

Testing VPC Connectivity

A

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```
<script>
    window.sentryOnLoad = function () {
        window.Sentry.init({
            environment: "prod"
        });
    }
</script>
<script async src="https://js.sentry-cdn.com/149a6bc4cd616ff81bea862cf35e71eb.min.js" data-lazy="no" crossorigin="anonymous"></script>

<project-app project="{id:aws-host-a-website-on-s3, metadata:{category:"S", storage:"S3", concepts:[{target:_blank}], cost:$0, difficulty:5, description:Lets you very own website on Amazon S3, An AWS account - one here!, create one here!, target:_blank, href:https://docs.aws.amazon.com/accounts/latest/reference/manage-acct-creating.html, icons:[icon3], order:1}, {id:awscloud_amazons3_tracks, metadata:{category:"S3", storage:"S3", concepts:[{target:_blank}], cost:$0, difficulty:5, description:Host a Website on Amazon S3, tracks:[{description:"Leaves most of it up to you. Great for those looking for a challenge.", id:low, title:"#1 - Low Touch"}, {description:"Gives step-by-step instructions for every part. Great for beginners!", id:high, title:"#2 - High Touch"}]}, order:2}]">
    <nw-track-manager>
        <nw-track id="low" ref="aws-host-a-website-on-s3/low" title="#1 - Low Touch" description="Leaves most of it up to you. Great for those looking for a challenge."></nw-track>
        <nw-track id="high" ref="aws-host-a-website-on-s3/high" title="#2 - High Touch" description="Gives step-by-step instructions for every part. Great for beginners!"></nw-track>
    </nw-track-manager>
</project-app>
```



Introducing Today's Project!

What is Amazon VPC?

Amazon VPC lets you create a secure, isolated network in AWS. It's useful for setting up public/private subnets, routing, NAT gateways, and secure EC2 access. It helps control traffic flow, verify connectivity (ping/curl), and protect resources.

How I used Amazon VPC in this project

↑ Connect to your Public Server from the AWS Management Console. □ Test connectivity between your EC2 instances. □ Test VPC connectivity with the internet.

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

The errors trying to run the ping command

This project took me...

This project took me an hour to complete



Connecting to an EC2 Instance

Connectivity is all about how well different parts of your network talk to each other and with external networks. It's essential because connectivity is how data flows smoothly across your network, powering everything

My first connectivity test was whether I could connect to the public ec2 instance

