



NextWork.org

Launching VPC Resources



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VPC settings

Resources to create: VPC only VPC and more

Name tag auto-generation: Auto-generated Amazon-generated

IPv4 CIDR block: 10.0.0.0/16 (10.111.0.0)

IPv6 CIDR block: No IPv6 CIDR block Amazon generated IPv6 CIDR block

Region: Default

Number of Availability Zones (AZs): 3

First availability zone: ap-south-1a

Second availability zone: ap-south-1b

Number of public subnets: 0

Number of private subnets: 2

Preview

VPC Show details Your AWS virtual network nextwork-vpc

Subnets (6) Subnets within this VPC

- ap-south-1a
 - nextwork-subnet-public1-ap-south-1a
 - nextwork-subnet-private1-ap-south-1a
 - nextwork-subnet-private3-ap-south-1a
- ap-south-1b
 - nextwork-subnet-public2-ap-south-1b
 - nextwork-subnet-private2-ap-south-1b
 - nextwork-subnet-private4-ap-south-1b

Route tables (5) Route network traffic to resources

- nextwork-rt-public
- nextwork-rt-private1-ap-south-1a
- nextwork-rt-private2-ap-south-1b
- nextwork-rt-private3-ap-south-1a
- nextwork-rt-private4-ap-south-1b

Network connections (2) Connections to other networks

- nextwork-lwe
- nextwork-vpc-e5



Introducing Today's Project!

What is Amazon VPC?

Amazon VPC is a service that lets you create isolated virtual networks within AWS. It's useful for securely managing and controlling resources, providing privacy, and ensuring customized network configurations tailored to your needs.

How I used Amazon VPC in this project

I used Amazon VPC to create a public and a private subnet, launched EC2 instances in both, and set up networking configurations, including security groups and route tables, to control access and communication between resources.

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

One thing I didn't expect was the ability to reuse the same key pair across multiple EC2 instances, which simplifies access management while emphasizing the importance of securing the private key.

This project took me...

1 hour and 48 minutes.



Setting Up Direct VM Access

Directly accessing a virtual machine means you're logging into your EC2 instance just like it's your personal computer! You get to control it, run commands, and manage apps right from the inside, like being backstage at a concert!

SSH is a key method for directly accessing a VM

SSH traffic means securely accessing a remote machine over an encrypted connection. It's like having a secret tunnel to your EC2 instance, keeping your data safe from eavesdroppers while you work your magic!

To enable direct access, I set up key pairs

Key pairs are like a VIP pass to your EC2 instances! They consist of a public key (AWS keeps) and a private key (you keep). Together, they allow secure access to your instances, ensuring only the right person gets through the door!

A private key's file format means the type of file used to store your key securely. My private key's file format was ` `.pem` , which is like a VIP pass to access my EC2 instance!

A circular portrait of a man with dark hair and a well-groomed beard. He is wearing a light-colored shirt with thin, vertical stripes in shades of blue, green, and yellow. The background is plain white.

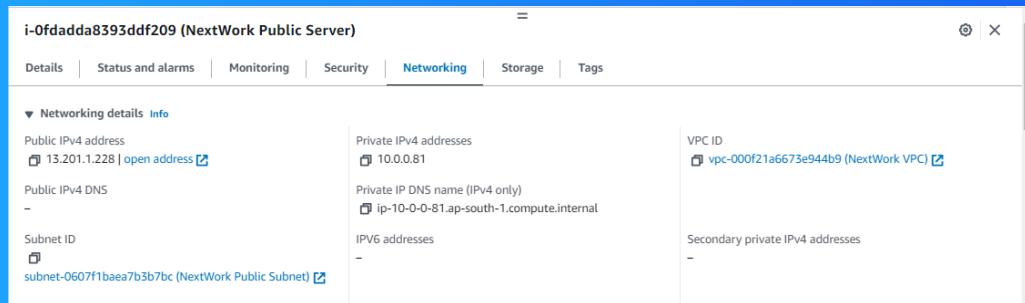
Roshan Thomas

NextWork Student

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Launching a public server

I had to change my EC2 instance's networking settings by selecting NextWork VPC from the drop-down, choosing my public subnet, and picking NextWork Public Security Group under the firewall settings.



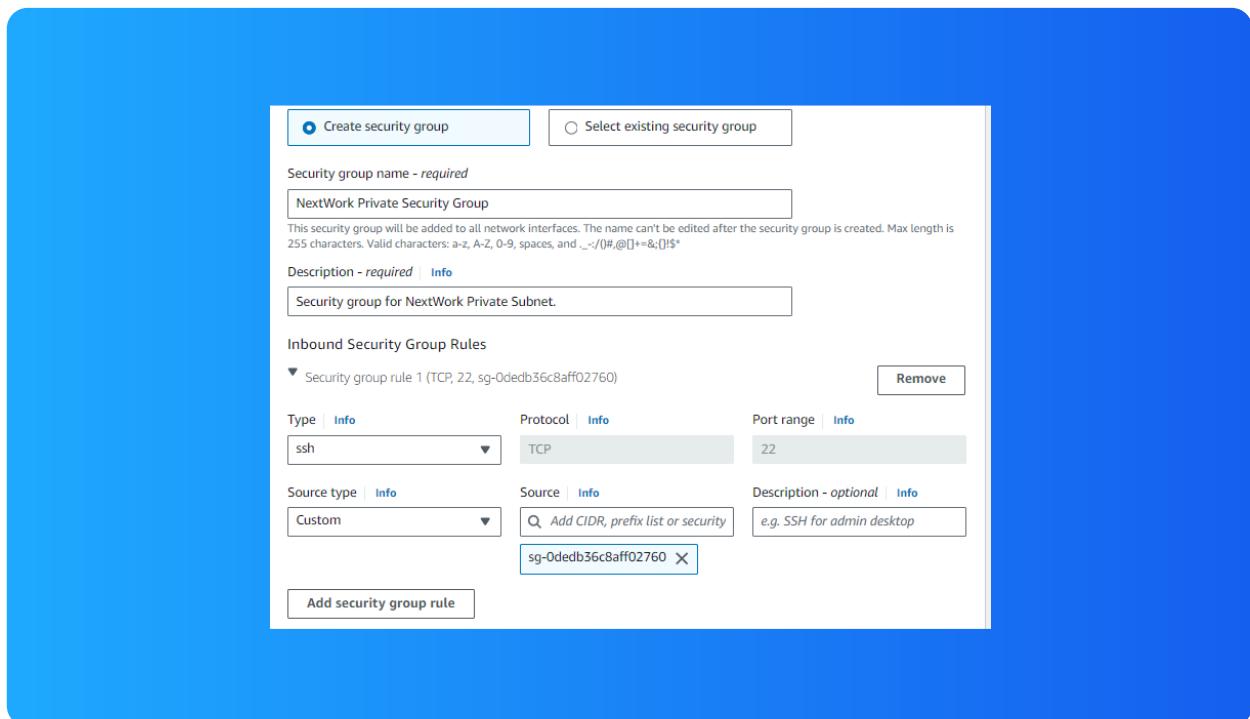
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Launching a private server

