



Testing VPC Connectivity

NI

nikhil7_94@hotmail.com

Introducing Today's Project!

What is Amazon VPC?

Amazon VPC is a private isolated network in the cloud where you can securely run resources like servers and databases. It's useful because it gives full control over network settings, security, and connectivity to the internet or other networks.

How I used Amazon VPC in this project

Today I used Amazon VPC to test VPC connectivity. I did this by connecting the public server with the internet and with the private EC2 instance.

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

One thing I didnt expect was you can make this connectivity directly from the AWS console.

This project took me...

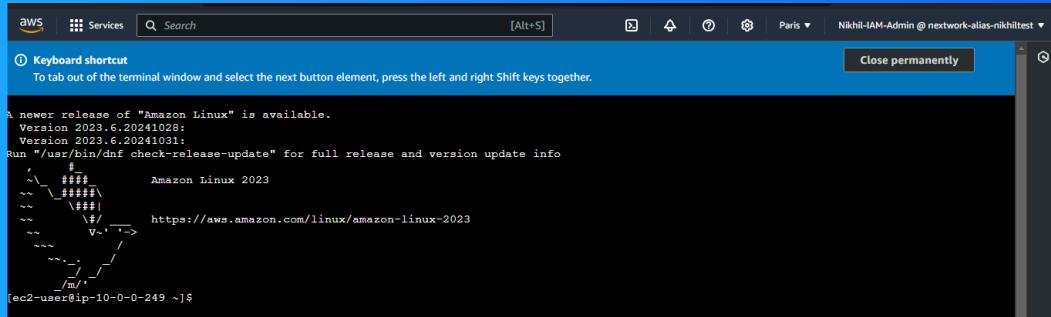
I took around 2 hours with this project.



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 EC2 instances to talk to each other despite being in different subnets.

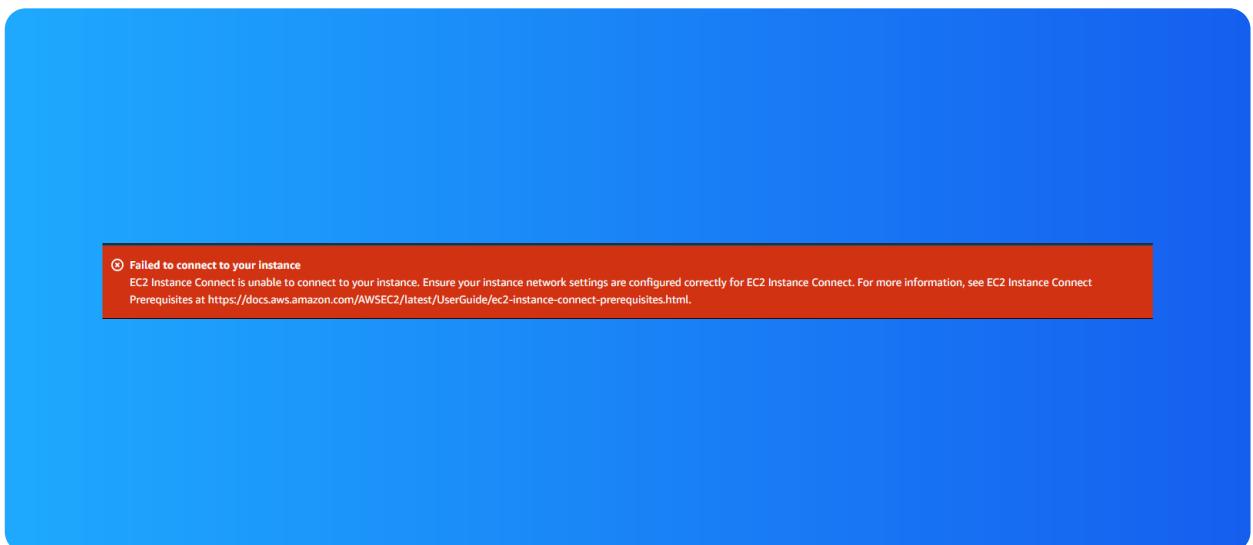


EC2 Instance Connect

I connected to my EC2 instance using EC2 Instance Connect, which is an alternative way to use SSH - Instance Connect lets you securely connect to your EC2 instances directly using the AWS Management Console.

My first attempt at getting direct access to my public server resulted in an error, because I didn't have configured an inbound rule of allowing access by SSH to all IPv4s in my public security group.

I fixed this error by adding a new inbound rule allowing access by SSH to all IPv4 in my public security group.



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 my public EC2 instance and the private EC2.

The ping command I ran was "PING 10.0.1.78" which is my IPv4 address.

The first ping returned sign of successful communication between the two EC2 instances. This meant the ICMP traffic is now successfully reaching the private server thanks to the adjustments you made in the network ACLs and Security Groups.

```
A newer release of "Amazon Linux" is available.
Version 2023.6.20241028:
Version 2023.6.20241031:
Run "/usr/bin/dnf check-release-update" for full release and version update info
  # 
  ~\ _###_      Amazon Linux 2023
  ~~ \###\ \
  ~~ \##| \
  ~~ \#/ _--> https://aws.amazon.com/linux/amazon-linux-2023
  ~~ V~' '-->
  ~~~
  ~~~ .-. / \
  ~~~ .-. / \
  /m/
[ec2-user@ip-10-0-0-249 ~]$ ping 10.0.1.78
PING 10.0.1.78 (10.0.1.78) 56(84) bytes of data.
```

Troubleshooting Connectivity

I troubleshooted this by adding the inbound rules in the private subnet and in the network ACL of allowing ICMP traffic to the users with the correct IPv4.

