

# Testing VPC Connectivity



# Prajit Venkatachalam

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```
aws Services Search [Alt+S] Sydney Prajit-IAM-Admin @ 6374-2362-3277
ixed an interesting challenge with the website#34;rs visibility.\n\nSee my journey from creating buckets to deploying a fully functioni
al static website in my documentation below.\n\nShoutout to all AWS learners-let#34;s connect, share tips, and keep improving!\n\n👉
ig thanks to Nextwork for setting up this engaging challenge. Ready for the next one! link.nextwork.org/linkedinn\n\nawscloud #amazon#
#34;,{#34;time#34;:#{#34;45 min#34;},{#34;title#34;:#{#34;Host a Website on Amazon S3#34;},{#34;tracks#34;:#{#34;#{#34;description#34;:#{#34;
34;Leaves most of it up to you. Great for those looking for a challenge.#{#34;},{#34;low#34;:#{#34;#{#34;title#34;:#{#34;#1 - Low
Touch#34;},{#34;description#34;:#{#34;#{#34;Given step-by-step instructions for every part. Great for beginners!#{#34;},{#34;high#34;:#{#34;#{#34;title#34;:#{#34;#2 - High Touch#34;}}},{#34;visibility#34;:#{#34;#{#34;public#34;},{#34;status#34;:#{#34;INCOMPLETE#34;}}>

<mw-track-manager>

    <mw-track id="low" ref="aws-host-a-website-on-s3/low" title="#1 - Low Touch" description="Leaves most of it up to you. Great
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</mw-track-manager>
</project-app>

</body>
</html>

[ec2-user@ip-10-0-0-61 ~]$
i-085e3c0c1690dcd56 (Prajit Public server)
PublicIP: 54.66.61.103 PrivateIP: 10.0.0.61
```



# Introducing Today's Project!

## What is Amazon VPC?

Amazon VPC (Virtual Private Cloud) exists within an AWS region and is used to build a private and secure connection for resources in the subnets. Through an internet gateway, these resources and users can access internet to communicate each other.

## How I used Amazon VPC in this project

In today's project, I used Amazon VPC to set up a VPC and its components using the VPC wizard, then launched EC2 instances and tested the connectivity between my network resources.

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

One thing I did not expect in this project was running into an error while trying to connect to the 'Prajit public server' using EC2 Instance Connect. It was resolved by adding SSH traffic to the inbound rule of the public security group.

## This project took me...

This project took me 3 hours to complete, include the report writing.



My first connectivity test was whether I could connect to my network's public server (an EC2 instance).

[illegible]

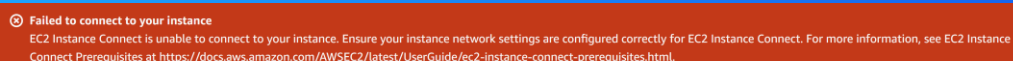


# EC2 Instance Connect

I connected to my EC2 instance using EC2 Instance Connect, a tool that allows us to directly access an EC2 instance through the AWS Management Console. We don't need to manage key pairs or use an SSH client to connect to our EC2 instance.

My first attempt at accessing my public server resulted in an error because the 'Prajit VPC public server' security group was not authorized for SSH connections, which prevented the EC2 instance from connecting and displayed an error.

I fixed this error by adding a new inbound rule to my public server's (EC2 instance) security group (Prajit VPC public security group) that allows SSH connections or traffic from anywhere.



Failed to connect to your instance  
EC2 Instance Connect is unable to connect to your instance. Ensure your instance network settings are configured correctly for EC2 Instance Connect. For more information, see EC2 Instance Connect Prerequisites at <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-instance-connect-prerequisites.html>.



# Connectivity Between Servers

Ping is a command/tool used to test the connectivity of servers and measure response times (i.e., the performance of the connection). I used ping to test the connectivity between my 'Prajit VPC Public server' and 'Prajit VPC Private server'.

The ping command I ran was 'ping 10.0.1.167' which is the private IPv4 address of my private server (EC2 instance).

The first ping returned no replies from the private server, indicating that the security settings on my private server were blocking inbound and outbound traffic for the ICMP protocol, which is the traffic type for ping messages.

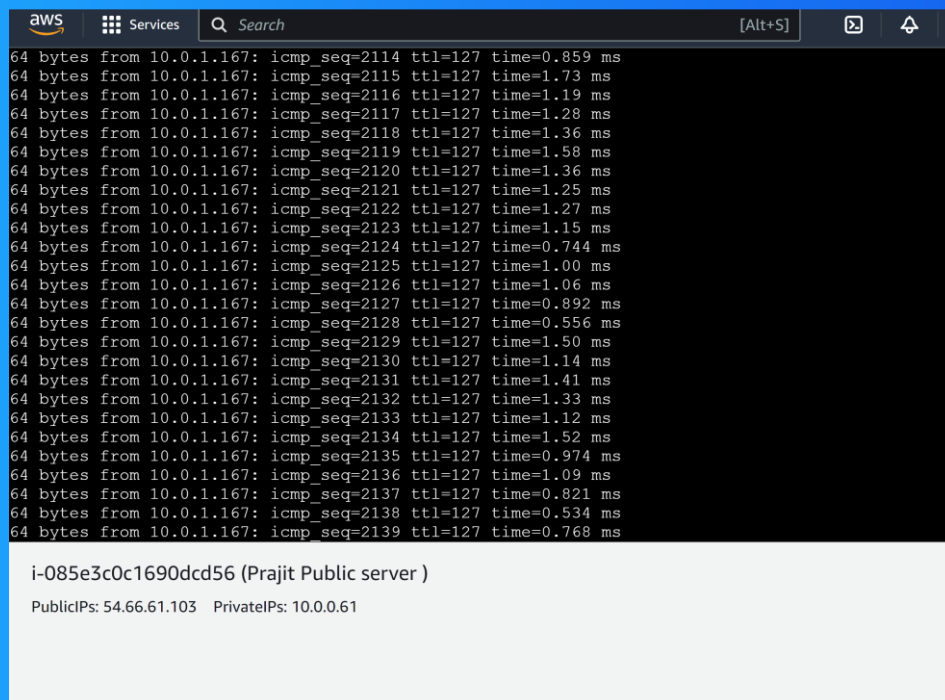
```
#_
~\  ###      Amazon Linux 2023
~~\  #####\
~~\  #####\
~~\  \###|
~~\  \#/      https://aws.amazon.com/linux/amazon-linux-2023
~~\  V~'  '->
~~~
~~~.
~~~\
~~~/_m/'

