



Testing VPC Connectivity

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The screenshot shows a terminal window within a web browser. The URL is `eu-north-1.console.aws.amazon.com/ec2-instance-connect/[ssh/home?addressFamily=ipv4&connType=standard&instanceId=i-0fe65cb77de72cd2&osUser=ec2-user®ion=eu-north-1&sshPort=22]`. The terminal output displays the command `[ec2-user@ip-10-0-0-4 ~]$ curl https://learn.nextwork.org/projects/aws-host-a-website-on-s3` followed by the HTML content of the website.

```
[ec2-user@ip-10-0-0-4 ~]$ curl https://learn.nextwork.org/projects/aws-host-a-website-on-s3
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8" />
    <title>NextWork - Host a Website on Amazon S3</title>
    <meta content="Let's host your very own website on Amazon S3!" name="description" />
    <meta content="NextWork - host a website on Amazon S3" property="og:title" />
    <meta content="Let's host your very own website on Amazon S3" property="og:description" />
    <meta content="/static/og-project.png" property="og:image" />
    <meta content="NextWork - Host a Website on Amazon S3" property="twitter:title" />
    <meta content="Let's host your very own website on Amazon S3" property="twitter:description" />
    <meta content="/static/og-project.png" property="twitter:image" />

    <meta property="og:type" content="website" />
    <meta content="summary_large_image" name="twitter:card" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <link rel="icon" href="/favicon.ico?v=2" sizes="32x32" />
    <link rel="apple-touch-icon" href="/apple-touch-icon-precomposed.png" />
    <link rel="preconnect" href="https://fonts.googleapis.com" />
    <link rel="preconnect" href="https://fonts.gstatic.com" crossorigin="anonymous" />
    <link href="https://fonts.googleapis.com/css2?family=Inter:wght@100..900&family=Just+Me+Again+Down+Here&display=swap" rel="stylesheet" />
```

I-0fe65cb77de72cd2 (NextWork Public Server)
PublicIPs: 13.49.72.120 PrivateIPs: 10.0.0.4

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Introducing Today's Project!

What is Amazon VPC?

Amazon VPC is a service that lets you create a private, isolated network inside AWS, where you can launch and manage your cloud resources

How I used Amazon VPC in this project

I used Amazon VPC in today's project to test connectivity of resources within a VPC

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

In this project I did expect that connectivity in networks will be this interesting

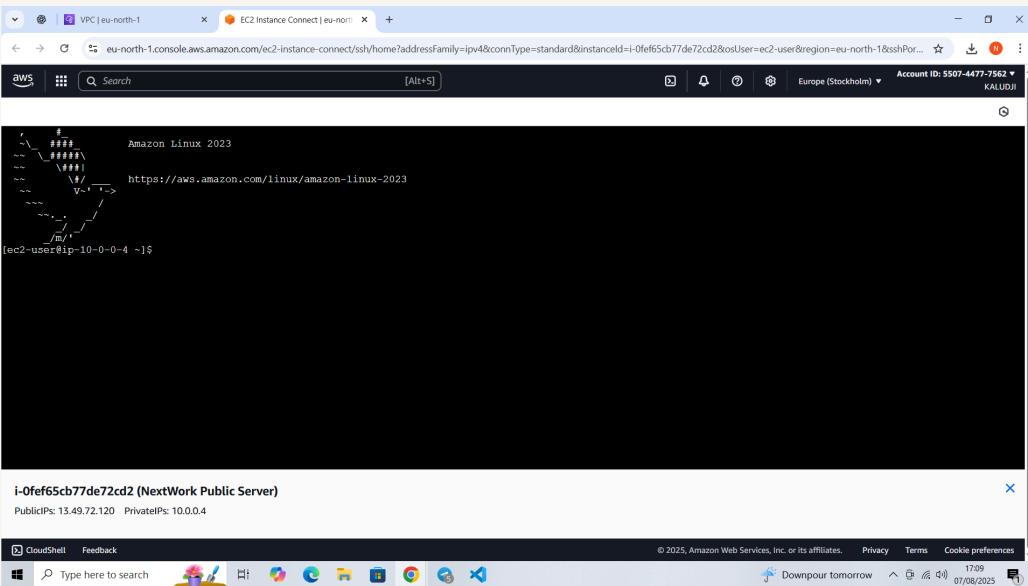
This project took me...

this project took me 45 minutes to complete

Connecting to an EC2 Instance

Connectivity means how well different parts of your network talk to each other and with external networks.

