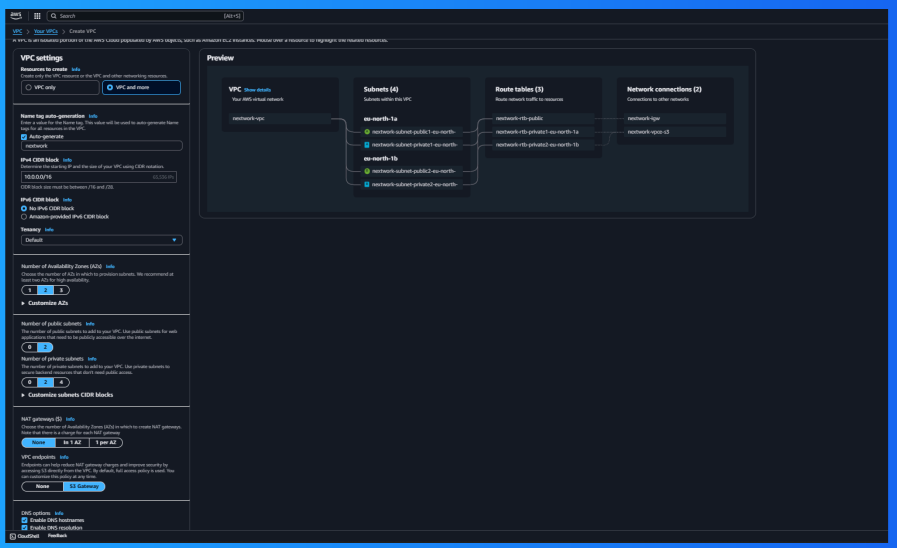
NextWork.org

Launching VPC Resources

Honesty Dogunro



H
Honesty Dogunro
NextWork Student

Introducing Today's Project!

What is Amazon VPC?

Amazon VPC (Virtual Private Cloud) lets you create a private, isolated network within AWS. It's useful for securely running resources, customizing IP ranges, and controlling traffic with subnets, route tables, and security groups.

How I used Amazon VPC in this project

I used Amazon VPC in today's project to create isolated subnets, configure security groups, and set up routing rules, ensuring secure communication and controlled access for my resources.

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

One thing I didn’t expect in this project was how detailed the configuration of subnets and route tables would be, requiring precise alignment to ensure proper network communication.

This project took me...

This project took me around 4 hours to complete, including setting up the VPC, configuring subnets, security groups, and testing connectivity and breaks.

H
Honesty Dogunro
NextWork Student

Setting Up Direct VM Access

Directly accessing a virtual machine means connecting to your EC2 instance via SSH or RDP using its IP address, allowing you to manage the server, configure settings, or troubleshoot issues without intermediary tools.

SSH is a key method for directly accessing a VM

SSH traffic means secure communication between a client and a server over a network, using the Secure Shell (SSH) protocol. It allows encrypted access for remote login and secure file transfers, commonly used for managing servers.

To enable direct access, I set up key pairs

A key pair in cybersecurity consists of a private key and a public key used for encryption and authentication. The public key encrypts data, while the private key decrypts it, ensuring secure communication and access control.