[ec2-user@ip-10-0-0-61 ~]$ ping 10.0.1.167
PING 10.0.1.167 (10.0.1.167) 56(84) bytes of data.
□
```



# Troubleshooting Connectivity

I troubleshooted this by adding ICMP traffic to both the inbound and outbound rules of my private server's Network ACL and adding ICMP traffic to the inbound rule of my private server's security group.



```
aws Services Search [Alt+S]
64 bytes from 10.0.1.167: icmp_seq=2114 ttl=127 time=0.859 ms
64 bytes from 10.0.1.167: icmp_seq=2115 ttl=127 time=1.73 ms
64 bytes from 10.0.1.167: icmp_seq=2116 ttl=127 time=1.19 ms
64 bytes from 10.0.1.167: icmp_seq=2117 ttl=127 time=1.28 ms
64 bytes from 10.0.1.167: icmp_seq=2118 ttl=127 time=1.36 ms
64 bytes from 10.0.1.167: icmp_seq=2119 ttl=127 time=1.58 ms
64 bytes from 10.0.1.167: icmp_seq=2120 ttl=127 time=1.36 ms
64 bytes from 10.0.1.167: icmp_seq=2121 ttl=127 time=1.25 ms
64 bytes from 10.0.1.167: icmp_seq=2122 ttl=127 time=1.27 ms
64 bytes from 10.0.1.167: icmp_seq=2123 ttl=127 time=1.15 ms
64 bytes from 10.0.1.167: icmp_seq=2124 ttl=127 time=0.744 ms
64 bytes from 10.0.1.167: icmp_seq=2125 ttl=127 time=1.00 ms
64 bytes from 10.0.1.167: icmp_seq=2126 ttl=127 time=1.06 ms
64 bytes from 10.0.1.167: icmp_seq=2127 ttl=127 time=0.892 ms
64 bytes from 10.0.1.167: icmp_seq=2128 ttl=127 time=0.556 ms
64 bytes from 10.0.1.167: icmp_seq=2129 ttl=127 time=1.50 ms
64 bytes from 10.0.1.167: icmp_seq=2130 ttl=127 time=1.14 ms
64 bytes from 10.0.1.167: icmp_seq=2131 ttl=127 time=1.41 ms
64 bytes from 10.0.1.167: icmp_seq=2132 ttl=127 time=1.33 ms
64 bytes from 10.0.1.167: icmp_seq=2133 ttl=127 time=1.12 ms
64 bytes from 10.0.1.167: icmp_seq=2134 ttl=127 time=1.52 ms
64 bytes from 10.0.1.167: icmp_seq=2135 ttl=127 time=0.974 ms
64 bytes from 10.0.1.167: icmp_seq=2136 ttl=127 time=1.09 ms
64 bytes from 10.0.1.167: icmp_seq=2137 ttl=127 time=0.821 ms
64 bytes from 10.0.1.167: icmp_seq=2138 ttl=127 time=0.534 ms
64 bytes from 10.0.1.167: icmp_seq=2139 ttl=127 time=0.768 ms

i-085e3c0c1690dcd56 (Prajit Public server )
PublicIPs: 54.66.61.103 PrivateIPs: 10.0.0.61
```



# Connectivity to the Internet

Curl is a connectivity tool used to test connectivity from one server to another and retrieve data from the target server.

I used curl to test the connectivity between my network's public server and the public internet. This test would only be successful if my internet gateway, network ACLs, security groups, and route table were set up correctly.

## Ping vs Curl

Ping and curl are different because they return different responses to my public server's terminal—ping provides a report on the performance of the connectivity with my private server, while curl returns HTML data from another public server.



# Connectivity to the Internet

I ran the curl command 'https://learn.nextwork.org/projects/aws-host-a-website-on-s3', which returned the HTML content of NextWork's first project guide.

```
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