My private server has its own dedicated security group because it needs stricter access rules, keeping it hidden from public traffic while ensuring only trusted resources can communicate with it. It's like a VIP room with extra security!

My private server's security group's source is NextWork Public Security Group, which means only resources from my public subnet can communicate with the private server. It's like a secure tunnel between trusted neighbors!

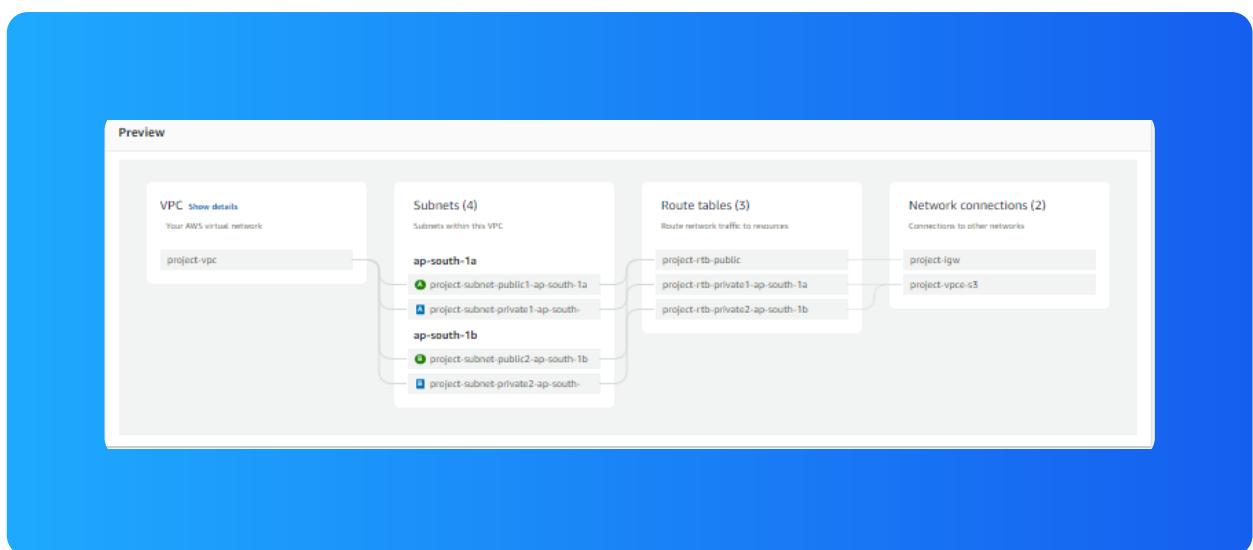


Speeding up VPC creation

I used an alternative way to set up an Amazon VPC! This time, I used resource maps to plot out my network, creating a customized setup with precise control —like drawing my own city blueprint for optimal performance and security!

A VPC resource map is like a detailed blueprint of your network, showing how your subnets, route tables, and other components are arranged. It helps you visualize and manage your virtual infrastructure, just like planning a new amusement park!

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 each VPC operates independently, like parallel universes with their own rules!





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: as many as my CIDR block allows or fewer if I want to avoid overlap. This was because each subnet needs a unique IP range to keep things organized and efficient!

The setup page also offered to create NAT gateways, which are cloud gatekeepers that let private subnets access the internet without exposing them. They're like secret agents, ensuring data flows out but keeps the subnet hidden from prying eyes!

The screenshot shows the AWS VPC creation interface. On the left, the 'VPC settings' section includes fields for Name (auto-generated as 'nextwork'), IPv4 CIDR block (10.0.0.0/16), and Number of Availability Zones (3). On the right, the 'Preview' section displays a hierarchical resource map:

- VPC (1):** NextWork VPC
- Subnets (6):**
 - ap-south-1a
 - nextwork subnet public1.ap-south-1a
 - nextwork subnet private1.ap-south-1a
 - nextwork subnet private3.ap-south-1a
 - ap-south-1b
 - nextwork subnet public2.ap-south-1b
 - nextwork subnet private2.ap-south-1b
- Route tables (5):**
 - nextwork-rt-public
 - nextwork-rt-private1.ap-south-1a
 - nextwork-rt-private2.ap-south-1b
 - nextwork-rt-private3.ap-south-1a
 - nextwork-rt-private4.ap-south-1b
- Network connections (2):**
 - nextwork-igw
 - nextwork-spcl-1d



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