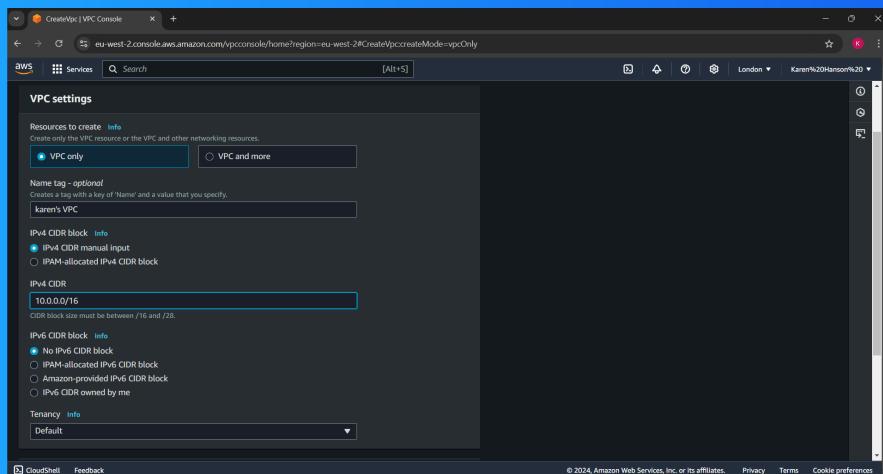




# Build a Virtual Private Cloud



Karen Hanson





# Introducing Today's Project!

## What is Amazon VPC?

Amazon VPC (Virtual Private Cloud) is a service that enables users to create a logically isolated network within the AWS cloud, allowing for customizable network configurations, such as IP ranges and subnets.

## How I used Amazon VPC in this project

In today's project, I used Amazon VPC to create a secure network for my application. I set up a VPC with a custom CIDR block and created public and private subnets. An internet gateway was attached for internet access with route tables managing traffic.

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

I was surprised by the variability in latency when accessing resources across different subnets and Availability Zones. It required additional optimization efforts to ensure consistent performance.

## This project took me...

It took me a maximum of 2 hours to complete this project

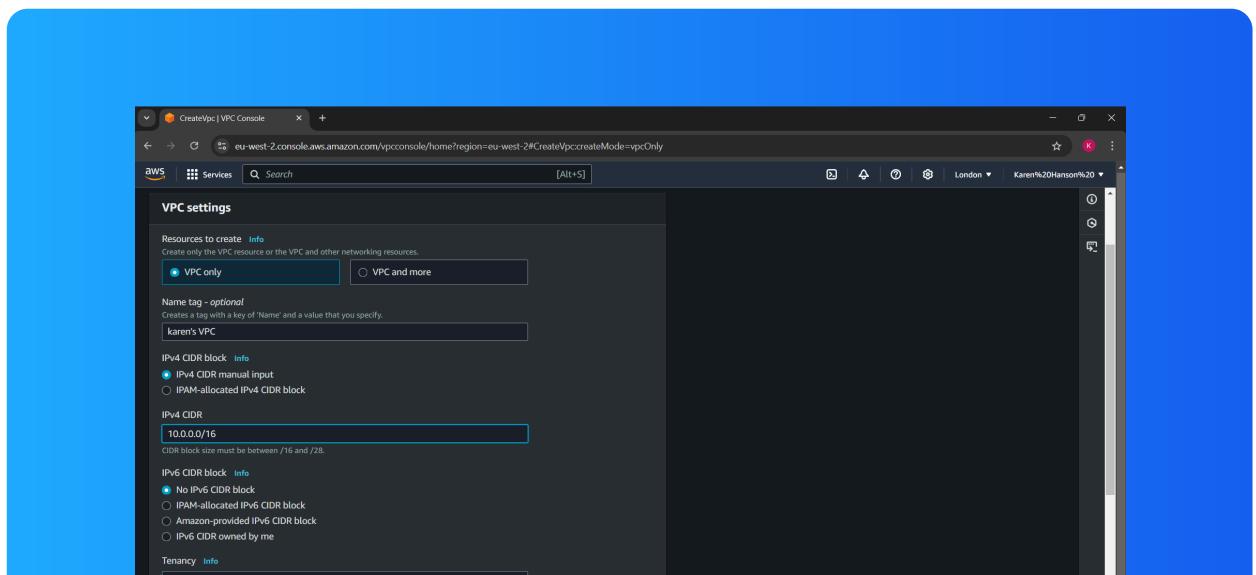


# Virtual Private Clouds (VPCs)

VPCs are private networks within a public cloud environment that provide secure, isolated spaces for hosting resources. They allow customizable network configurations, such as IP addressing and subnets, and support internet access control.