My first connectivity test was whether I could connect to the public server

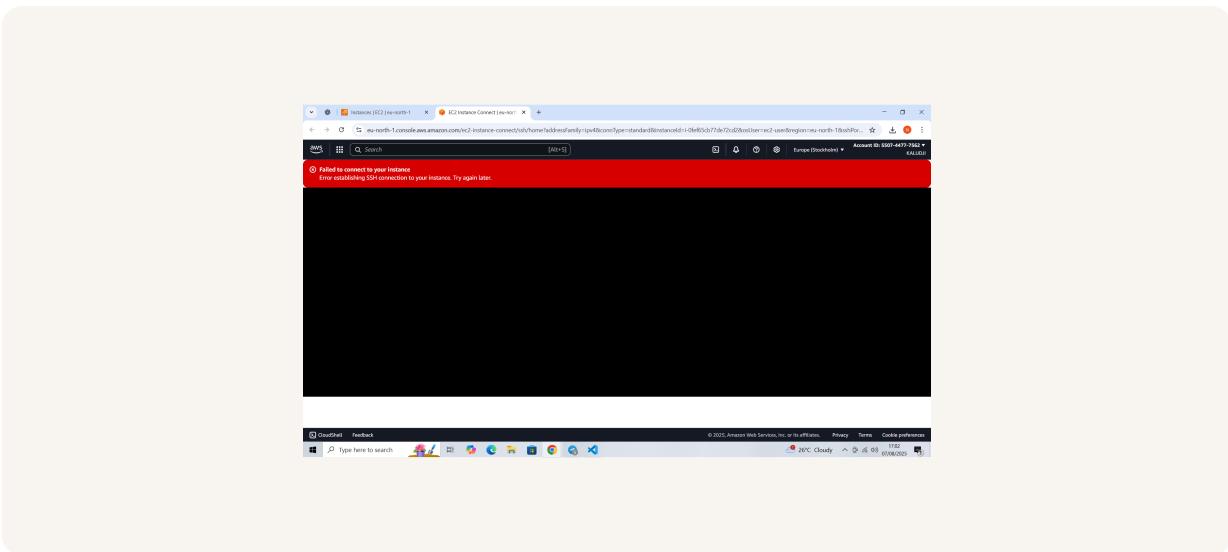


EC2 Instance Connect

I connected to my EC2 instance using EC2 Instance Connect, which is a browser-based way to securely connect to your Amazon EC2 instances using SSH without needing to manage a private key file

My first attempt at getting direct access to my public server resulted in an error, because; The security group associated with NextWork Public Server lets in all inbound HTTP traffic, but We're trying to access NextWork Public Server using SSH

I fixed this error by updating NextWork Public Server's security group rules so it can let in SSH traffic

