



Testing VPC Connectivity

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Introducing Today's Project!

What is Amazon VPC?

VPC is a service that allows users to create and manage virtual networks within AWS. VPCs are useful because they provide users with full control over their networking environment. IP address ranges, Subnets, Route Tables and NetGateways/ Security

How I used Amazon VPC in this project

I used the VPC to create a public and private server. Created public and private subnets, NACL, and a gateway. Spun up an EC2 per subnet with a security group. Connected the 2 servers together via connect instance. Connected the Public to the interne

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

The one thing I didn't expect was the manual input you had to do to make sure both of the servers can connect. It does not automatically configure once an association was made.

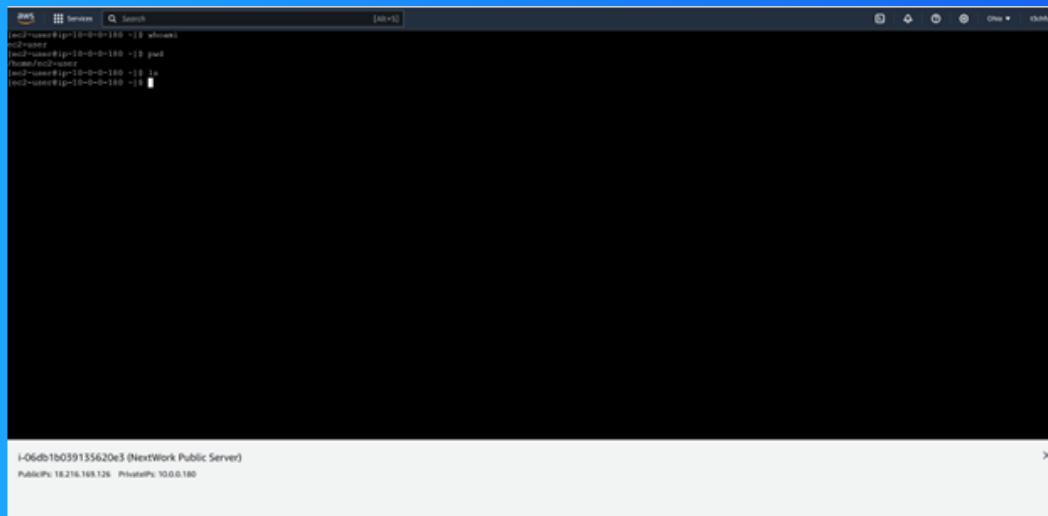
This project took me...

I spent about half an hour completing this project.

Connecting to an EC2 Instance

Connectivity means the communication between cloud resources and on-premises networks. It can also refer to the ability to build networks for applications and workloads that are secure, scalable, and highly available.

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 a free service that allows users to connect to EC2 instances using SSH. It offers a secure and simple way to connect to instances, and it eliminates the need to manage SSH keys.

My first attempt at getting direct access to my public server resulted in an error, because my inbound rules did not allow SSH connections.

I fixed this error by adjusting my inbound rules under Security Groups. After adding a rule, I set the type to SSH and Source type was Anywhere-IPv4

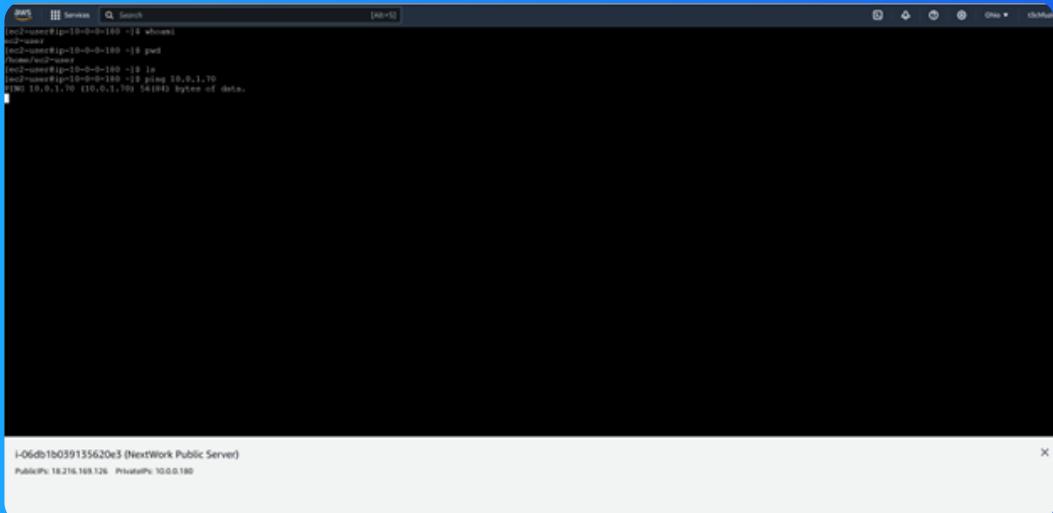


Connectivity Between Servers

Ping is a command-line tool that tests network connectivity. I used ping to test the connectivity between my public and private EC2 servers on the VPC.

