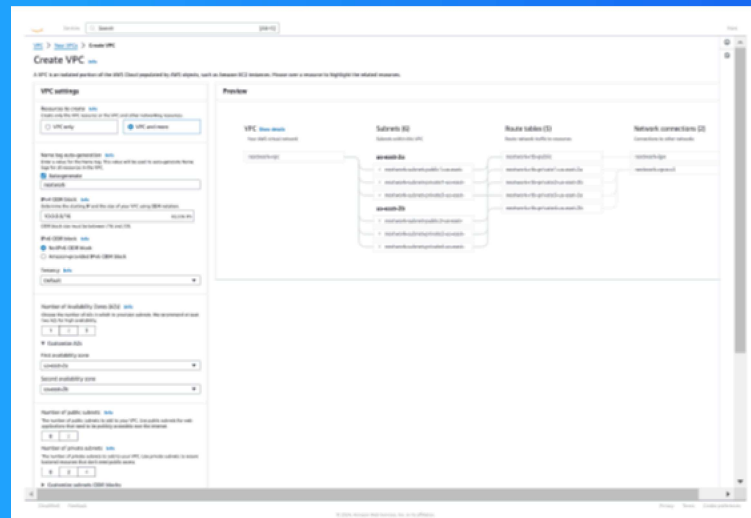# Launching VPC Resources

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## Introducing Today's Project!

## What is Amazon VPC?

VPCis a service that allows users to create a virtual network in AWS cloud. It's useful because it gives users full control over their network's security, connectivity, and resource placement.

## How I used Amazon VPC in this project

I created 2 seperate VPCs for different projects. I set up public and private subnets and route tables. The public one was able to connect to the internet. The private one only connected to the work group I chose.

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

The resource map. It is a useful to determine where my flow of traffic went and how each one of the connected.

## This project took me...

The project took me about an hour to complete.

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# Setting Up Direct VM Access

Directly accessing a virtual machine means connecting to it directly, usually via SSH: Security Group: The Security Group must have TCP port 22 open. IP address: The instance must have a Public IP or an Elastic IP address.

## SSH is a key method for directly accessing a VM

SSH traffic means is the protocol we use for this secure access to a remote machine. SSH verifies you possess the correct private key corresponding to

the public key on the server, ensuring only authorized users can access it

## To enable direct access, I set up key pairs

Key pairs are a combination of public and private keys that are used to control access to Amazon Elastic Compute Cloud (Amazon EC2) instances