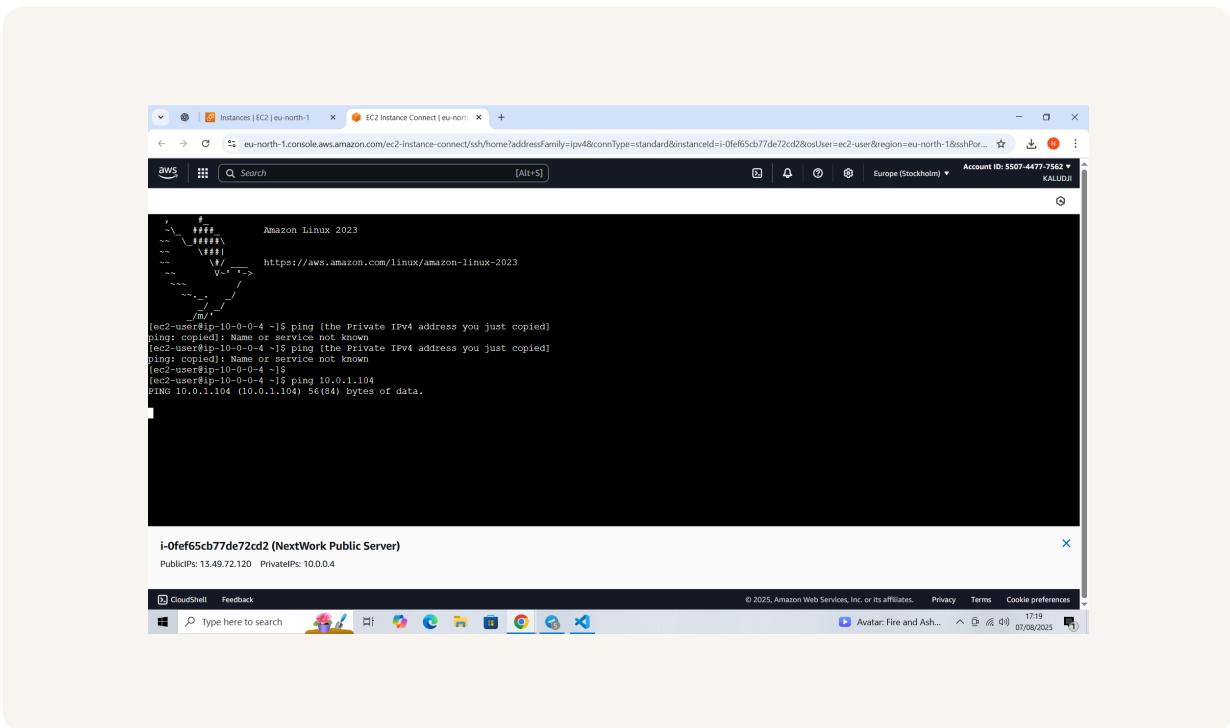


Connectivity Between Servers

Ping is a common computer network tool used to check communication between devices on a network. I used ping to test the connectivity between my server and NextWork Private Server, sending a small packet of data to that and asking for a response

The ping command I ran was ping 10.0.1.104

The first ping returned PING 10.0.1.104 (10.0.1.104) 56(84) bytes of data. This meant that your Public Server has sent out a ping message... and that's about it. No reply





Troubleshooting Connectivity

I troubleshooted this by editing the inbound and outbound rules of the private subnet NACLs and security groups

A screenshot of a Windows desktop environment. At the top, there is a taskbar with several icons. Below the taskbar, a terminal window is open, displaying a continuous stream of network traffic logs. The logs show ICMP echo requests (ICMP seq=554 to 598) being sent from 10.0.1.104 to 10.0.1.104, with TTL values ranging from 127 to 129 and times between 1.13 ms and 1.33 ms. The terminal window has a dark background and light-colored text. At the bottom of the screen, a standard Windows taskbar is visible, featuring icons for CloudShell, Feedback, and various system status indicators like battery level and network connection.

```
64 bytes from 10.0.1.104: icmp_seq=554 ttl=127 time=1.13 ms
64 bytes from 10.0.1.104: icmp_seq=555 ttl=127 time=1.13 ms
64 bytes from 10.0.1.104: icmp_seq=556 ttl=127 time=1.14 ms
64 bytes from 10.0.1.104: icmp_seq=557 ttl=127 time=1.15 ms
64 bytes from 10.0.1.104: icmp_seq=558 ttl=127 time=1.14 ms
64 bytes from 10.0.1.104: icmp_seq=559 ttl=127 time=1.15 ms
64 bytes from 10.0.1.104: icmp_seq=560 ttl=127 time=1.15 ms
64 bytes from 10.0.1.104: icmp_seq=561 ttl=127 time=1.15 ms
64 bytes from 10.0.1.104: icmp_seq=562 ttl=127 time=1.15 ms
64 bytes from 10.0.1.104: icmp_seq=563 ttl=127 time=1.15 ms
64 bytes from 10.0.1.104: icmp_seq=564 ttl=127 time=1.15 ms
64 bytes from 10.0.1.104: icmp_seq=565 ttl=127 time=1.15 ms
64 bytes from 10.0.1.104: icmp_seq=566 ttl=127 time=1.19 ms
64 bytes from 10.0.1.104: icmp_seq=567 ttl=127 time=1.15 ms
64 bytes from 10.0.1.104: icmp_seq=568 ttl=127 time=1.15 ms
64 bytes from 10.0.1.104: icmp_seq=569 ttl=127 time=1.15 ms
64 bytes from 10.0.1.104: icmp_seq=570 ttl=127 time=1.14 ms
64 bytes from 10.0.1.104: icmp_seq=571 ttl=127 time=1.15 ms
64 bytes from 10.0.1.104: icmp_seq=572 ttl=127 time=1.15 ms
64 bytes from 10.0.1.104: icmp_seq=573 ttl=127 time=1.18 ms
64 bytes from 10.0.1.104: icmp_seq=574 ttl=127 time=1.18 ms
64 bytes from 10.0.1.104: icmp_seq=575 ttl=127 time=1.13 ms
64 bytes from 10.0.1.104: icmp_seq=576 ttl=127 time=1.15 ms
64 bytes from 10.0.1.104: icmp_seq=577 ttl=127 time=1.14 ms
64 bytes from 10.0.1.104: icmp_seq=578 ttl=127 time=1.33 ms
64 bytes from 10.0.1.104: icmp_seq=579 ttl=127 time=1.21 ms
64 bytes from 10.0.1.104: icmp_seq=580 ttl=127 time=1.14 ms
```