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 networking for new users, allowing resource deployment right away without manual VPN to configure

To set up my VPC, I had to define an IPv4 CIDR, which means specifying an IPv4 Classless Inter-Domain Routing (CIDR) block which represents a range of IP addresses that can be used within the VPC. CIDR notation uses an IP address followed by a suffix





# Subnets

Subnets are subdivisions of a VPC's IP address range, allowing a VPC to be segmented into smaller, manageable networks. Each subnet is assigned a unique CIDR block within the VPC's main CIDR block, enabling resources to be grouped by purpose, security

There are already subnets existing in my account, one for every Availability Zone in each AWS region. AWS provides these default subnets to make it easy to start using the network right away without needing to configure subnets manually.

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 has a route directing traffic to an internet gateway. This internet gate

Subnets (7) <a href="#">Info</a>						
	Name	Subnet ID	State	VPC	IPv4 CIDR	IP Range
<input type="checkbox"/>	RDS-Pvt-subnet-2	<a href="#">subnet-07665b8b95d398690</a>	<span>Available</span>	<a href="#">vpc-030993043380a0e81</a>	172.31.48.128/25	-
<input type="checkbox"/>	-	<a href="#">subnet-0982ca3e89a7465e1</a>	<span>Available</span>	<a href="#">vpc-030993043380a0e81</a>	172.31.0.0/20	-
<input type="checkbox"/>	RDS-Pvt-subnet-1	<a href="#">subnet-05c7a78e82d8c0ddc</a>	<span>Available</span>	<a href="#">vpc-030993043380a0e81</a>	172.31.48.0/25	-
<input type="checkbox"/>	RDS-Pvt-subnet-3	<a href="#">subnet-0ae61e9b66a765a2</a>	<span>Available</span>	<a href="#">vpc-030993043380a0e81</a>	172.31.49.0/25	-
<input type="checkbox"/>	-	<a href="#">subnet-0ce4e5bce8ce5f3e6</a>	<span>Available</span>	<a href="#">vpc-030993043380a0e81</a>	172.31.32.0/20	-
<input type="checkbox"/>	-	<a href="#">subnet-00510cb21cf61c5b</a>	<span>Available</span>	<a href="#">vpc-030993043380a0e81</a>	172.31.16.0/20	-
<input type="checkbox"/>	Public-01 ↴	<a href="#">subnet-0a70c55bbe43514a</a>	<span>Available</span>	<a href="#">vpc-0fe7566c74d8ca2bc   karen...</a>	10.0.0.0/24	-

# Internet gateways

Internet gateways are horizontally scaled, redundant, and highly available VPC components that allow communication between resources in a VPC and the internet. They serve as a bridge between the VPC and the public internet, enabling instances in public

Attaching an internet gateway to a VPC means that the VPC can enable communication between its resources and the public internet allowing instances within public subnets to have internet connectivity, facilitating inbound and outbound traffic.

Internet gateway igw-02266e131ffcdfdb successfully attached to vpc-0fe7566c74d8ca2bc					
Internet gateways (2) <a href="#">Info</a>					
<input type="text"/> <a href="#">Search</a>					
Name	Internet gateway ID	State	VPC ID	Owner	
-	igw-0e9b7120a1f89c2c1	Attached	vpc-030993043380a0e81	869935111494	<a href="#">Actions</a>
Karen's IG	igw-02266e131ffcdfdb	Attached	vpc-0fe7566c74d8ca2bc   karen's VPC	869935111494	<a href="#">Actions</a>



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