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Testing VPC Connectivity

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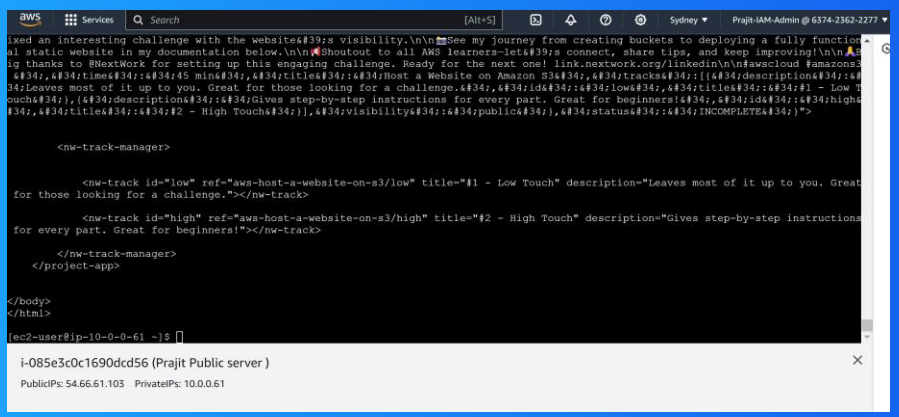

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Introducing Today's Project!

What is Amazon VPC?

Amazon VPC (Virtual Private Cloud) exists within an AWS region and is used to build a private and secure connection for resources in the subnets. Through an internet gateway, these resources and users can access internet to communicate each other.

How I used Amazon VPC in this project

In today's project, I used Amazon VPC to set up a VPC and its components using the VPC wizard, then launched EC2 instances and tested the connectivity between my network resources.

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

One thing I did not expect in this project was running into an error while trying to connect to the 'Prajit public server' using EC2 Instance Connect. It was resolved by adding SSH traffic to the inbound rule of the public security group.

This project took me...

This project took me 3 hours to complete, include the report writing.

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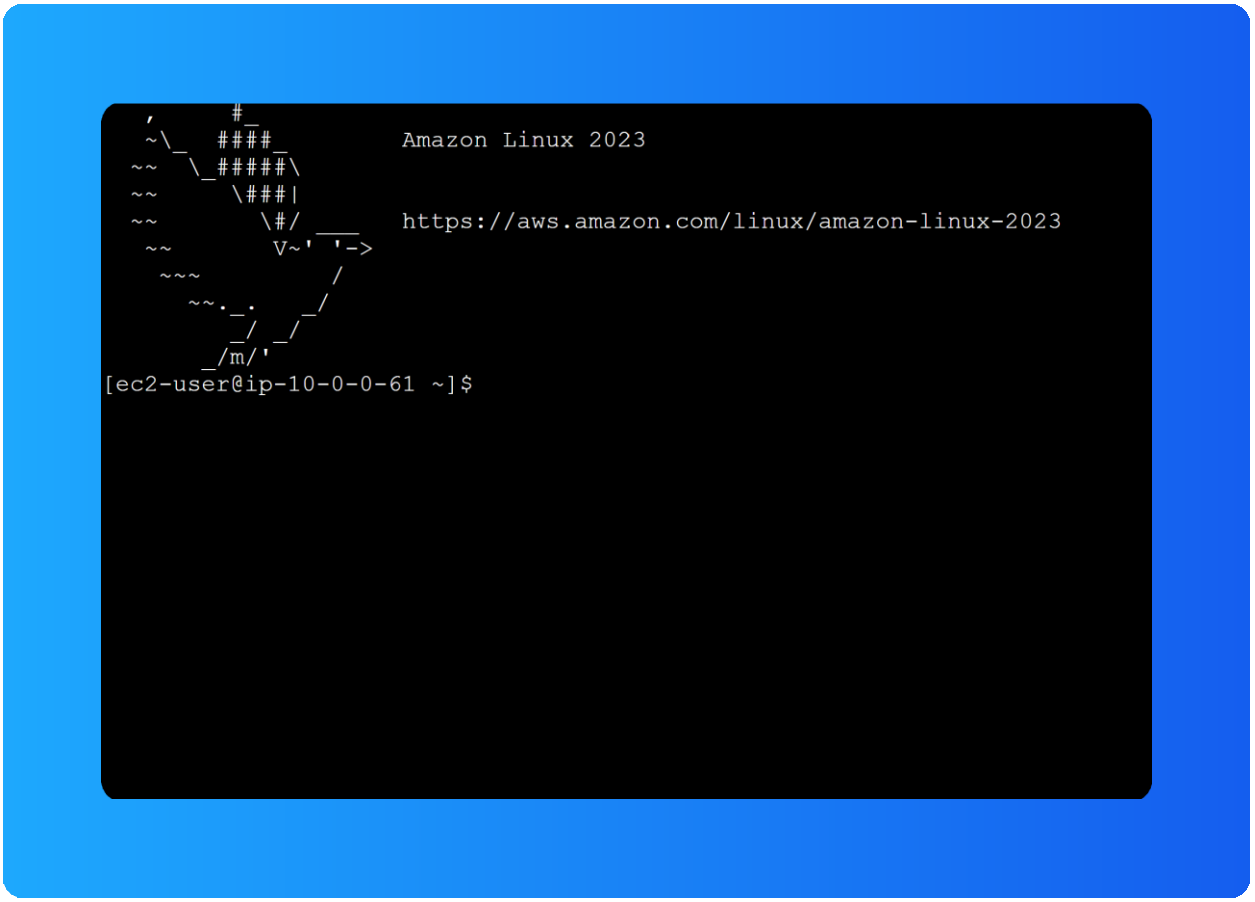
Connecting to an EC2 Instance

