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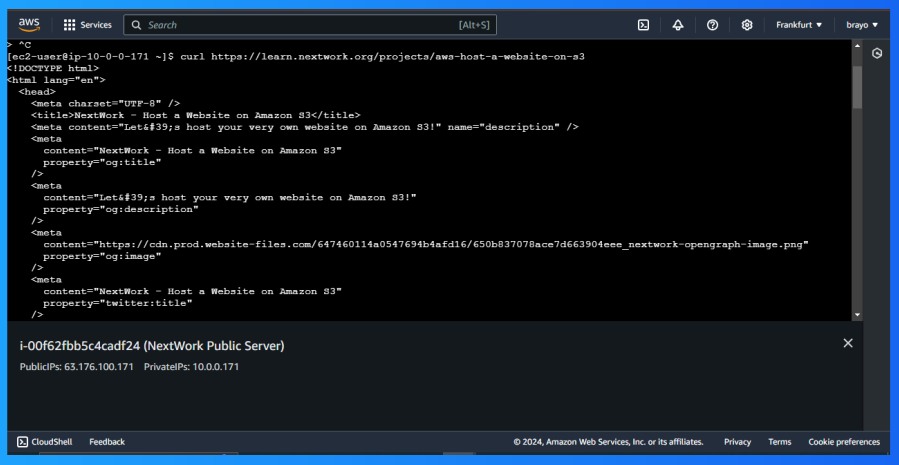
Testing VPC Connectivity

Brian Kimemia N



Brian Kimemia N
NextWork Student

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Introducing Today's Project!

What is Amazon VPC?

Amazon VPC is a service that lets you create a private network within the AWS cloud. It's useful for securely managing resources, controlling traffic, and ensuring isolation and security for your applications.

How I used Amazon VPC in this project

I used Amazon VPC to create a secure and isolated network for my EC2 instances. This allowed me to configure subnets, route tables, and network ACLs to control traffic between my public and private instances, ensuring proper connectivity and security

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

One thing I didn’t expect in this project was the need to adjust both the Network ACLs and Security Groups separately to allow ICMP and SSH traffic, as I initially thought the route table alone would handle connectivity.

This project took me...

This project took me about an hour, with most of the time spent troubleshooting connectivity issues and configuring security settings within the VPC.

Brian Kimemia N
NextWork Student

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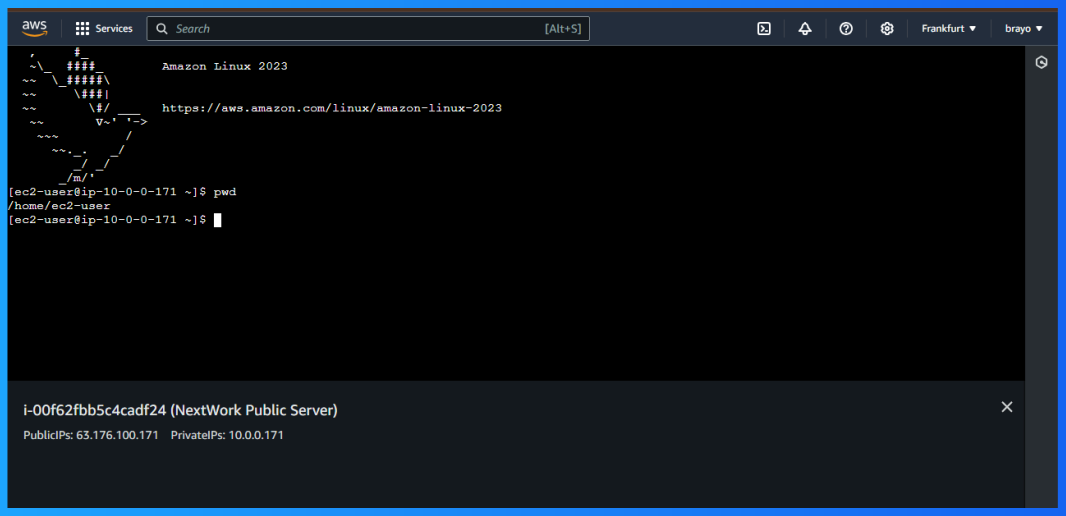
Connecting to an EC2 Instance

Connectivity means the ability for devices, instances, or networks to communicate with each other, either within a VPC or between different VPCs, over the internet or through private connections.

