Testing VPC Connectivity

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Introducing Today's Project!

What is Amazon VPC?

Amazon VPC is a service that lets you create a logically isolated section of the AWS cloud where you can launch AWS resources, such as EC2 instances, in a virtual network that you define. Essentially, it’s your own private network in the cloud.

How I used Amazon VPC in this project

In today's project, I used Amazon VPC to create a secure and isolated network environment for my AWS resources. I used it to: Launch my EC2 instance in a controlled subnet, managed internet access, controlled traffic, tested connectivity.

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

One thing I didn't expect in this project was how much configuration flexibility Amazon VPC gives you and how that also means there are many small settings that can break connectivity if not set correctly.

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This project took me...

This project took me one hour

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Connecting to an EC2 Instance

Connectivity means the ability of your instances (EC2) to communicate with other resources, either inside your VPC or with the internet.

My first connectivity test was whether I could connect to my NextWork Public Server EC2 instance

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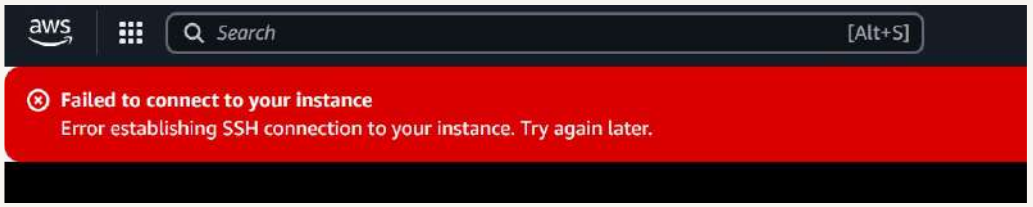
EC2 Instance Connect

I connected to my EC2 instance using EC2 Instance Connect, which is a browser-based and secure way to connect (SSH) to your EC2 Linux instances without needing to download or manage SSH keys on your local computer.

My first attempt at getting direct access to my public server resulted in an error, because no SSH rule in the Security Group.

I fixed this error by adding SSH rule in the Security Group and that's when I was able to connect.



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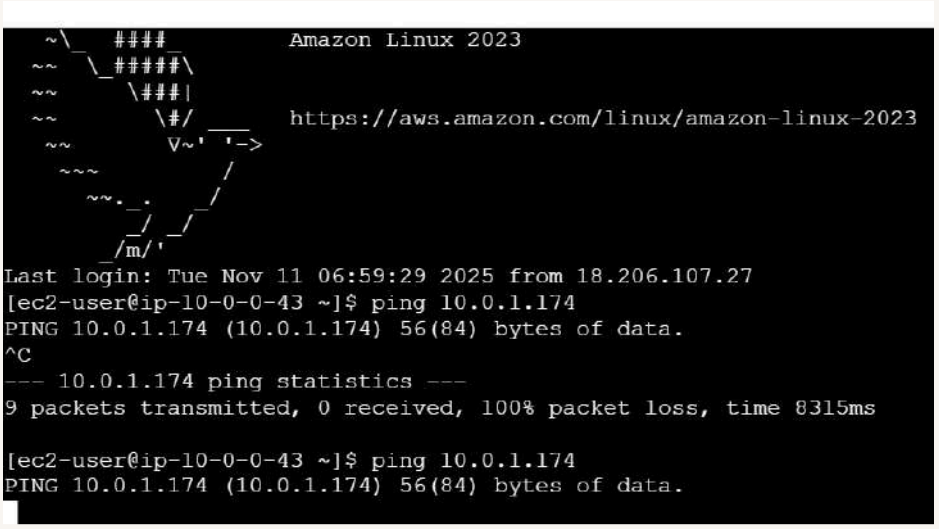
Connectivity Between Servers

Ping is used to test whether one device or server can reach another over a network. I used ping to test the connectivity between my public server and private server inside the VPC.

The ping command I ran was ping 10.0.1.174

The first ping returned no response This meant the private server IP I was trying to test was unreachable.



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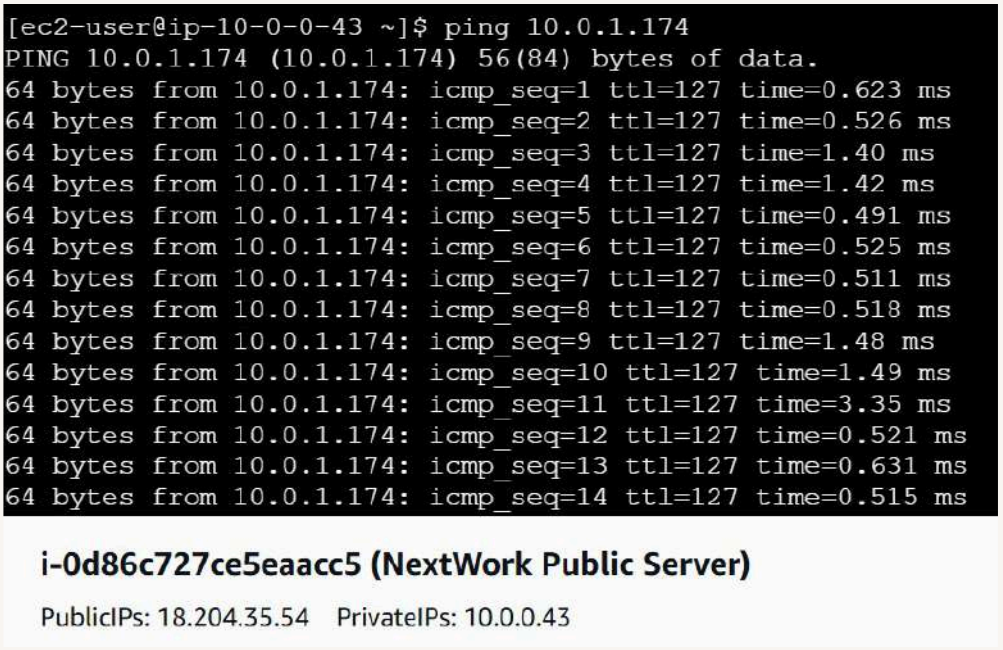
Troubleshooting Connectivity

I troubleshooted this by configuring the private subnet to use the Public Security Group and added All ICMP rule in inbound rule, by that the private server and public server both use the same security group and communicate to one another.



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Connectivity to the Internet

Curl is is a command-line tool used to transfer data to or from a server using various internet protocols most commonly HTTP and HTTPS.

I used curl to test the connectivity between my public server and the internet by sending a request to an external website. This helped me confirm that my public EC2 instance was properly connected to the internet through the Internet Gateway.

Ping vs Curl

Ping and curl are different because ping checks basic network connectivity between two devices using ICMP it only tells you if one machine can reach another, while curl actually tests application-level connectivity by sending HTTP or HTTPS requests.

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Connectivity to the Internet

I ran the curl command curl https://learn.nextwork.org/projects/aws-host-a-website-on-s3e-on-s3 which returned which returned the HTML code of the NextWork website, confirming that my public EC2 instance successfully connected to the internet.

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