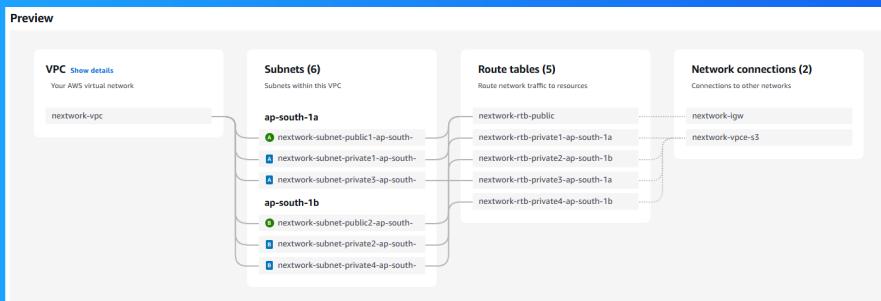




Launching VPC Resources



dineshrajdhanapathy@gmail.com



Introducing Today's Project!

What is Amazon VPC?

Amazon VPC is a virtual private cloud that lets you create isolated networks within AWS. It's useful for securely managing resources, controlling traffic, and customizing network configurations in the cloud.

How I used Amazon VPC in this project

In today's project, I used Amazon VPC to create a secure, isolated network, set up subnets, and configure routing to enable safe communication between my EC2 instances and the internet.

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

One thing I didn't expect in this project was the complexity of configuring security groups and route tables, which required careful attention to ensure proper access and communication between resources.

This project took me...

This project took me about 2 hours to complete, including setting up the VPC, configuring subnets, & ensuring the security settings were properly applied. I created the EC2 instance and set up my own VPC with private & public resources in this project.

Setting Up Direct VM Access

Directly accessing a virtual machine means connecting to an EC2 instance using methods like SSH or RDP, allowing you to manage it, run commands, and configure it without intermediaries.

SSH is a key method for directly accessing a VM

SSH traffic means encrypted network communication using the Secure Shell protocol, enabling secure remote access and management of servers like EC2 instances by authenticating and encrypting data transfers.

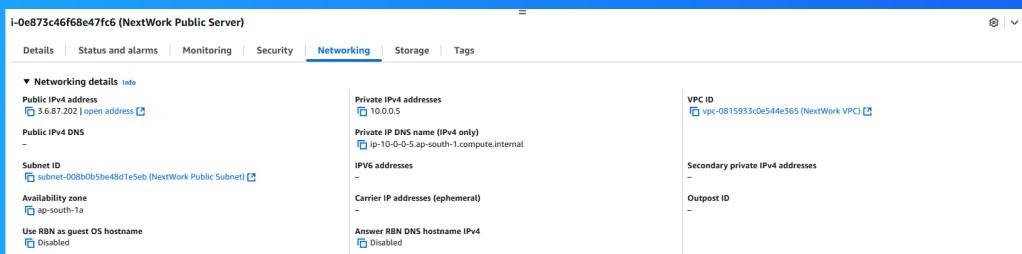
To enable direct access, I set up key pairs

Key pairs are cryptographic keys used in AWS for secure access to instances. The pair includes a public key stored in AWS and a private key kept by the user to authenticate and encrypt connections.

A private key's file format means the type of file used to store the key, such as PEM or PPK, ensuring compatibility with tools. My private key's file format was PEM, commonly used for SSH access.

Launching a public server

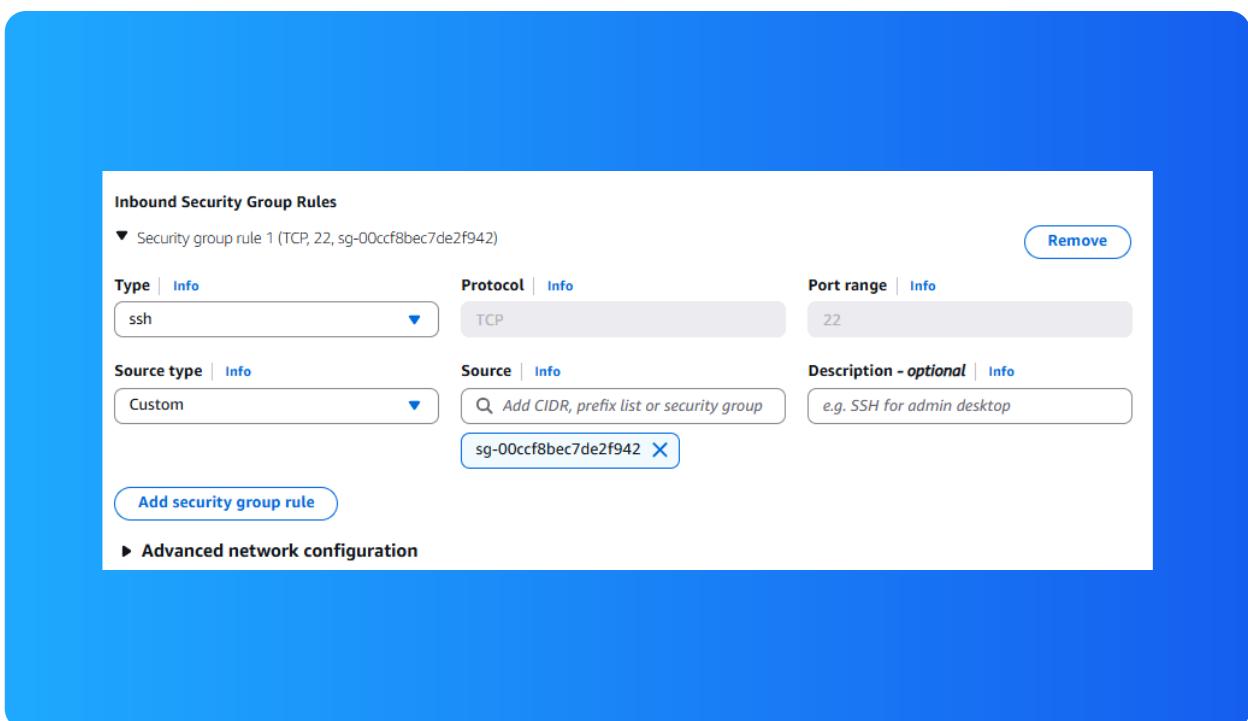
I had to change my EC2 instance's networking settings by modifying the security group rules, such as allowing specific inbound/outbound traffic or opening ports like 22 for SSH access.