The ping command I ran was ping 10.0.1.70, which was the Private EC2 Server

The first ping returned was PING 10.0.1.70 (10.0.1.70) 56(84) bytes of data. This meant I was able to connect to the private server, but did not receive a response.



```
[ec2-user@ip-10-0-0-180 ~]$ whoami
ec2-user
[ec2-user@ip-10-0-0-180 ~]$ ping
[ec2-user@ip-10-0-0-180 ~]$ ls
[ec2-user@ip-10-0-0-180 ~]$ ping 10.0.1.70
PING 10.0.1.70 (10.0.1.70) 56(84) bytes of data.
^C
```

I-06db1b039135620e3 (NextWork Public Server)
PublicIP: 18.216.168.126 PrivateIP: 10.0.0.180

Troubleshooting Connectivity

I troubleshooted this by checking the Route tables and Network ACL. I added All ICMP - IPv4 to type in the inbound rules tab. NextWork Private Security Group inbound rule was also changed to the same type for inbound traffic.

```
ICMP seq=1064 ttl=127 time=0.538 ms
44 bytes From 10.0.1.701 icmp_seq=1065 ttl=127 time=0.473 ms
44 bytes From 10.0.1.701 icmp_seq=1066 ttl=127 time=0.473 ms
44 bytes From 10.0.1.701 icmp_seq=1067 ttl=127 time=0.473 ms
44 bytes From 10.0.1.701 icmp_seq=1068 ttl=127 time=0.454 ms
44 bytes From 10.0.1.701 icmp_seq=1069 ttl=127 time=0.465 ms
44 bytes From 10.0.1.701 icmp_seq=1070 ttl=127 time=0.459 ms
44 bytes From 10.0.1.701 icmp_seq=1071 ttl=127 time=0.480 ms
44 bytes From 10.0.1.701 icmp_seq=1072 ttl=127 time=0.468 ms
44 bytes From 10.0.1.701 icmp_seq=1073 ttl=127 time=0.468 ms
44 bytes From 10.0.1.701 icmp_seq=1074 ttl=127 time=0.566 ms
44 bytes From 10.0.1.701 icmp_seq=1075 ttl=127 time=0.503 ms
44 bytes From 10.0.1.701 icmp_seq=1076 ttl=127 time=0.503 ms
44 bytes From 10.0.1.701 icmp_seq=1077 ttl=127 time=0.477 ms
44 bytes From 10.0.1.701 icmp_seq=1078 ttl=127 time=0.465 ms
44 bytes From 10.0.1.701 icmp_seq=1079 ttl=127 time=0.465 ms
44 bytes From 10.0.1.701 icmp_seq=1080 ttl=127 time=0.449 ms
44 bytes From 10.0.1.701 icmp_seq=1081 ttl=127 time=0.449 ms
44 bytes From 10.0.1.701 icmp_seq=1082 ttl=127 time=0.463 ms
44 bytes From 10.0.1.701 icmp_seq=1083 ttl=127 time=0.460 ms
44 bytes From 10.0.1.701 icmp_seq=1084 ttl=127 time=0.460 ms
44 bytes From 10.0.1.701 icmp_seq=1085 ttl=127 time=0.521 ms
44 bytes From 10.0.1.701 icmp_seq=1086 ttl=127 time=0.459 ms
44 bytes From 10.0.1.701 icmp_seq=1087 ttl=127 time=0.459 ms
44 bytes From 10.0.1.701 icmp_seq=1088 ttl=127 time=0.452 ms
44 bytes From 10.0.1.701 icmp_seq=1089 ttl=127 time=0.452 ms
44 bytes From 10.0.1.701 icmp_seq=1090 ttl=127 time=0.453 ms
44 bytes From 10.0.1.701 icmp_seq=1091 ttl=127 time=0.479 ms
44 bytes From 10.0.1.701 icmp_seq=1092 ttl=127 time=0.433 ms
44 bytes From 10.0.1.701 icmp_seq=1093 ttl=127 time=0.433 ms
44 bytes From 10.0.1.701 icmp_seq=1094 ttl=127 time=0.492 ms
44 bytes From 10.0.1.701 icmp_seq=1095 ttl=127 time=0.449 ms
44 bytes From 10.0.1.701 icmp_seq=1096 ttl=127 time=0.449 ms
44 bytes From 10.0.1.701 icmp_seq=1097 ttl=127 time=0.543 ms
44 bytes From 10.0.1.701 icmp_seq=1098 ttl=127 time=0.467 ms
44 bytes From 10.0.1.701 icmp_seq=1099 ttl=127 time=0.467 ms
44 bytes From 10.0.1.701 icmp_seq=1100 ttl=127 time=0.519 ms
44 bytes From 10.0.1.701 icmp_seq=1101 ttl=127 time=0.519 ms
44 bytes From 10.0.1.701 icmp_seq=1102 ttl=127 time=0.457 ms
44 bytes From 10.0.1.701 icmp_seq=1103 ttl=127 time=0.515 ms
44 bytes From 10.0.1.701 icmp_seq=1104 ttl=127 time=0.471 ms
```

i-06db1b039135620e3 (NextWork Public Server)
PublicIP: 18.216.169.126 PrivateIP: 10.0.0.180

Connectivity to the Internet

cURL is a command-line tool that allows users to transfer data between a server and a device. It is an acronym for "client URL".

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 a device is online and how long it takes to respond. It sends a small signal to the device and waits for a reply. Curl is used to fetch data from a website or server.



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Connectivity to the Internet

I ran the curl command `curl example.org` which returned raw HTML from the server.



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