The file format for a private key in AWS is typically PEM (Privacy Enhanced Mail). PEM is a file format that's often used for representing keys, certificates, and certificate chains. The extension for a PEM-formatted file is usually .pem
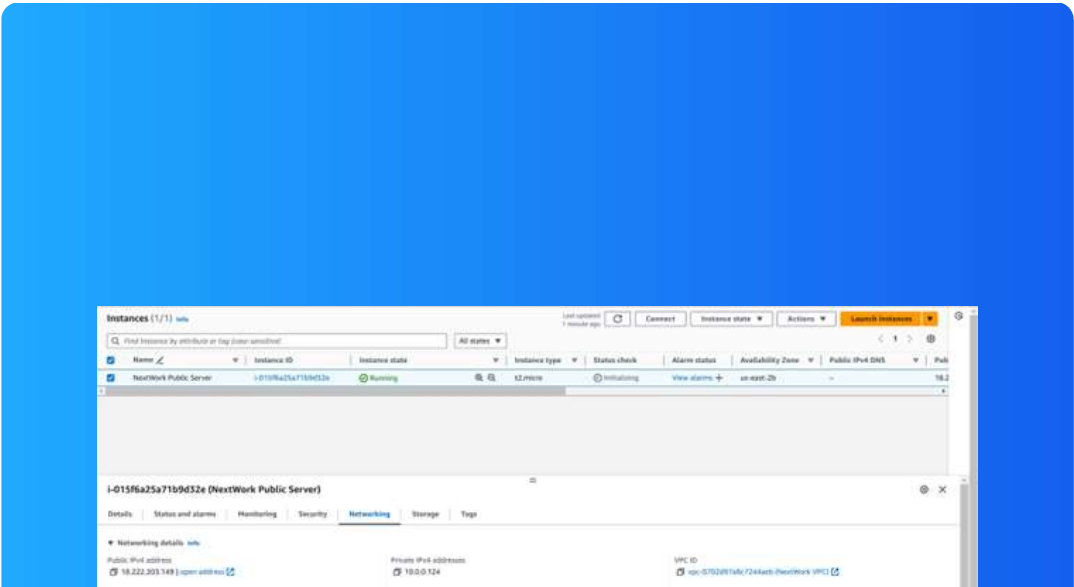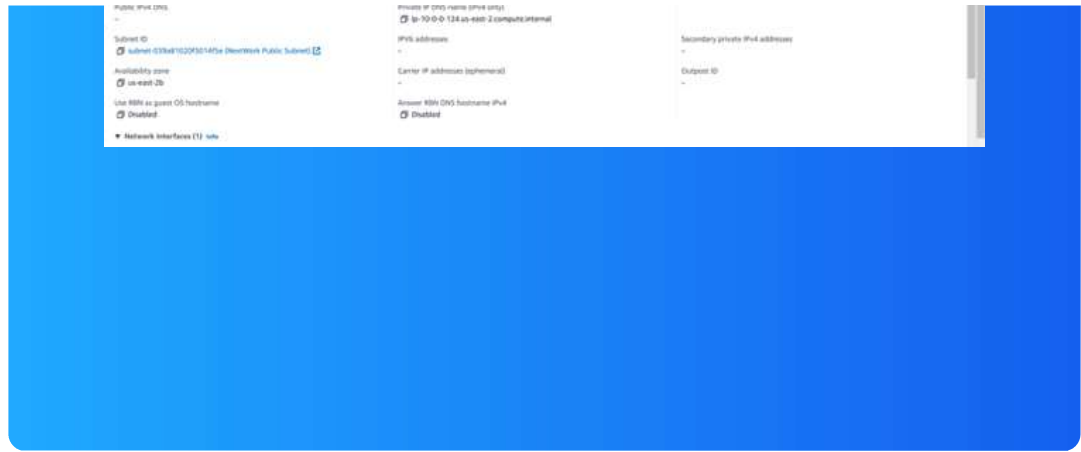
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# Launching a public server

I had to change my EC2 instance's networking settings by editing the network settings and switch it to my vpc and public subnet I had set for the vpc public side. I also selected the security group I had already created

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# Launching a private server

My private server has its own dedicated security group because I can dictate who may or may not use the server. In this case, I will only allow the other nextwork public group to use the private one

My private server's security group's source is NextWork Public Security Group which means only resources that are part of the NextWork Public Security Group can communicate with your instance