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Connectivity to the Internet

Curl is a tool to test connectivity in a network.

I used curl to test the connectivity between my public server and the internet

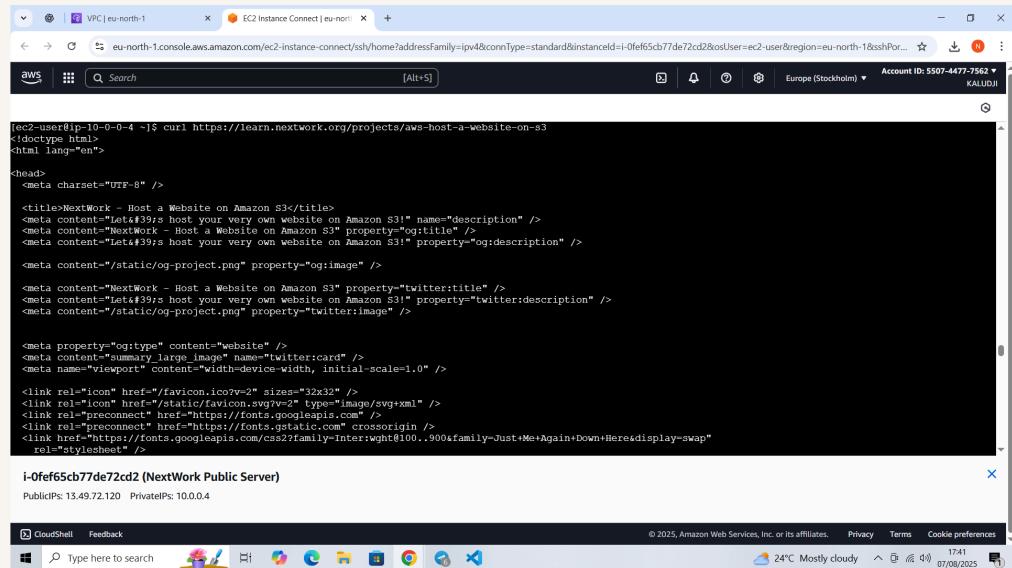
Ping vs Curl

Ping and curl are different because ping checks if one computer can contact another while curl is used to transfer data to or from a server.



Connectivity to the Internet

I ran the curl command `curl https://learn.nextwork.org/projects/aws-host-a-website-on-s3` which returned the complete HTML content of NextWork's web app



```
[ec2-user@ip-10-0-0-4 ~]$ curl https://learn.nextwork.org/projects/aws-host-a-website-on-s3
<!DOCTYPE html>
<html lang="en">
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    <meta property="og:type" content="website" />
    <meta content="summary_large_image" name="twitter:card" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
<link rel="icon" href="/favicon.ico?v=2" sizes="32x32" />
<link rel="icon" href="/static/favicon.svg?v=2" type="image/svg+xml" />
<link rel="preload" href="https://fonts.googleapis.com" />
<link rel="stylesheet" href="https://fonts.gstatic.com/cnS2?family=Inter:wght@100..900&family=Just+Me+Again+Down+Here&display=swap" rel="stylesheet" />
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