



Testing VPC Connectivity

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Introducing Today's Project!

What is Amazon VPC?

Amazon VPC is a service that allows users to create private networks within the AWS cloud. It provides enhanced security, customizable network configurations and easy scalability.

How I used Amazon VPC in this project

I utilized Amazon VPC to set up a VPC that included both a public and a private subnet. I then launched servers in each subnet and successfully established a connection between them.

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

Setting up remote servers is a very simple process using AWS. With the right tools and configurations, you can easily create and manage servers that are accessible from anywhere.

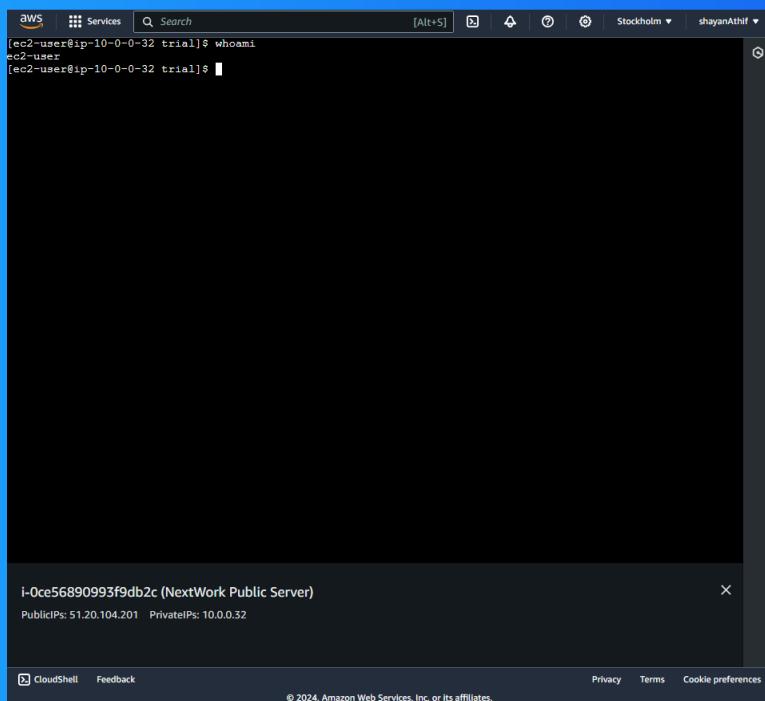
This project took me...

Around 60 minutes.

Connecting to an EC2 Instance

Connectivity is how different parts of your network communicate with each other and with other networks. It is important as it is how data flows smoothly, without any issues, across your network.

My first test for connectivity was to see if I could successfully connect to the public server that I created using EC2 Instance Connect. I wanted to ensure that the connection was working properly before proceeding with other tasks.

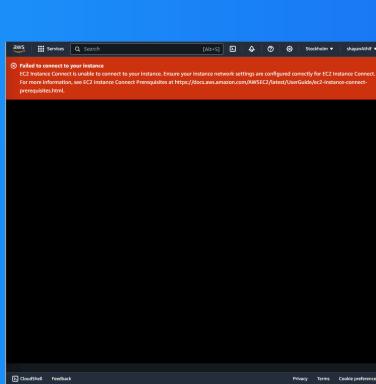


EC2 Instance Connect

I connected to my EC2 instance using EC2 Instance Connect, which is an alternative way to use SSH. It lets you securely connect to your EC2 instances directly using the AWS Management Console, taking away all the complexity of setting up an SSH.

My first attempt at getting direct access to my public server resulted in an error, because the security group associated with the public server lets in all inbound HTTP traffic but we're trying to access using SSH through EC2 Instance Connect.

I resolved the issue by adding a new inbound rule to the security group, which allowed inbound SSH traffic. This correction enabled me to successfully connect to the public server.