```
Amazon Linux 2023
https://aws.amazon.com/linux/amazon-linux-2023

last login: Tue Jul  9 09:28:51 2024 from 18.237.140.163
ec2-user@ip-10-0-0-87 ~]$
```

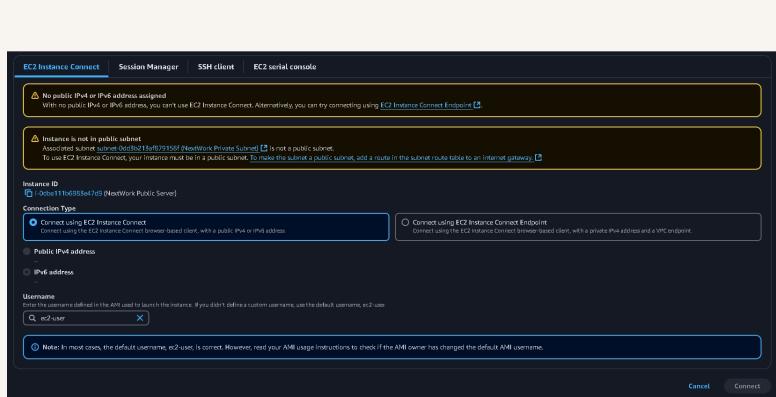


EC2 Instance Connect

EC2 Instance Connect is a shortcut way to get direct SSH access to your EC2 instance!

The security group associated with NextWork Public Server lets in all inbound HTTP traffic, but this is not how we're trying to access our Public Server!

In the Inbound rules tab, select Edit inbound rules. Select Add rule. For your new rule, configure the Type as SSH. Then, under Source type, select Anywhere-IPv4.

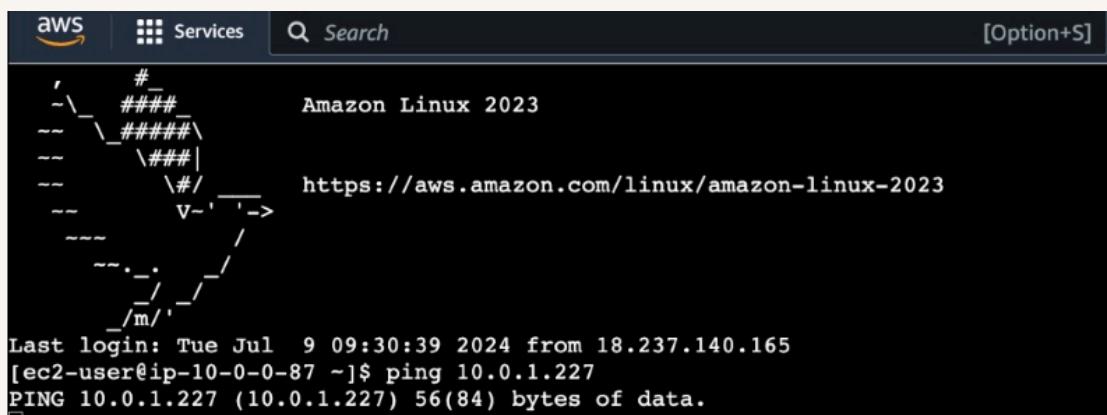


Connectivity Between Servers

Ping is a network tool that tests connectivity between devices by sending ICMP echo requests. You used it to check if your instance or server is reachable over the network, helping verify network setup, like routing or firewall rules.

ping [the Private IPv4 address you just copied]

One common reason for these issues is that the target machine (i.e. NextWork Private Server) or its network might be blocking the type of messages used in ping, which are known as ICMP (Internet Control Message Protocol) traffic.



The screenshot shows a terminal window with the AWS logo and a search bar at the top. The main area displays a login banner for Amazon Linux 2023, featuring a stylized tree graphic and the URL <https://aws.amazon.com/linux/amazon-linux-2023>. Below the banner, the terminal shows a user's last login information: "Last login: Tue Jul 9 09:30:39 2024 from 18.237.140.165". The user then runs the command "[ec2-user@ip-10-0-0-87 ~]\$ ping 10.0.1.227", which returns the output "PING 10.0.1.227 (10.0.1.227) 56(84) bytes of data."



Troubleshooting Connectivity

The network ACL is checking the ping traffic at the entrance of your private subnet. If it finds that ICMP traffic is not allowed, it stops the ping there.



