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Testing VPC Connectivity

J

Michael K.

```
ec2-user@ip-10-0-0-19 ~]$ curl https://learn.nextwork.org/projects/aws-host-a-website-on-s3 aws-host-a-website-on-s3
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8" />TF-0" />
    <title>NextWork - Host a Website on Amazon S3</title>Amazon S3</title>
    <meta content="Let's host your very own website on Amazon S3!" name="description" />" name="description" />
    <meta><a href="https://aws.amazon.com/s3/>
        <meta content="NextWork - Host a Website on Amazon S3" name="og:title" property="og:title" />
        <meta content="Let's host your very own website on Amazon S3!ite on Amazon S3!" property="og:description" />
        <meta content="NextWork - Host a Website on Amazon S3" name="twitter:title" property="twitter:title" />
        <meta content="Let's host your very own website on Amazon S3!ite on Amazon S3!" property="twitter:description" />
        <meta content="/static/og-project.png" property="og:image" />erty="og:image" />
        <meta content="/static/og-project.png" property="twitter:image" />y="twitter:image" />
    i-03b4978c5db70e774 (My-test-public-server)
    PublicIPs: 3.235.87.218 PrivateIPs: 10.0.0.19
```



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Introducing Today's Project!

What is Amazon VPC?

Amazon VPC (Virtual Private Cloud) is a logically isolated virtual network within AWS where I can launch and manage AWS resources (such as EC2 instances, RDS databases, and load balancers) using my own defined IP address range, subnets, route tables, and network gateways.

How I used Amazon VPC in this project

In today's project, I used Amazon VPC to test the connectivity to my Public server, between My public server and my Private server, and between My VPC and the Internet.

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

One thing I didn't expect in this project was the number of security checks that needs to be done when connecting to a private server.

This project took me...

This project took me 2 hours.



Michael K.

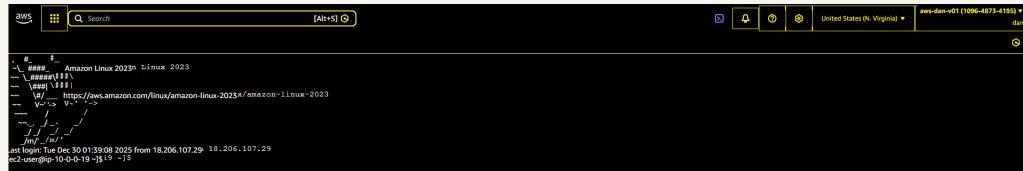
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Connecting to an EC2 Instance

Connectivity is all about how well different parts of my network talk to each other and with external networks.

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

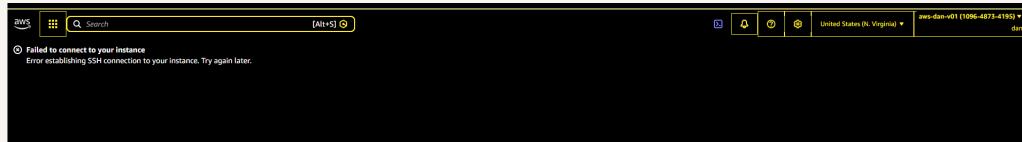


EC2 Instance Connect

I connected to my EC2 instance using EC2 Instance Connect, which is an alternative way to use SSH - Instance Connect lets me securely connect to my EC2 instances directly using the AWS Management Console. I'm still using SSH, but with all the key management handling it for me.

My first attempt at getting direct access to my public server resulted in an error, because even though my server had access to the internet, the security group only allowed a connection to the server with HTTP traffic but i was trying to connect through SSH.

I fixed this error by adding an SSH security Inbound rule, which allows the connection with SSH.





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Connectivity Between Servers

Ping is a common computer network tool used to check whether a computer can communicate with another computer or device on a network. I used ping to test the connectivity between my public and private server.

The ping command I ran was <<ping "private server private IP">>

The first ping returned a <<PING "private server private ip" (private server private ip)56(84) bytes of data. bytes of data.>> This meant that the ICMP (Internet Control Message Protocol) traffic that was sent by the ping either did not reach the private server or it did but the private server response could not reach back the public server.

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```
ec2-user@ip-10-0-0-19:~$ ping 10.0.1.137 -c 10 -t 1.137  
PING 10.0.1.137 (10.0.1.137) 56(84) bytes of data.  
|
```

Troubleshooting Connectivity

I troubleshooted this by : 1. Making sure that the Nacl at the private subnet level of the private server allows ICMP traffic in the inbound and outbound setting rule. 2. Also making sure that the security group attached to the private server also allows ICMP packages. This time i set the permission of ICMP packages from my public server. After that, my public and private servers could successfully talk together.



```
root@ec2-user:~# ping 10.0.1.17 10.0.1.17 10.0.1.17
PING 10.0.1.17(10.0.1.17) 56(84) bytes of data.
64 bytes from 10.0.1.17: icmp_seq=1 ttl=127 time=0.396 ms
64 bytes from 10.0.1.17: icmp_seq=2 ttl=127 time=0.400 ms
64 bytes from 10.0.1.17: icmp_seq=3 ttl=127 time=0.414 ms
64 bytes from 10.0.1.17: icmp_seq=4 ttl=127 time=0.414 ms
64 bytes from 10.0.1.17: icmp_seq=5 ttl=127 time=0.420 ms
64 bytes from 10.0.1.17: icmp_seq=6 ttl=127 time=0.434 ms
64 bytes from 10.0.1.17: icmp_seq=7 ttl=127 time=0.434 ms
64 bytes from 10.0.1.17: icmp_seq=8 ttl=127 time=0.493 ms
64 bytes from 10.0.1.17: icmp_seq=9 ttl=127 time=0.421 ms
```



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Connectivity to the Internet

Curl is a tool to test connectivity in a network. Where ping checks if one computer can contact another (and how long messages take to travel back and forth), curl is used to transfer data to or from a server.

I used curl to test the connectivity between my public server and nextwork.org server or example.com server.

Ping vs Curl

Ping and curl are different because curl does more than testing the connectivity between machines or devices. It is also used to grab data from, or upload data into other servers on the internet!

Connectivity to the Internet

I ran the curl command <<curl https://learn.nextwork.org/projects/aws-host-a-website-on-s3>> which returned the HTML content (Data) of that website.

```
ec2-user@ip-10-0-0-19 ~]$ curl https://learn.nextwork.org/projects/aws-host-a-website-on-s3
<!DOCTYPE html>1>
<html lang="en">n>
<head>d>
<meta charset="UTF-8" />TF-8" />
<title>NextWork - Host a Website on Amazon S3</title>nazon S3</title>
<meta content="Let's host your very own website on Amazon S3!" name="description" />!" name="description" />
<meta>a
content="NextWork - Host a Website on Amazon S3" on Amazon S3"
property="og:title"
/> /
<meta>a
content="Let's host your very own website on Amazon S3!ite on Amazon S3!"
property="og:description"
/> /
<meta>a
content="NextWork - Host a Website on Amazon S3" on Amazon S3"
property="twitter:title"
/> /
<meta>a
content="Let's host your very own website on Amazon S3!ite on Amazon S3!"
property="twitter:description"
/> /
<meta content="/static/og-project.png" property="og:image" />erty="og:image" />
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