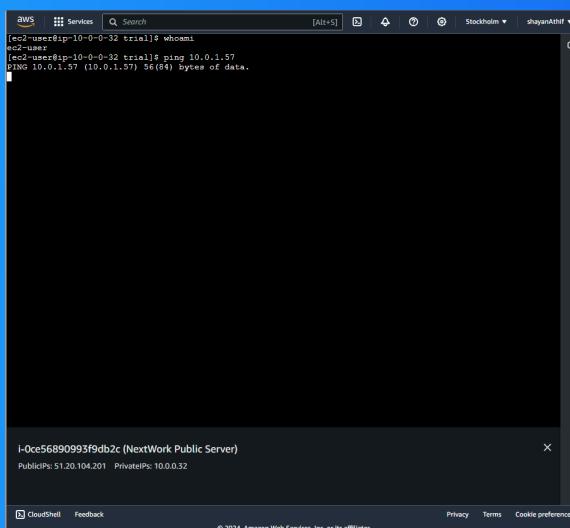


Connectivity Between Servers

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

The ping command i ran was - ping 10.0.1.227 [The Private IPv4 address]

The first ping returned a single line and that was about it. This meant that the public server sent out a ping message but didn't receive a reply. It must be due to the fact that it doesn't allow traffic of type ICMP.



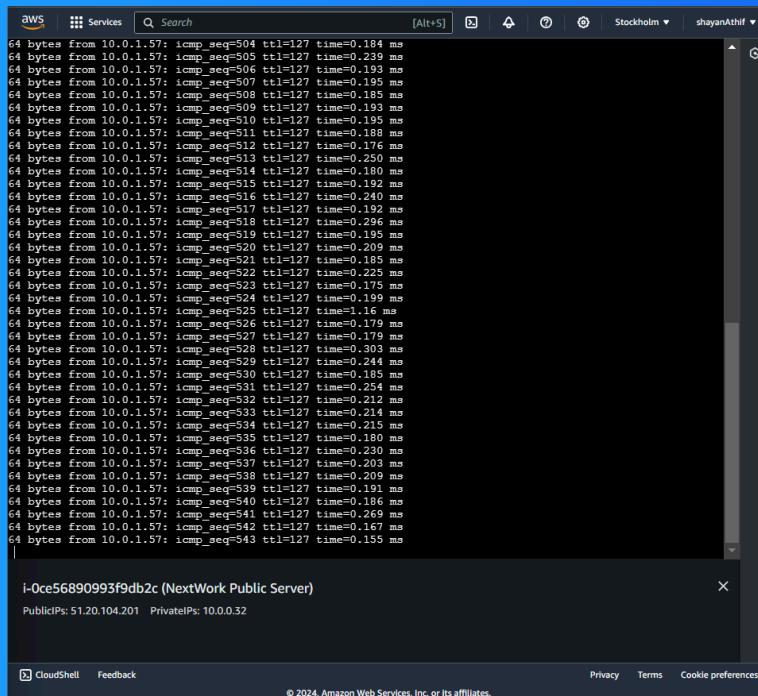
```
[ec2-user@ip-10-0-0-32 trial]$ whoami
root
[ec2-user@ip-10-0-0-32 trial]$ ping 10.0.1.57
PING 10.0.1.57 (10.0.1.57) 56(84) bytes of data.
```

i-0c5689093f9db2c (NextWork Public Server)
PublicIPs: 51.20.104.201 PrivateIPs: 10.0.0.32

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Troubleshooting Connectivity