Connectivity means enabling resources in our network to communicate with each other and assessing how well they can deliver data to one another. Without connectivity, resources cannot communicate, which means users can't access our application.

My first connectivity test was whether I could connect to my network's public server (an EC2 instance.



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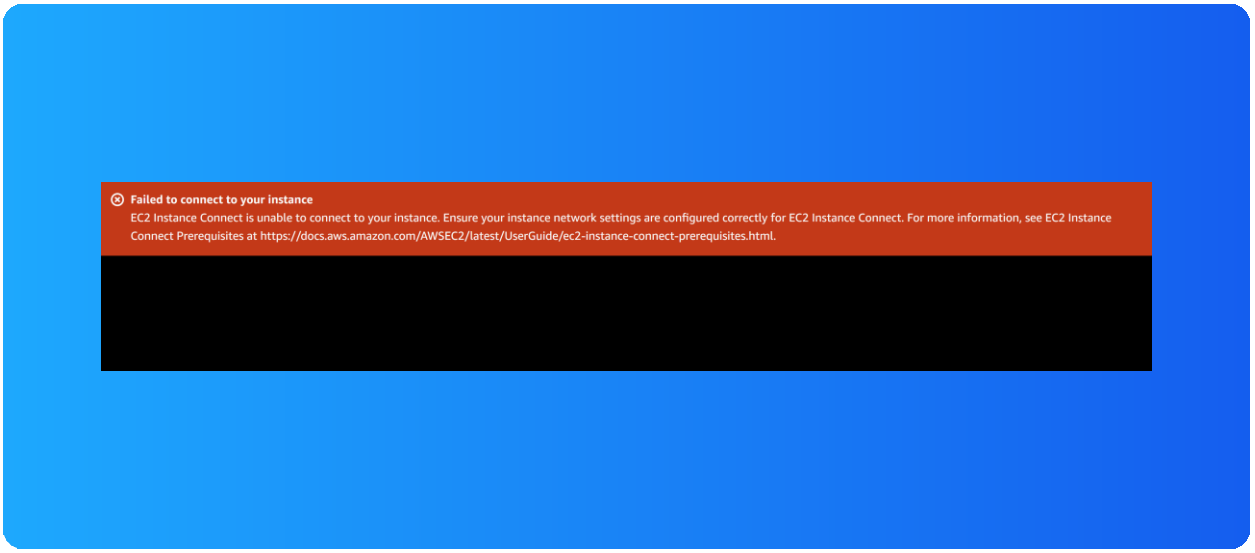
EC2 Instance Connect

I connected to my EC2 instance using EC2 Instance Connect, a tool that allows us to directly access an EC2 instance through the AWS Management Console. We don't need to manage key pairs or use an SSH client to connect to our EC2 instance.

My first attempt at accessing my public server resulted in an error because the 'Prajit VPC public server' security group was not authorized for SSH connections, which prevented the EC2 instance from connecting and displayed an error.

I fixed this error by adding a new inbound rule to my public server's (EC2 instance) security group (Prajit VPC public security group) that allows SSH connections or traffic from anywhere.



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Connectivity Between Servers

Ping is a command/tool used to test the connectivity of servers and measure response times (i.e., the performance of the connection). I used ping to test the connectivity between my 'Prajit VPC Public server' and 'Prajit VPC Private server'.