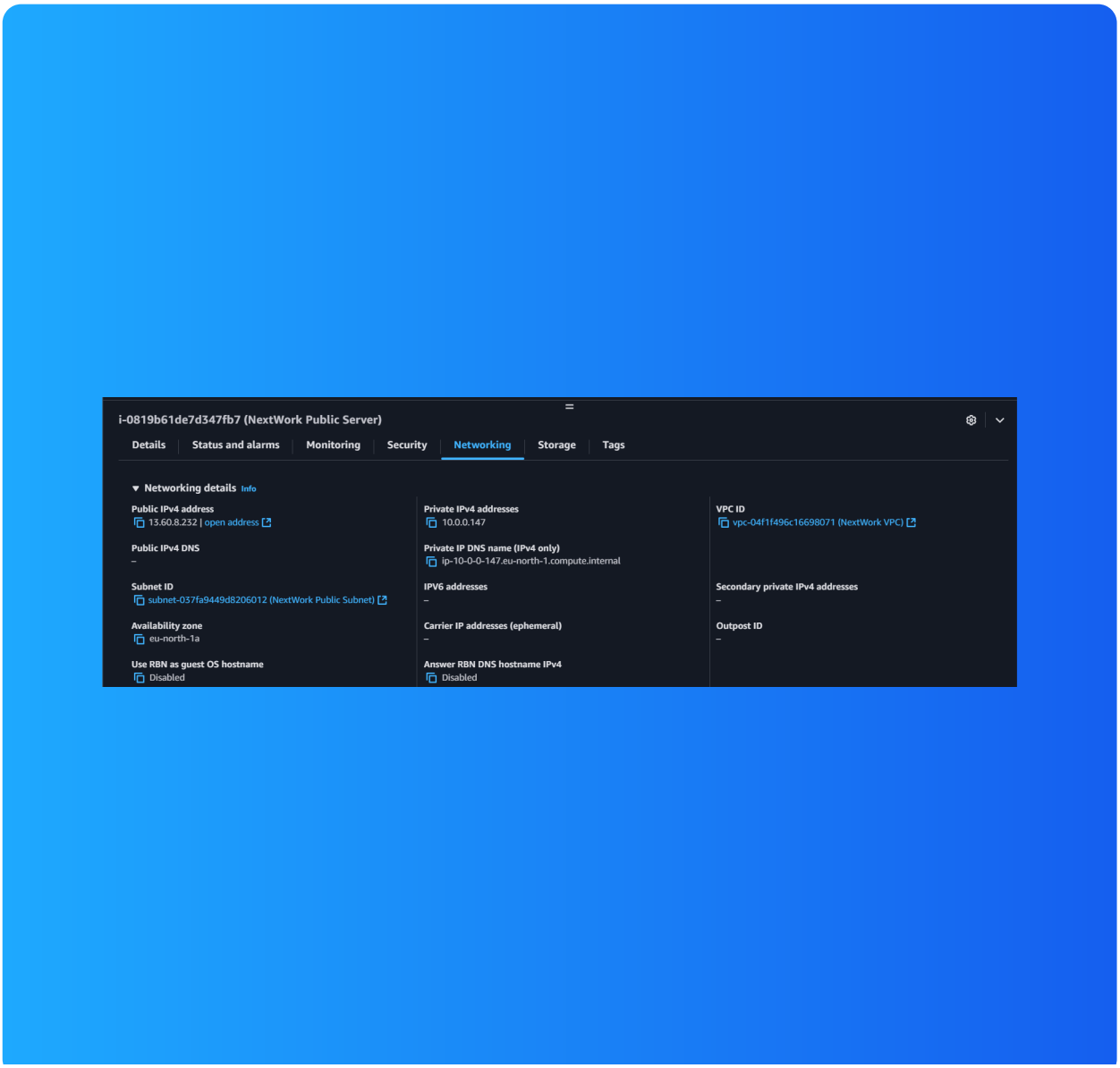
A private key's file format refers to the way the key is stored, often in PEM or PPK format for security. My private key's file format was PEM, commonly used with SSH for secure server access.

H

Honesty Dogunro
NextWork Student

Launching a public server

I had to change my EC2 instance's networking settings by modifying the security group rules to allow specific inbound and outbound traffic, configuring the network interface, and adjusting the subnet and route table settings in the VPC.