I troubleshooted the issue by examining the route tables and network ACLs, discovering that all inbound and outbound ICMP traffic was denied. I then added a new rule to permit ICMP traffic, resolving the connectivity problem.



```
aws Services Search [Alt+S] Stockholm shayanAthif
64 bytes from 10.0.1.57: icmp_seq=504 ttl=127 time=0.184 ms
64 bytes from 10.0.1.57: icmp_seq=505 ttl=127 time=0.239 ms
64 bytes from 10.0.1.57: icmp_seq=506 ttl=127 time=0.193 ms
64 bytes from 10.0.1.57: icmp_seq=507 ttl=127 time=0.195 ms
64 bytes from 10.0.1.57: icmp_seq=508 ttl=127 time=0.185 ms
64 bytes from 10.0.1.57: icmp_seq=509 ttl=127 time=0.199 ms
64 bytes from 10.0.1.57: icmp_seq=510 ttl=127 time=0.196 ms
64 bytes from 10.0.1.57: icmp_seq=511 ttl=127 time=0.188 ms
64 bytes from 10.0.1.57: icmp_seq=512 ttl=127 time=0.176 ms
64 bytes from 10.0.1.57: icmp_seq=513 ttl=127 time=0.250 ms
64 bytes from 10.0.1.57: icmp_seq=514 ttl=127 time=0.180 ms
64 bytes from 10.0.1.57: icmp_seq=515 ttl=127 time=0.192 ms
64 bytes from 10.0.1.57: icmp_seq=516 ttl=127 time=0.240 ms
64 bytes from 10.0.1.57: icmp_seq=517 ttl=127 time=0.192 ms
64 bytes from 10.0.1.57: icmp_seq=518 ttl=127 time=0.296 ms
64 bytes from 10.0.1.57: icmp_seq=519 ttl=127 time=0.195 ms
64 bytes from 10.0.1.57: icmp_seq=520 ttl=127 time=0.199 ms
64 bytes from 10.0.1.57: icmp_seq=521 ttl=127 time=0.185 ms
64 bytes from 10.0.1.57: icmp_seq=522 ttl=127 time=0.225 ms
64 bytes from 10.0.1.57: icmp_seq=523 ttl=127 time=0.175 ms
64 bytes from 10.0.1.57: icmp_seq=524 ttl=127 time=0.199 ms
64 bytes from 10.0.1.57: icmp_seq=525 ttl=127 time=1.16 ms
64 bytes from 10.0.1.57: icmp_seq=526 ttl=127 time=0.179 ms
64 bytes from 10.0.1.57: icmp_seq=527 ttl=127 time=0.179 ms
64 bytes from 10.0.1.57: icmp_seq=528 ttl=127 time=0.303 ms
64 bytes from 10.0.1.57: icmp_seq=529 ttl=127 time=0.244 ms
64 bytes from 10.0.1.57: icmp_seq=530 ttl=127 time=0.254 ms
64 bytes from 10.0.1.57: icmp_seq=531 ttl=127 time=0.213 ms
64 bytes from 10.0.1.57: icmp_seq=532 ttl=127 time=0.213 ms
64 bytes from 10.0.1.57: icmp_seq=533 ttl=127 time=0.214 ms
64 bytes from 10.0.1.57: icmp_seq=534 ttl=127 time=0.215 ms
64 bytes from 10.0.1.57: icmp_seq=535 ttl=127 time=0.180 ms
64 bytes from 10.0.1.57: icmp_seq=536 ttl=127 time=0.230 ms
64 bytes from 10.0.1.57: icmp_seq=537 ttl=127 time=0.203 ms
64 bytes from 10.0.1.57: icmp_seq=538 ttl=127 time=0.209 ms
64 bytes from 10.0.1.57: icmp_seq=539 ttl=127 time=0.191 ms
64 bytes from 10.0.1.57: icmp_seq=540 ttl=127 time=0.186 ms
64 bytes from 10.0.1.57: icmp_seq=541 ttl=127 time=0.169 ms
64 bytes from 10.0.1.57: icmp_seq=542 ttl=127 time=0.167 ms
64 bytes from 10.0.1.57: icmp_seq=543 ttl=127 time=0.155 ms
```

i-0ce56890993f9db2c (NextWork Public Server)
PublicIPs: 51.20.104.201 PrivateIPs: 10.0.0.32

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Connectivity to the Internet

curl is a tool to test connectivity in a network. It is used to transfer data to or from a server. When you use this command followed by a website address, it sends an HTTP request to the server that hosts the website .

I used curl to test the connectivity between the public server and the internet. Not only can it be used for checking connectivity, you can also use curl to grab data from, or upload data into other servers on the internet.

Ping vs Curl

Ping and curl are different because Ping is used to check whether your computer can communicate with another computer or device on a network while curl is a tool to test connectivity and grab/upload data from 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 raw HTML data of NextWork's web app.



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