My first connectivity test was whether I could connect to the Public Server using EC2 Instance Connect,its imortant to ensure that the public server can be accessed securely, confirming network settings,security groups, were properly configured.



Brian Kimemia N
NextWork Student

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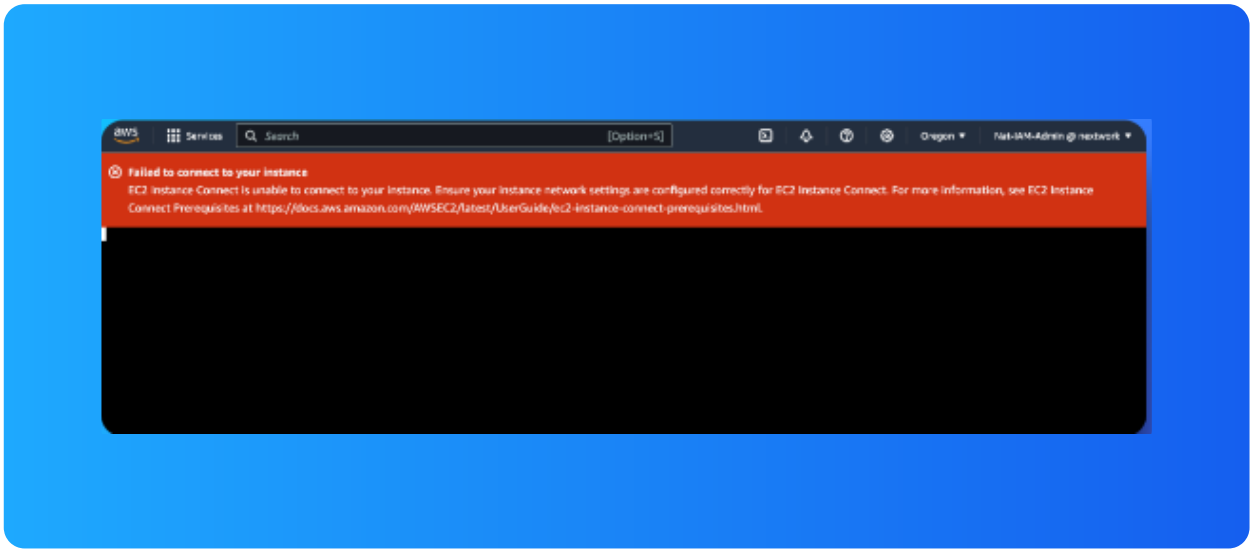
EC2 Instance Connect

I connected to my EC2 instance using EC2 Instance Connect, which is a method that allows secure SSH access directly through the AWS Management Console without needing to manage SSH keys manually.

My first attempt at getting direct access to my public server failed because the security group only allowed HTTP traffic, not SSH. I had to update the inbound rules to allow SSH from any IPv4 address for EC2 Instance Connect to work.

I fixed this error by updating the security group's inbound rules to allow SSH traffic. I selected "Anywhere-IPv4" as the source, which enabled EC2 Instance Connect to establish a connection.