The ping command I ran was 'ping 10.0.1.167' which is the private IPv4 address of my private server (EC2 instance).

The first ping returned no replies from the private server, indicating that the security settings on my private server were blocking inbound and outbound traffic for the ICMP protocol, which is the traffic type for ping messages.

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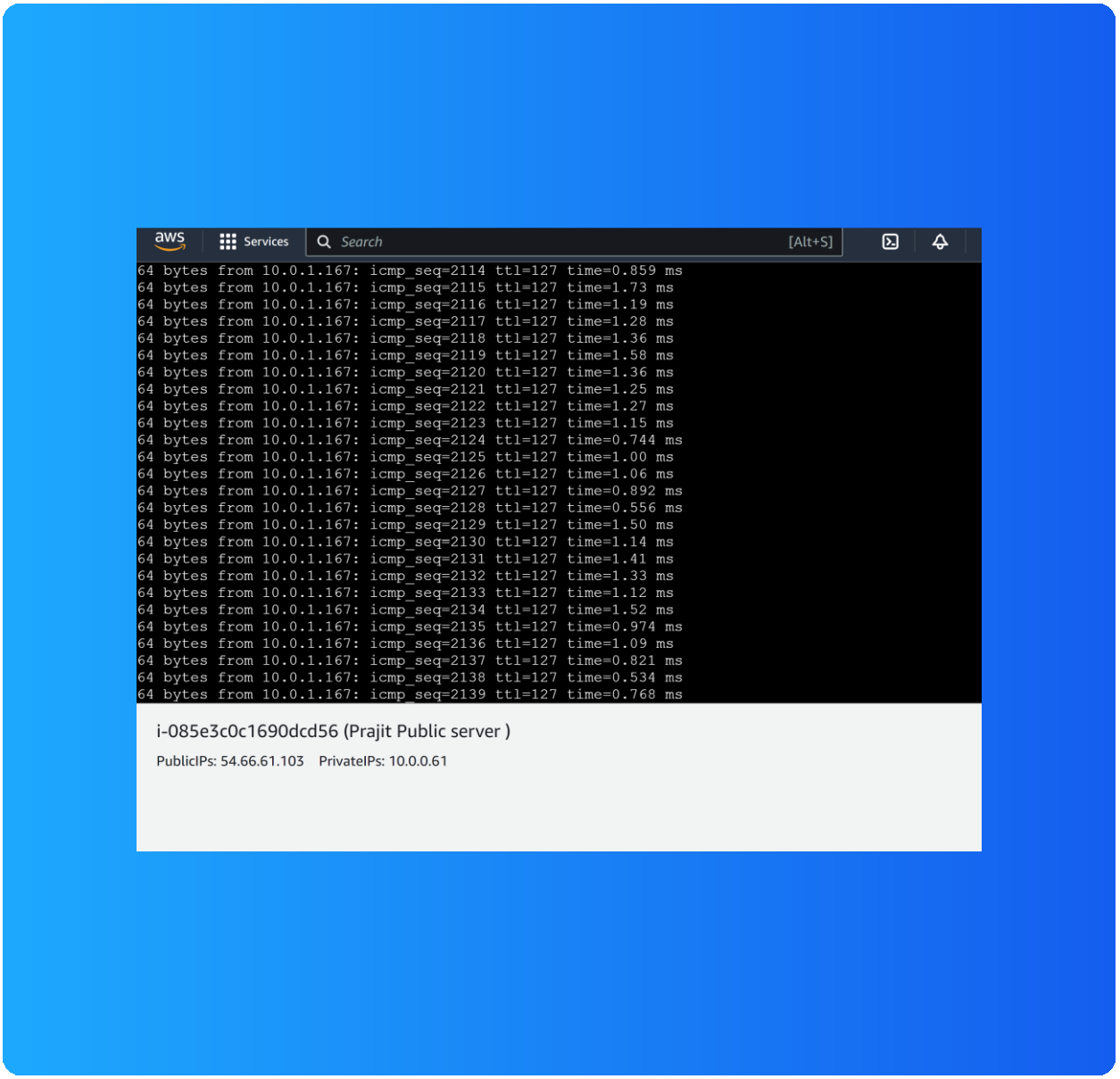
Troubleshooting Connectivity

I troubleshooted this by adding ICMP traffic to both the inbound and outbound rules of my private server's Network ACL and adding ICMP traffic to the inbound rule of my private server's security group.