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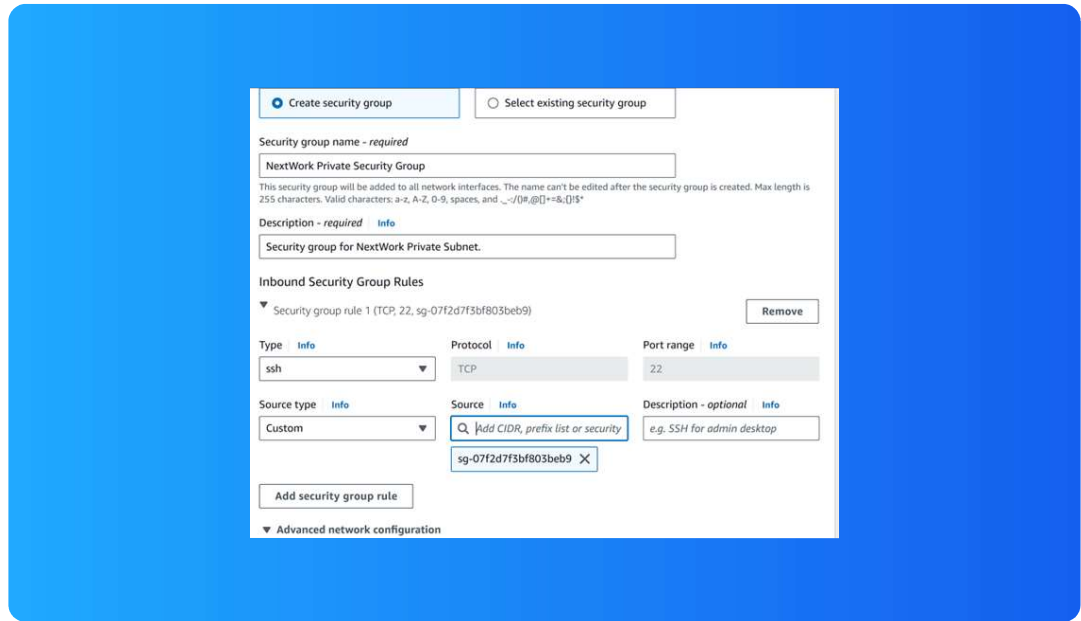
# Speeding up VPC creation

I used an alternative way to set up an Amazon VPC! This time, I chose the option of VPC and more. Which I then input a new name in the name tag section. I automatically autogenerated names for me.

A VPC resource map is a visual representation of the flow for my network, both public and private. It also shows how the network is routed.

My new VPC has a CIDR block of 10.0.0.0/24. It is possible for my new VPC to have the same IPv4 CIDR block as my existing VPC because VPCs are isolated networks within AWS, meaning they don't interact with each other unless you explicitly set it up

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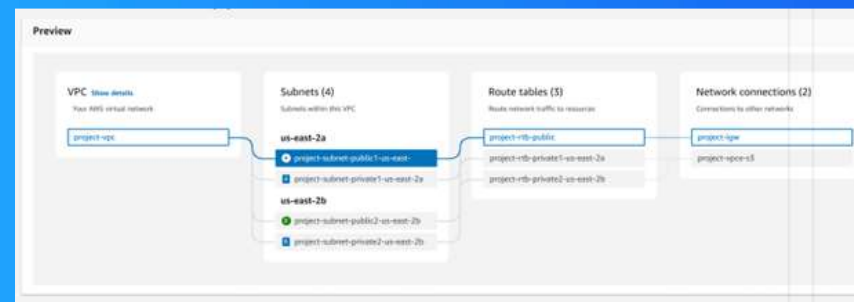
# Speeding up VPC creation

## Tips for using the VPC resource map

When determining the number of public subnets in my VPC, I only had two options: 0 and 2. This was because your public resources stay up even if one of the two Availaiblity Zones goes down.

The set up page also offered to create NAT gateways, which are gateways that let instances in private subnets access the internet for updates and patches, while blocking inbound traffic.
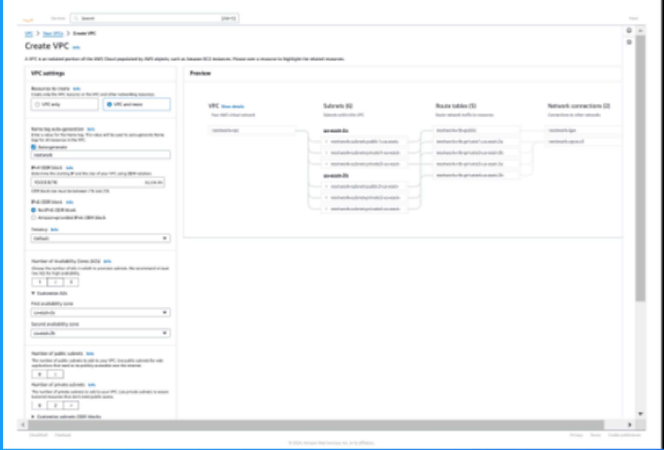


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