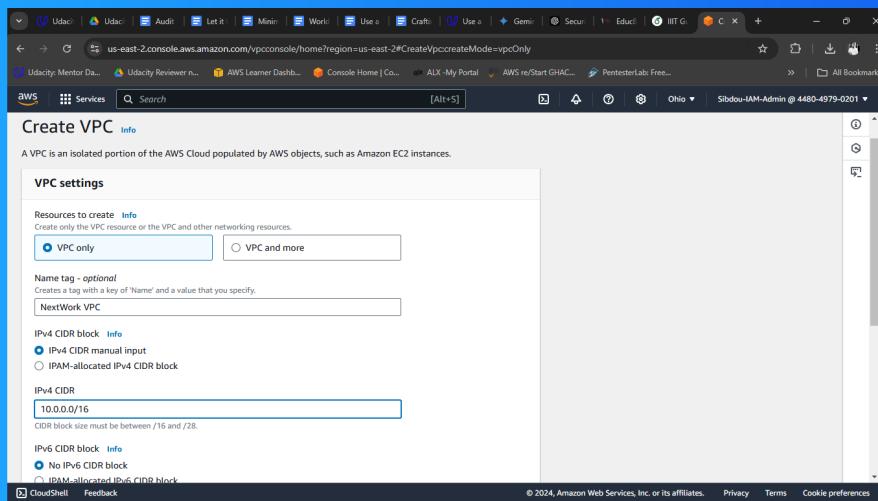




# Build a Virtual Private Cloud



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# Introducing Today's Project!

## What is Amazon VPC?

Amazon VPC is a virtual private cloud service that allows users to create isolated networks within the AWS cloud. It's useful for enhancing security, controlling network configurations, and managing resources effectively.

## How I used Amazon VPC in this project

In today's project, I used Amazon VPC to create a secure network environment for my instances. I configured subnets and an internet gateway to manage traffic, access the internet and enhance security.

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

I didn't expect the level of customization available with Amazon VPC. The ability to define specific subnets and security settings gave me much more control over my network configuration than I anticipated.

## This project took me...

Less than half an hour.

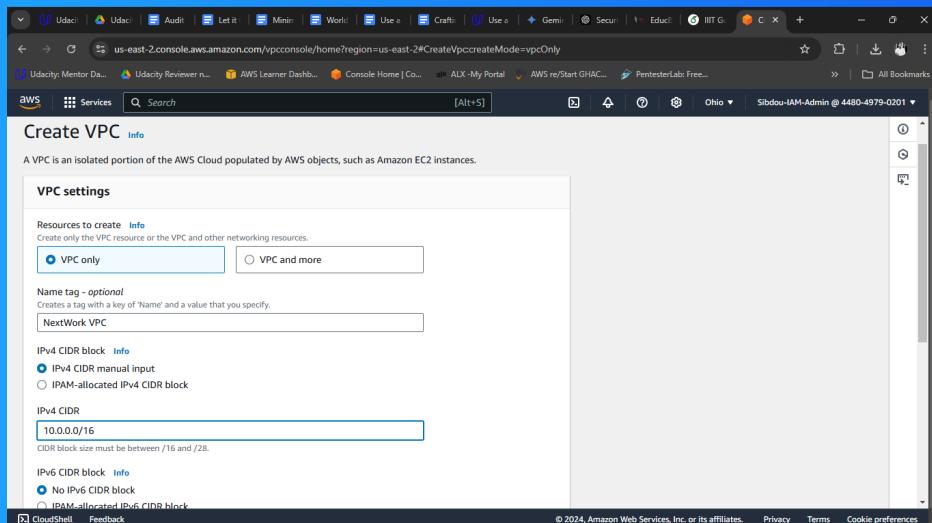


# Virtual Private Clouds (VPCs)

VPCs are Virtual Private Clouds that provide isolated virtual networks within the cloud. They allow users to define their own network configurations, including IP address ranges, subnets, and security settings.

There was already a default VPC in my account ever since my AWS account was created. This is because AWS automatically sets up a default VPC to simplify the process of launching resources without manual configuration.

To set up my VPC, I had to define an IPv4 CIDR, which means specifying a range of IP addresses in a compact format. This helps to allocate and manage network addresses within the VPC efficiently.





# Subnets

Subnets are segments within a VPC that divide the network into smaller, manageable pieces. They help organize resources, improve security, and control traffic flow by isolating different workloads.

There are already subnets existing in my account, one for every Availability Zone in my region. This is to ensure that resources can be launched in multiple zones for high availability and fault tolerance.

I named my subnet Public 1, but that doesn't automatically make my subnet a public subnet. For a subnet to be considered public, it has to be associated with a route table that directs traffic to an internet gateway.

The screenshot shows a browser window for the AWS VPC console at [us-east-2.console.aws.amazon.com/vpcconsole/home?region=us-east-2#subnets:subnetId=subnet-0c9a5ce20366e182f](https://us-east-2.console.aws.amazon.com/vpcconsole/home?region=us-east-2#subnets:subnetId=subnet-0c9a5ce20366e182f). The title bar indicates the user is Sibdou-IAM-Admin @ 4480-4979-0201. The main content area displays a success message: "You have successfully created 1 subnet: subnet-0c9a5ce20366e182f". Below this, a table lists the subnet details:

Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6
Public 1	subnet-0c9a5ce20366e182f	Available	vpc-0d6d1c851dfd24149   Next...	10.0.0.0/24	-

At the bottom of the table, there is a link: "Select a subnet". The footer of the browser window includes links for CloudShell, Feedback, and navigation icons.

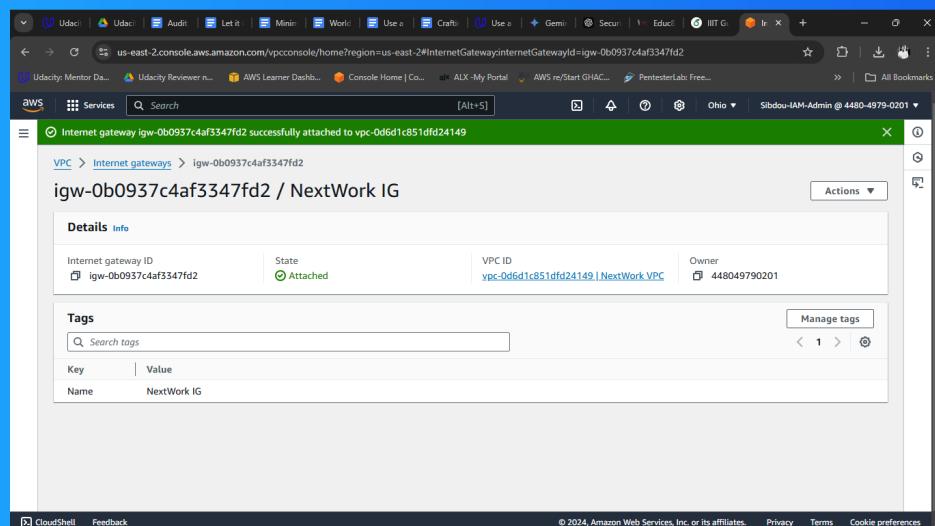
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# Internet gateways

Internet gateways are highly available, horizontally scaled VPC components that allow communication between instances in a VPC and the internet, enabling outbound and inbound traffic for public subnets.

Attaching an internet gateway to a VPC means enabling instances within the VPC to communicate with the internet, allowing for inbound and outbound traffic, and making it possible to host public-facing applications.





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