```
64 bytes from 10.0.1.227: icmp_seq=134 ttl=127 time=0.962 ms
64 bytes from 10.0.1.227: icmp_seq=135 ttl=127 time=0.871 ms
64 bytes from 10.0.1.227: icmp_seq=136 ttl=127 time=0.915 ms
64 bytes from 10.0.1.227: icmp_seq=137 ttl=127 time=0.902 ms
64 bytes from 10.0.1.227: icmp_seq=138 ttl=127 time=0.938 ms
64 bytes from 10.0.1.227: icmp_seq=139 ttl=127 time=0.904 ms
64 bytes from 10.0.1.227: icmp_seq=140 ttl=127 time=1.96 ms
64 bytes from 10.0.1.227: icmp_seq=141 ttl=127 time=0.859 ms
64 bytes from 10.0.1.227: icmp_seq=142 ttl=127 time=0.929 ms
64 bytes from 10.0.1.227: icmp_seq=143 ttl=127 time=0.915 ms
64 bytes from 10.0.1.227: icmp_seq=144 ttl=127 time=0.933 ms
64 bytes from 10.0.1.227: icmp_seq=145 ttl=127 time=0.892 ms
64 bytes from 10.0.1.227: icmp_seq=146 ttl=127 time=2.27 ms
64 bytes from 10.0.1.227: icmp_seq=147 ttl=127 time=0.902 ms
64 bytes from 10.0.1.227: icmp_seq=148 ttl=127 time=0.920 ms
64 bytes from 10.0.1.227: icmp_seq=149 ttl=127 time=0.904 ms
64 bytes from 10.0.1.227: icmp_seq=150 ttl=127 time=0.937 ms
64 bytes from 10.0.1.227: icmp_seq=151 ttl=127 time=0.902 ms
64 bytes from 10.0.1.227: icmp_seq=152 ttl=127 time=0.875 ms
64 bytes from 10.0.1.227: icmp_seq=153 ttl=127 time=0.915 ms
64 bytes from 10.0.1.227: icmp_seq=154 ttl=127 time=0.910 ms
64 bytes from 10.0.1.227: icmp_seq=155 ttl=127 time=0.931 ms
64 bytes from 10.0.1.227: icmp_seq=156 ttl=127 time=0.883 ms
64 bytes from 10.0.1.227: icmp_seq=157 ttl=127 time=0.928 ms
64 bytes from 10.0.1.227: icmp_seq=158 ttl=127 time=0.938 ms
64 bytes from 10.0.1.227: icmp_seq=159 ttl=127 time=0.901 ms
64 bytes from 10.0.1.227: icmp_seq=160 ttl=127 time=0.912 ms
64 bytes from 10.0.1.227: icmp_seq=161 ttl=127 time=0.897 ms
64 bytes from 10.0.1.227: icmp_seq=162 ttl=127 time=0.911 ms
64 bytes from 10.0.1.227: icmp_seq=163 ttl=127 time=0.893 ms
64 bytes from 10.0.1.227: icmp_seq=164 ttl=127 time=0.891 ms
64 bytes from 10.0.1.227: icmp_seq=165 ttl=127 time=0.935 ms
64 bytes from 10.0.1.227: icmp_seq=166 ttl=127 time=0.870 ms
64 bytes from 10.0.1.227: icmp_seq=167 ttl=127 time=0.943 ms
64 bytes from 10.0.1.227: icmp_seq=168 ttl=127 time=0.973 ms
64 bytes from 10.0.1.227: icmp_seq=169 ttl=127 time=0.934 ms
64 bytes from 10.0.1.227: icmp_seq=170 ttl=127 time=0.931 ms
64 bytes from 10.0.1.227: icmp_seq=171 ttl=127 time=0.948 ms
64 bytes from 10.0.1.227: icmp_seq=172 ttl=127 time=0.948 ms
64 bytes from 10.0.1.227: icmp_seq=173 ttl=127 time=0.891 ms
64 bytes from 10.0.1.227: icmp_seq=174 ttl=127 time=0.950 ms
64 bytes from 10.0.1.227: icmp_seq=175 ttl=127 time=0.926 ms
64 bytes from 10.0.1.227: icmp_seq=176 ttl=127 time=0.966 ms
64 bytes from 10.0.1.227: icmp_seq=177 ttl=127 time=0.890 ms
64 bytes from 10.0.1.227: icmp_seq=178 ttl=127 time=0.932 ms
64 bytes from 10.0.1.227: icmp_seq=179 ttl=127 time=0.922 ms
64 bytes from 10.0.1.227: icmp_seq=180 ttl=127 time=0.921 ms
64 bytes from 10.0.1.227: icmp_seq=181 ttl=127 time=0.940 ms
```



Connectivity to the Internet

Just like ping, 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.

This output confirms that your Public Server instance can talk with the internet.

Ping vs Curl

Ping checks if a host is reachable by sending ICMP packets—useful for basic connectivity tests. Curl makes HTTP requests to a URL—useful for checking web server responses or APIs. Ping tests network, curl tests application layer.



Connectivity to the Internet

I ran the curl command `curl https://learn.nextwork.org/projects/aws-host-a-website-on-s3` which fetched the complete HTML content of NextWork's web app (specifically, the first project on the web app),





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