Brian Kimemia N
NextWork Student

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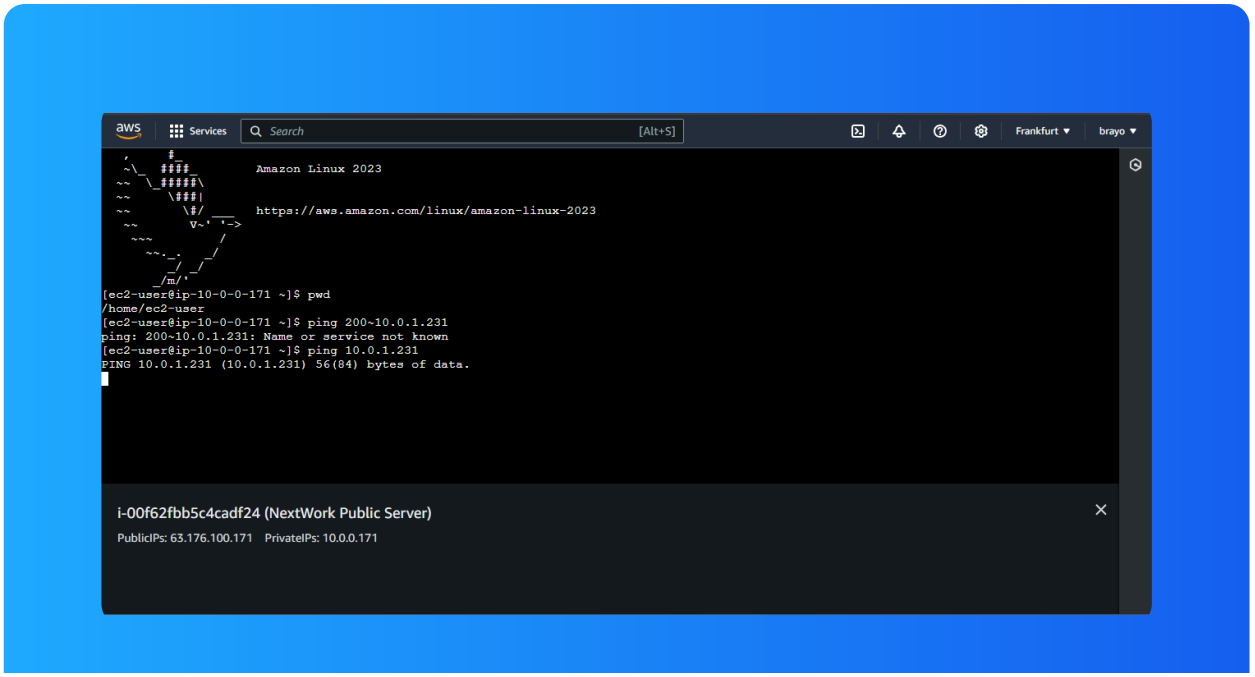
Connectivity Between Servers

Ping is a network utility used to test the reachability of a host on an IP network and measure the round-trip time for messages sent from the originating host to the destination.I used ping to check if my EC2 instances could communicate across subnet

The ping command I ran was ping 10.0.1.231, which was the private IP address of my private EC2 instance.

The first ping returned "Destination Host Unreachable." This meant that the private EC2 instance was not accessible from the public EC2 instance, likely due to a misconfiguration in the network settings, such as security group rules or routing.