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Connectivity to the Internet

Curl is a connectivity tool used to test connectivity from one server to another and retrieve data from the target server.

I used curl to test the connectivity between my network's public server and the public internet. This test would only be successful if my internet gateway, network ACLs, security groups, and route table were set up correctly.

Ping vs Curl

Ping and curl are different because they return different responses to my public server's terminal—ping provides a report on the performance of the connectivity with my private server, while curl returns HTML data from another public server.

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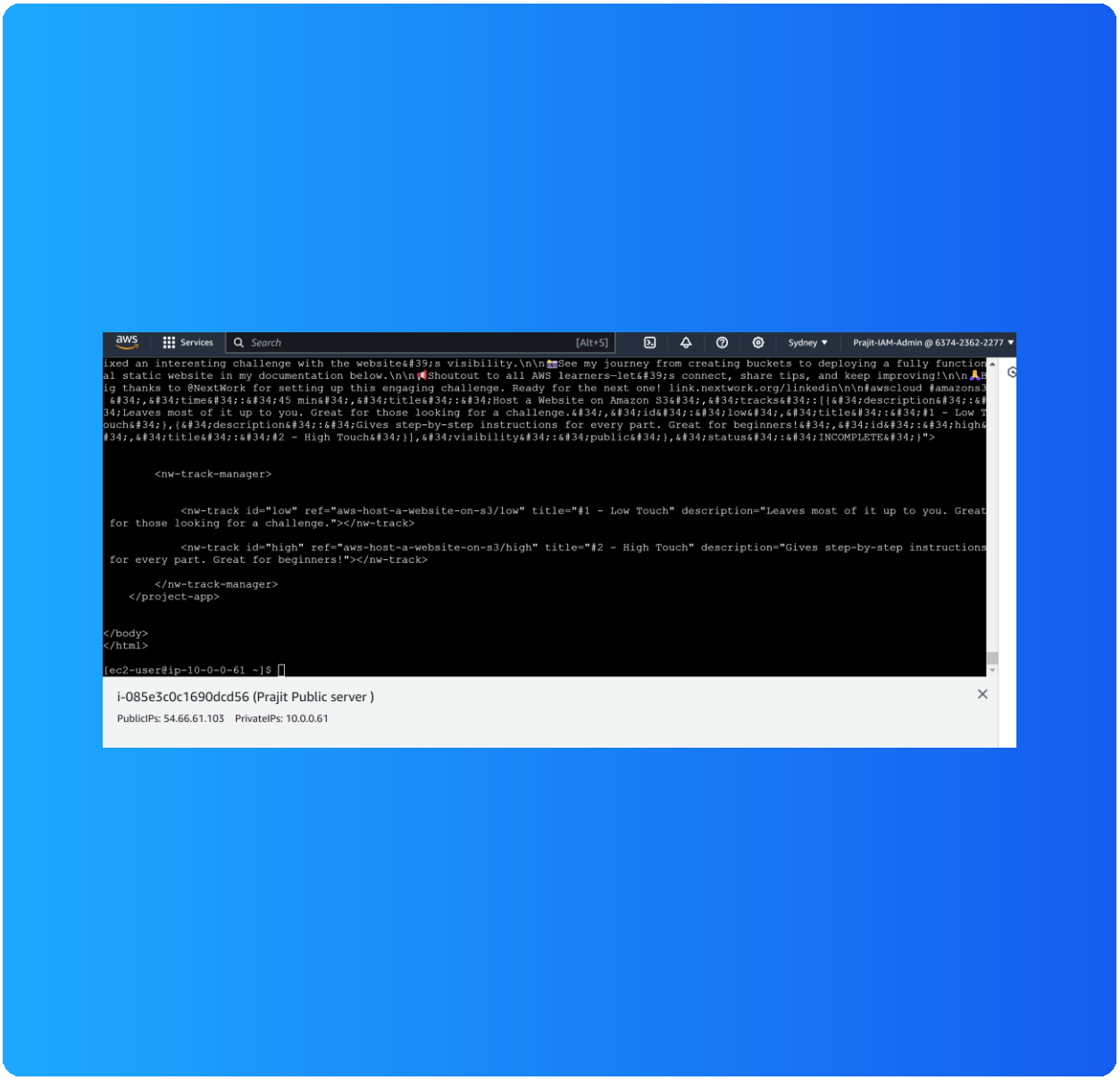
Connectivity to the Internet

I ran the curl command 'https://learn.nextwork.org/projects/aws-host-a-website-on-s3', which returned the HTML content of NextWork's first project guide.



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