



NextWork.org

Launching VPC Resources



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Screenshot of the AWS VPC settings page showing the configuration of a new VPC named "nextwork-vpc".

VPC settings

Resources to create: VPC only (selected) or VPC and more.

Name tag auto-generation: Auto-generate nextwork

IPv4 CIDR block: 10.0.0.0/16 (selected)

Tenancy: Default

Number of Availability Zones (AZs): 3 (selected)

Number of public subnets: 2 (selected)

NAT gateways (1): 1 per AZ (selected)

VPC endpoints: None (selected)

Preview:

VPC: nextwork-vpc (Your AWS virtual network)

Subnets (6): nextwork-subnet-public1-eu-north-1a, nextwork-subnet-private1-eu-north-1a, nextwork-subnet-private3-eu-north-1a, nextwork-subnet-public2-eu-north-1b, nextwork-subnet-private2-eu-north-1b, nextwork-subnet-private4-eu-north-1b

Route tables (5): nextwork-rt-public, nextwork-rt-private1-eu-north-1a, nextwork-rt-private2-eu-north-1b, nextwork-rt-private3-eu-north-1a, nextwork-rt-private4-eu-north-1b

Network connections (2): nextwork-lgw, nextwork-spce-ss

Introducing Today's Project!

What is Amazon VPC?

Amazon VPC is a service that allows users to create private networks within the AWS cloud. It provides enhanced security, customizable network configurations and easy scalability.

How I used Amazon VPC in this project

I created both public and private subnets within a VPC and launched an EC2 instance in each one.

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

Operating in the cloud is very simple and user-friendly.

This project took me...

Approximately an hour and a half.

Setting Up Direct VM Access

Directly accessing a virtual machine means logging into and managing the operating system or software of the machine as if you were using it in front of you, but over the internet.

SSH is a key method for directly accessing a VM

SSH, or Secure Shell, is the protocol we use to securely access a remote machine. When connecting to the instance, SSH checks that you have the right private key that matches the public key on the server, making sure only authorized users can get in.

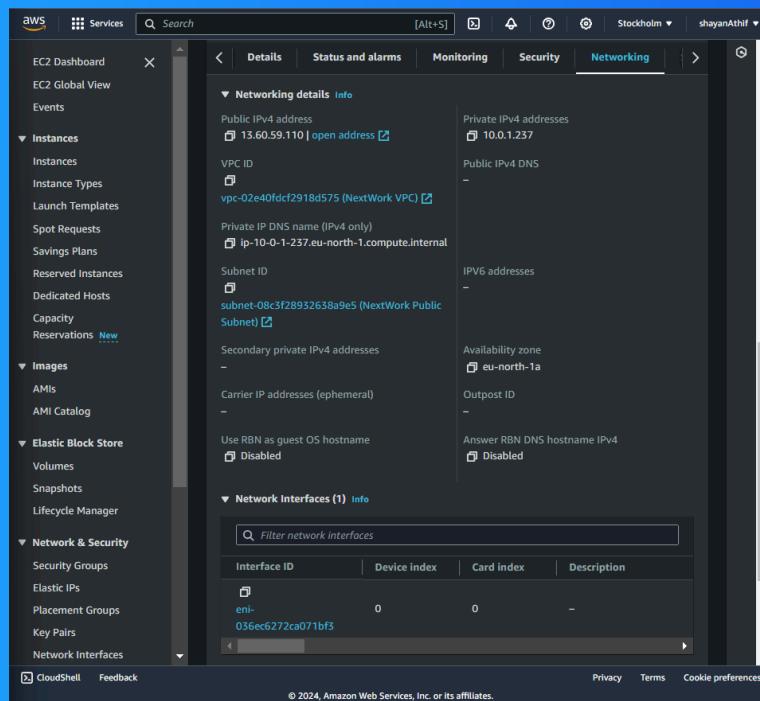
To enable direct access, I set up key pairs

Key pairs are essential for engineers to securely access virtual machines, such as EC2 instances. They consist of a public key, stored on the server, and a private key, kept by the user.

A private key's file format means the way the key is stored and encoded. My private key's file format was .pem, which stands for Privacy Enhanced Mail.

