



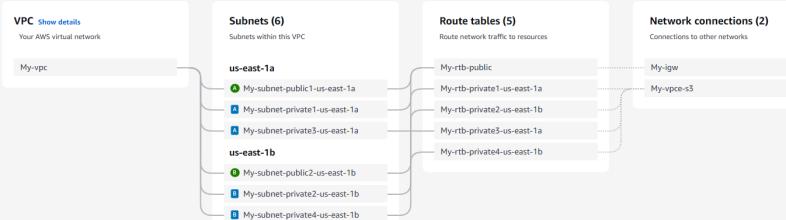
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# Launching VPC Resources



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## Preview





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# Introducing Today's Project!

## What is Amazon VPC?

Amazon VPC (Virtual Private Cloud) lets you create a secure, isolated network in the AWS Cloud where you can launch and manage resources like EC2 instances. It's useful because it gives you full control over networking, security, and traffic flow.

## How I used Amazon VPC in this project

Today, I used Amazon VPC to create public and private subnets. I deployed one EC2 instance in each subnet to control access and improve security, organizing resources efficiently within the cloud environment for better management and protection.

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

One thing I didn't expect was how helpful the VPC resource map is. It made visualizing and managing subnets, route tables, and gateways way easier than digging through configs.

## This project took me...

This project took me close to an hour. Setting up the VPC, subnets, route tables, and deploying EC2 instances was fast thanks to the helpful VPC resource map.



# Setting Up Direct VM Access

Directly accessing a virtual machine means logging into your EC2 instance to use its operating system, install software, run commands, or troubleshoot, just like sitting in front of a real computer, but through a secure internet connection.

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

SSH traffic means Secure Shell traffic, which is a secure way to remotely access and control another computer, like your EC2 instance. It uses encryption to keep all your commands and data safe while you're connected to the server.

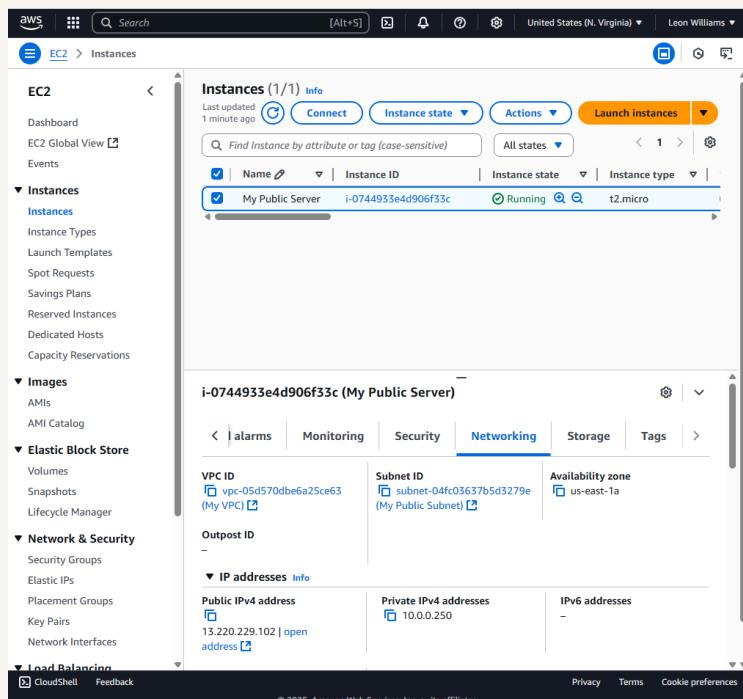
## To enable direct access, I set up key pairs

Key pairs are how I securely log in to my EC2 server. AWS puts the public key on the server, and I keep the private key. When I connect, it proves I am trusted. No password needed, just safe encrypted access for cloud work.

A private key's file format means the way the key is saved so systems can read and use it correctly. My private key's file format was .pem, which is widely supported and great for securely connecting to EC2 instances.

# Launching a public server

had to change my EC2 instance's networking settings by selecting my custom VPC, choosing the correct public subnet, and assigning the security group I created earlier to make sure it had internet access and followed my setup.



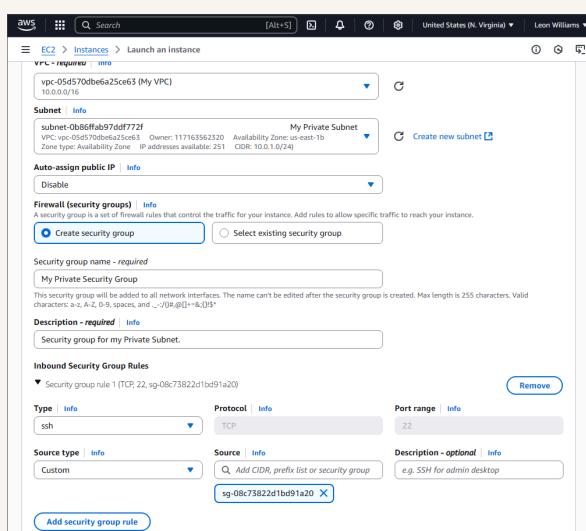
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# Launching a private server

My private server has its own dedicated security group because it needs stricter access controls. This helps keep my private server secure by limiting who can access it. It also isolates private resources from public traffic for better protection.

My private server's security group's source is the public server's security group. This means only the public server can access the private server. It keeps the private server secure and isolated from the internet.



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# Speeding up VPC creation

I used an alternative way to set up an Amazon VPC! This time, I used the “VPC and more” option to launch subnets, route tables, and an internet gateway all at once. The resource map gave me a clear view of how everything connects.

A VPC resource map is a visual tool I used to quickly understand how my subnets, route tables, and gateways were connected. It made my setup process easier and helped me see the full architecture clearly, all in one place.

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 VPCs are isolated by default in AWS, so they won’t conflict unless I connect them using VPC peering.



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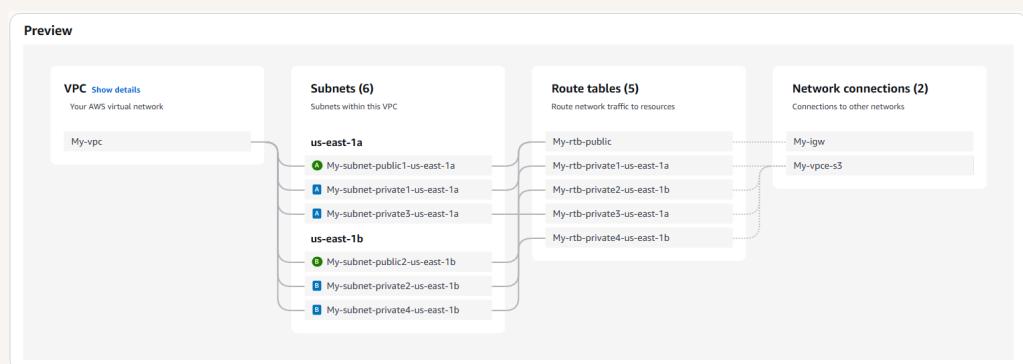
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# Speeding up VPC creation

## Tips for using the VPC resource map

When determining the number of public subnets in my VPC, I only had two options: 0 or 2. This was because I selected 2 Availability Zones, and AWS best practices ensure high availability by placing one public subnet in each zone.

The set up page also offered to create NAT gateways, which are tools that let private subnet instances access the internet for things like updates while keeping them hidden from incoming traffic. This helps maintain security without exposing them.





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