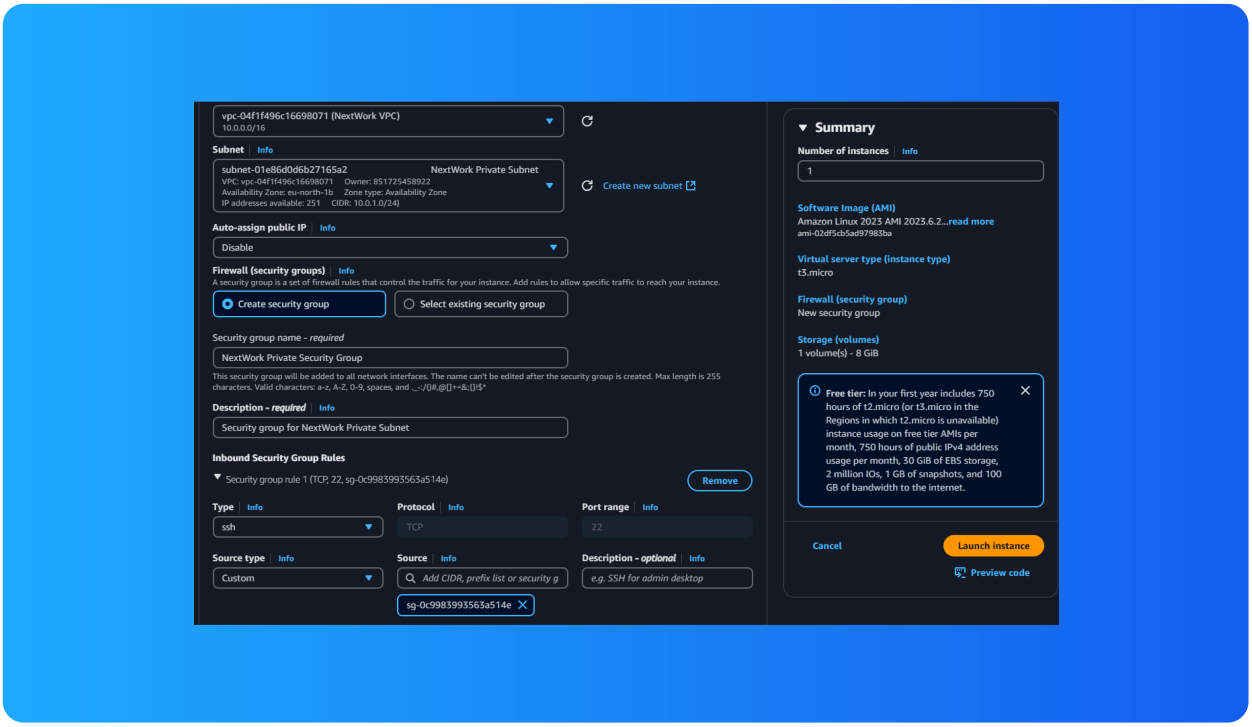


Honesty Dogunro
NextWork Student

Launching a private server

My private server has its own dedicated security group because it requires tighter security controls, restricting access to only internal traffic or specific users, while the public server allows more open access for external connections.

My private server's security group's source is my nextwork security group, which means only traffic from trusted sources within the same VPC or network can access the private server, ensuring better security.



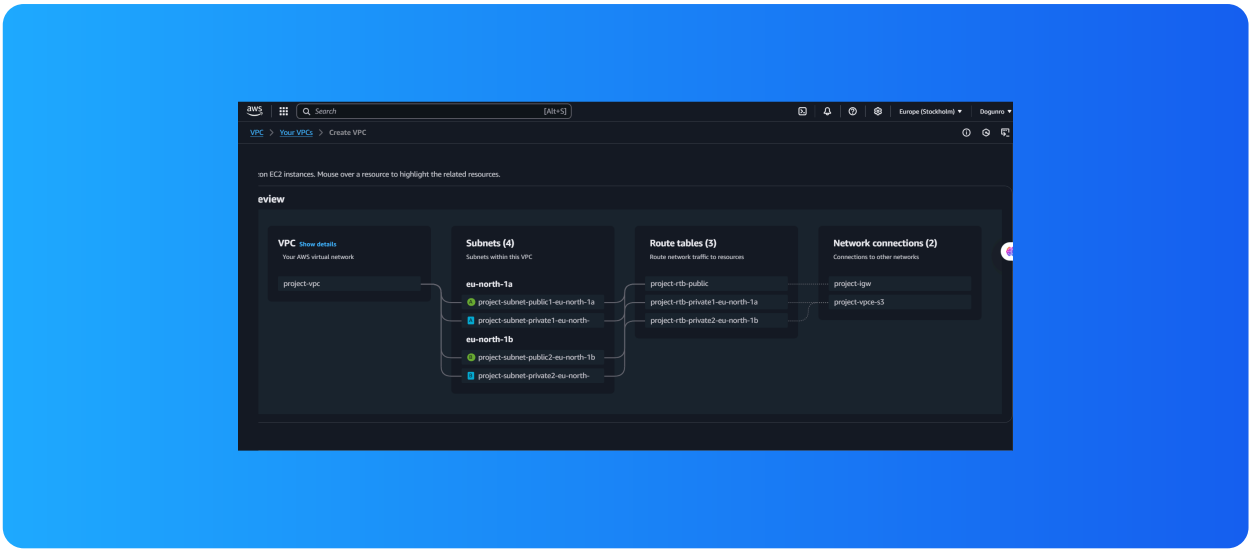
Honesty Dogunro
NextWork Student

Speeding up VPC creation

I used an alternative way to set up an Amazon VPC! This time, I manually configured subnets, route tables, and security groups, defined custom CIDR blocks, and enabled private and public subnets for better control over network traffic.