Launching a private server

My private server has its own dedicated security group because it requires restricted access, allowing only specific traffic like internal communication, unlike the public server which handles external requests.

My private server's security group's source is the private IP range of my VPC, which means it only accepts traffic from internal network resources within the virtual private cloud.

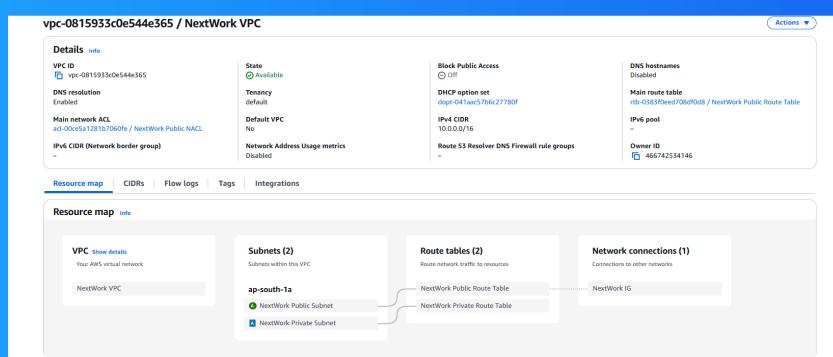


Speeding up VPC creation

I used an alternative way to set up an Amazon VPC! This time, I created a custom VPC and more options than view from the resource map, defined CIDR blocks, added subnets, configured route tables, enabled internet access, and assigned security groups.

A VPC resource map is a visual representation of resources in a VPC, showing components like subnets, route tables, and gateways, and their connections, helping to design and manage the network architecture.

My new VPC has a CIDR block of 10.0.0.0/16. It is possible for my new VPC to have the same IPv4 CIDR block as my existing VPC because they are isolated networks from each other and don't overlap unless peered.

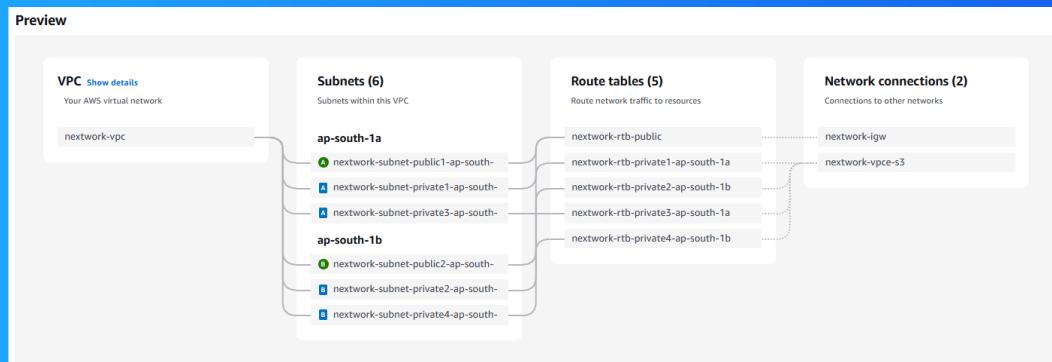


Speeding up VPC creation

Tips for using the VPC resource map

When determining the number of public subnets in my VPC, I only had two options: one subnet per availability zone or more, depending on my design. This was because public subnets need to be connected to an internet gateway.

The setup page also offered to create NAT gateways, which are managed services that allow instances in private subnets to access the internet for updates or services while keeping them secure from direct external traffic.





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