```
64 bytes from 10.0.1.78: icmp_seq=39 ttl=127 time=0.289 ms
64 bytes from 10.0.1.78: icmp_seq=40 ttl=127 time=0.729 ms
64 bytes from 10.0.1.78: icmp_seq=41 ttl=127 time=0.721 ms
64 bytes from 10.0.1.78: icmp_seq=42 ttl=127 time=0.567 ms
64 bytes from 10.0.1.78: icmp_seq=43 ttl=127 time=0.638 ms
64 bytes from 10.0.1.78: icmp_seq=44 ttl=127 time=0.292 ms
64 bytes from 10.0.1.78: icmp_seq=45 ttl=127 time=0.595 ms
64 bytes from 10.0.1.78: icmp_seq=46 ttl=127 time=0.276 ms
64 bytes from 10.0.1.78: icmp_seq=47 ttl=127 time=0.510 ms
64 bytes from 10.0.1.78: icmp_seq=48 ttl=127 time=0.971 ms
64 bytes from 10.0.1.78: icmp_seq=49 ttl=127 time=0.533 ms
64 bytes from 10.0.1.78: icmp_seq=50 ttl=127 time=1.35 ms
64 bytes from 10.0.1.78: icmp_seq=51 ttl=127 time=1.04 ms
64 bytes from 10.0.1.78: icmp_seq=52 ttl=127 time=0.899 ms
64 bytes from 10.0.1.78: icmp_seq=53 ttl=127 time=0.732 ms
64 bytes from 10.0.1.78: icmp_seq=54 ttl=127 time=1.46 ms
64 bytes from 10.0.1.78: icmp_seq=55 ttl=127 time=1.25 ms
64 bytes from 10.0.1.78: icmp_seq=56 ttl=127 time=0.703 ms
64 bytes from 10.0.1.78: icmp_seq=57 ttl=127 time=0.550 ms
64 bytes from 10.0.1.78: icmp_seq=58 ttl=127 time=0.681 ms
64 bytes from 10.0.1.78: icmp_seq=59 ttl=127 time=0.928 ms
64 bytes from 10.0.1.78: icmp_seq=60 ttl=127 time=0.879 ms
64 bytes from 10.0.1.78: icmp_seq=61 ttl=127 time=0.937 ms
64 bytes from 10.0.1.78: icmp_seq=62 ttl=127 time=1.02 ms
```

Connectivity to the Internet

Curl is a tool to test connectivity in a network. When you use the curl command followed by a website address, e.g. example.com, the command sends an HTTP request to the server that hosts the website.

I used curl to test the connectivity between my public server and a web app.

Ping vs Curl

Ping and curl are different because ping checks network connectivity to a host, while curl retrieves data from a server, often using HTTP or other protocols.

Connectivity to the Internet

I ran the curl command for example.com which returned the raw html from the server.

```
></script>

<project-app
    <!-- project-app -->
    <!-- id=434; #434;aws-host-a-website-on-s3; #434; #434;metadatna#434;: #434;category#434;:#434;storage#434;:#434;concepts#434;:#434;
    <!-- u003ca target=_blank href=https://youtu.be/R0fgqQd3mMw #434;:u003ca/u003c#434;,#434;cont#434;:#434;S06#434;,#434;description#434;:#434;Let's#434;: host your very own website on Amazon S3!#434;,#434;difficulty#434;:#434;Easy peasy#434;,#434;icon#434;:#434;projects/static/1/icon.png#434;:#434;needs#434;:[#434;An AWS account - \u003ca target=_blank#434; href=https://learn.nextwork.org/projects/aws-account-setup?utm_source=project#434;\u003eCreate one here!\u003ca/u003e#434;],#434;order#434;:#434;1.1#434;,#434;sharetemplates#434;:#434;: #434; #434;Just wrapped up a thrilling Amazon S3 project-challenge mode engaged! #434;In this project, I:#434;Created and configured an Amazon S3 bucket, complete with ACLe, versioning, and public access.#434;Uploaded website content, diving deep into how static websites function and how to host them on S3.#434;Tackled public access settings and fixed an interesting challenge with the website#434;; visibility.#434;See my journey from creating buckets to deploying a fully functional static website in my documentation below.#434;Shoutout to all AWS learners-let's connect, share tips, and keep improving!#434;Big thanks to @NextWork for setting up this engaging challenge. Ready for the next one! link.nextwork.org/linkeedin#awscloud #amazons3 #434;,#434;times#434;:#434;45 min#434;,#434;titles#434;:#434;Host a Website on Amazon S3#434;,#434;tracks#434;:[#434;description#434;:#434;Leaves most of it up to you. Great for those looking for a challenge.#434;,#434;id#434;:#434;low#434;,#434;title#434;:#434;#1 - Low Touch#434;,#434;description#434;:#434;Gives step-by-step instructions for every part. Great for beginners!#434;,#434;id#434;:#434;high#434;,#434;title#434;:#434;#2 - High Touch#434;],#434;visibility#434;:#434;public#434;,#434;status#434;:#434;INCOMPLETE#434;)" selectedTrack="#434;#434;">
</project-app>

</body>
</html>
[sc2-user@lnp-10-0-0-249 ~]$
```



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