A VPC resource map is a visual representation of all components within a VPC, such as subnets, route tables, gateways, and security groups, showing how they interact to manage traffic and maintain network security.

My new VPC has a CIDR block of 10.0.0.0/16. It can share the same IPv4 CIDR block as my existing VPC because they are isolated and don't interact unless connected via peering or a Transit Gateway.



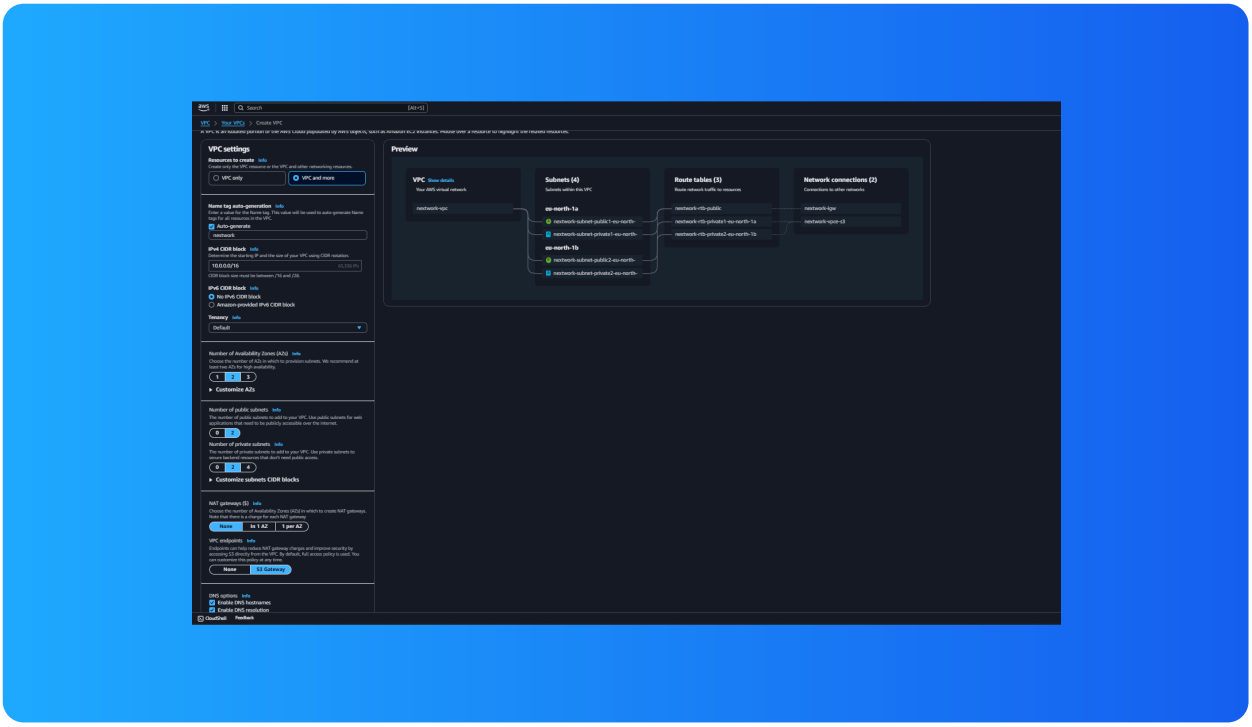
Honesty Dogunro
NextWork Student

Speeding up VPC creation

Tips for using the VPC resource map

When determining the number of public subnets in my VPC, I only had two options: one or two. This was because my VPC spanned two availability zones, and each public subnet must correspond to a specific zone.

The setup page also offered to create NAT gateways, which are resources that enable instances in private subnets to access the internet securely while preventing inbound connections from external sources.



Everyone should be in a job they love.

Check out nextwork.org for more projects