Launching a public server

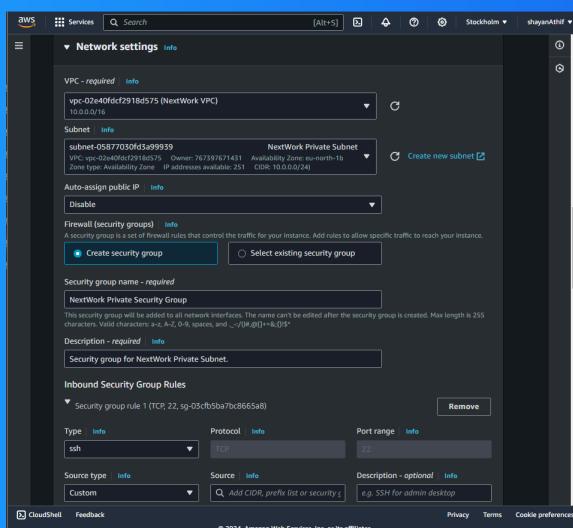
I changed my EC2 instance's networking settings by clicking the 'edit' icon in the top right corner. Then, I selected the VPC and subnet where I wanted to launch the EC2 instance, ensuring it was configured correctly for my needs.



Launching a private server

My private server has its own security group because it needs more protection than my public server. This way, I can control who can access it and keep sensitive information safe, while the public server can be more open for general use.

My private server's security group's source is NextWork Public Security Group, which means that only users within this security group can communicate with your instance.

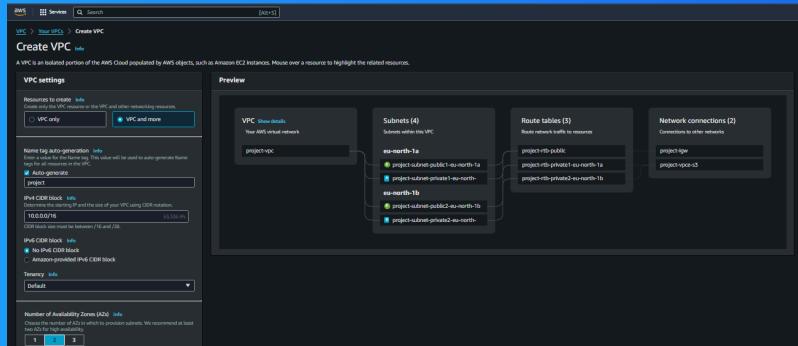


Speeding up VPC creation

I took a different approach to set up my Amazon VPC this time! I used the VPC resource map, which made the process much smoother. Instead of hopping between different pages in the console, i could see everything visually.

A VPC resource map is a handy visual tool that shows a flow diagram of all the VPC resources. It gives you a clear picture of how different components, like subnets and security groups, connect with each other, making it easier to manage your VPC.

My new VPC has a CIDR block of 10.0.0.0/16. It's possible for my new VPC to share the same IPv4 CIDR block as my existing VPC because they are in different regions or accounts. This allows for flexibility in the network without IP address conflicts.

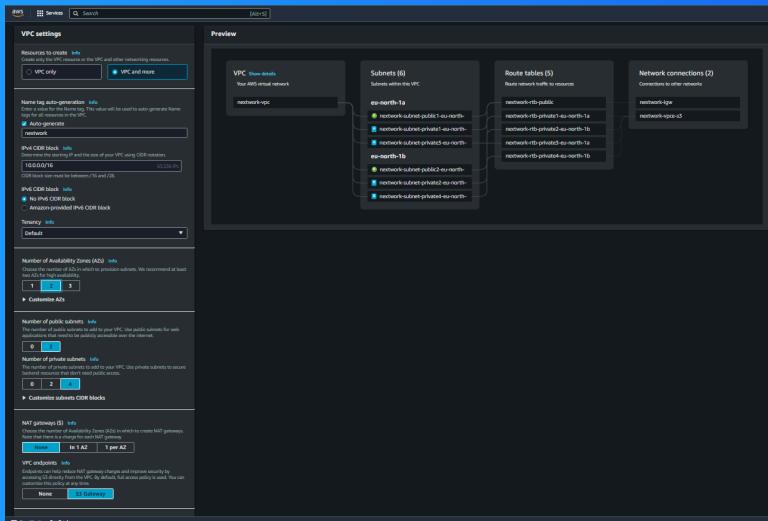


Speeding up VPC creation

Tips for using the VPC resource map

When setting up my VPC, I had the option to create either 0 or 2 public subnets. The wizard simplifies things by limiting it to two, helping me get started quickly without too many choices. If I need more later, I can easily add them—up to 200!

NAT gateways let instances in private subnets access the internet for updates and patches, while blocking inbound traffic. Instances in private subnets using a NAT gateway do not need public IP addresses and are protected from external threats.





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