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NextWork Student

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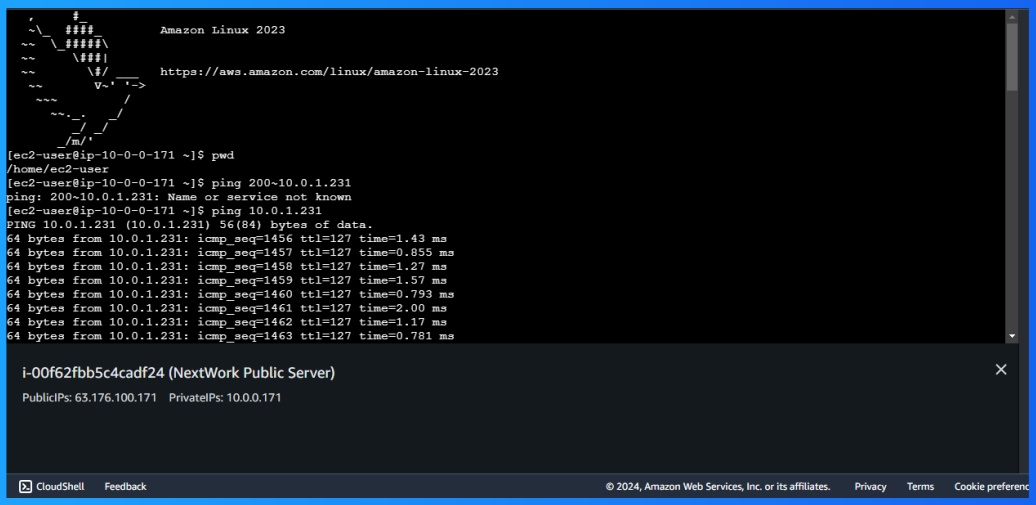
Troubleshooting Connectivity

I troubleshooted this by checking Network ACL and Security Group settings for the private EC2 instance.I updated the Network ACL and Security Group to allow ICMP traffic from the public subnet and server thus enabled successful ping responses.



Brian Kimemia N
NextWork Student

Connectivity to the Internet

Curl is a command-line tool used to transfer data to or from a server, supporting various protocols like HTTP, HTTPS, FTP, and more. It is commonly used to test network connectivity, interact with APIs, and fetch or send data.

I used curl to test the connectivity between my local machine and the EC2 instance, checking if the instance was accessible over HTTP or HTTPS. This helped verify whether the server was responding to requests and if there were any connectivity issues

Ping vs Curl

Ping tests network connectivity by sending ICMP packets to a target, while curl sends specific HTTP requests to a server to check if it responds correctly. Ping is used for basic network testing, whereas curl is used for testing web server responses.

Brian Kimemia N
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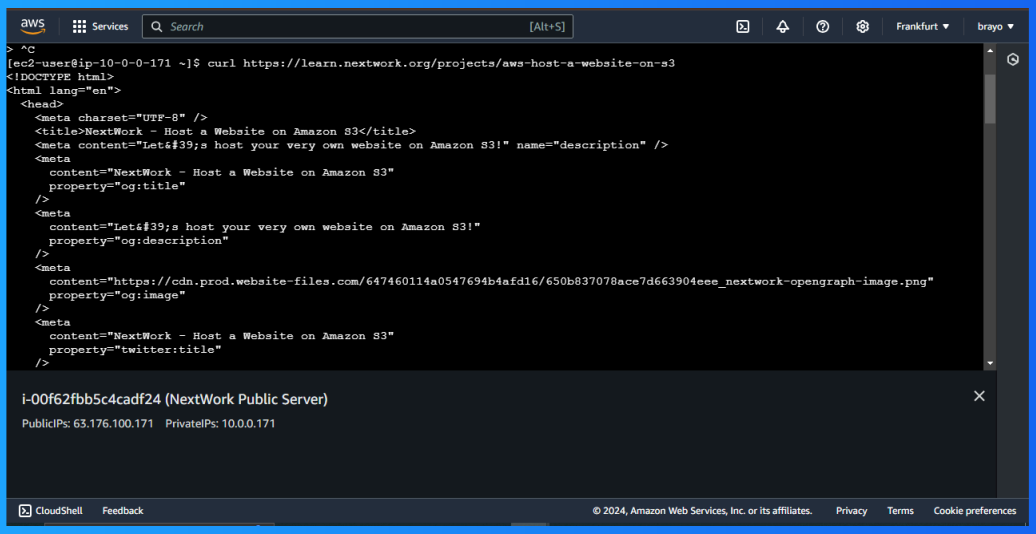
Connectivity to the Internet

I ran the curl command curl http://10.0.1.231 which returned a successful HTTP response, indicating that the server was reachable and responding.



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