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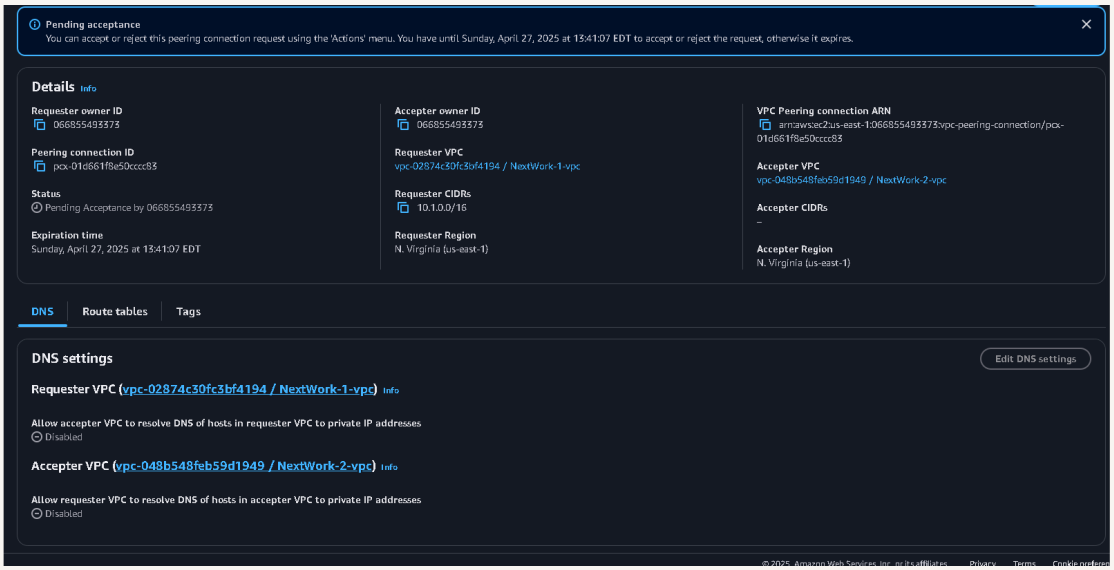
VPC Peering

Antonio C



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Introducing Today's Project!

What is Amazon VPC?

Amazon VPC lets you create a secure, isolated cloud network. It's useful for controlling traffic, IP ranges, and subnets. With VPC peering, it enables private communication between VPCs, ideal for linking environments without using the internet.

How I used Amazon VPC in this project

☁ Set up multiple VPCs. □ Create a VPC peering connection - i.e. get two VPCs to talk to each other! ▮▮ Test VPC peering with connectivity tests.

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

I did not expect the complexity setting up peerless connection

This project took me...

1 hour and a half this project took me

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In the first part of my project...

Step 1 - Set up my VPC

Create two VPCs from scratch! I will use the visual VPC resource map to create your VPCs supa fast 😎⚡

Step 2 - Create a Peering Connection

In this step I will bridge them together with a peering connection.

Step 3 - Update Route Tables

Set up a way for traffic coming from VPC 1 to get to VPC 2. Set up a way for traffic coming from VPC 2 to get to VPC 1.

Step 4 - Launch EC2 Instances

Launch an EC2 instance in each VPC, so we can use them to test your VPC peering connection later.

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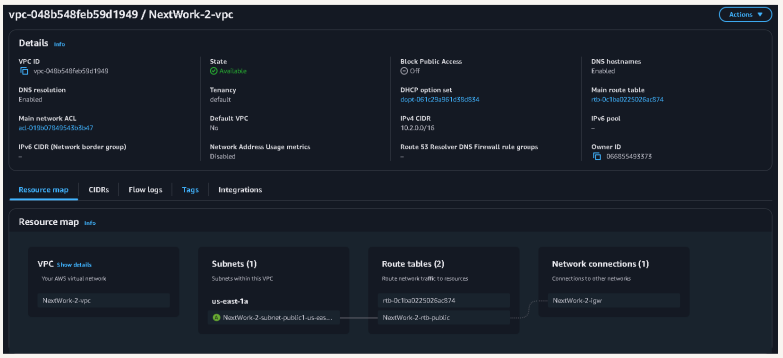
Multi-VPC Architecture

I started my project by launching 2 VPC's. I created one subnet for each VPC.

The CIDR blocks for VPCs 1 and 2 are unique so the IP addresses of their resources don't overlap. Having overlapping IP addresses could cause routing conflicts and connectivity issues!

I also launched 2 EC2 instances

AWS actually manages a key pair for us! We don't need to manage key pairs ourselves. Since we've already learnt how to set up key pairs twice in the last two projects, we don't need to do it again this time.



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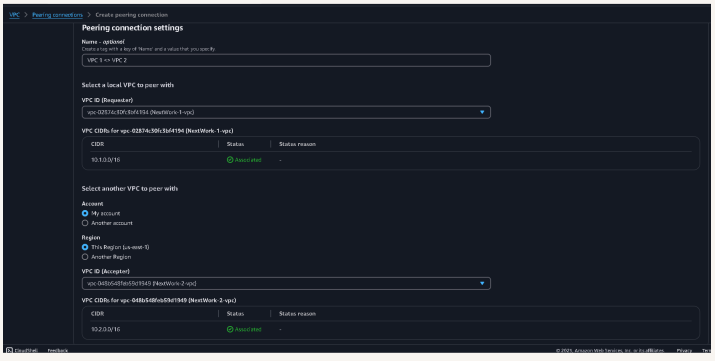
VPC Peering

A peering connection lets VPCs and their resources route traffic between them using their private IP addresses. This means data can now be transferred between VPCs without going through the public internet.

VPCs use peering connections to enable private, direct communication between them, allowing resources in separate VPCs to interact securely without using public internet.

In VPC peering, the Requester is the VPC that initiates the peering connection, while the Accepter is the VPC that receives and must approve the request for the connection to be established. Both sides must configure route tables.



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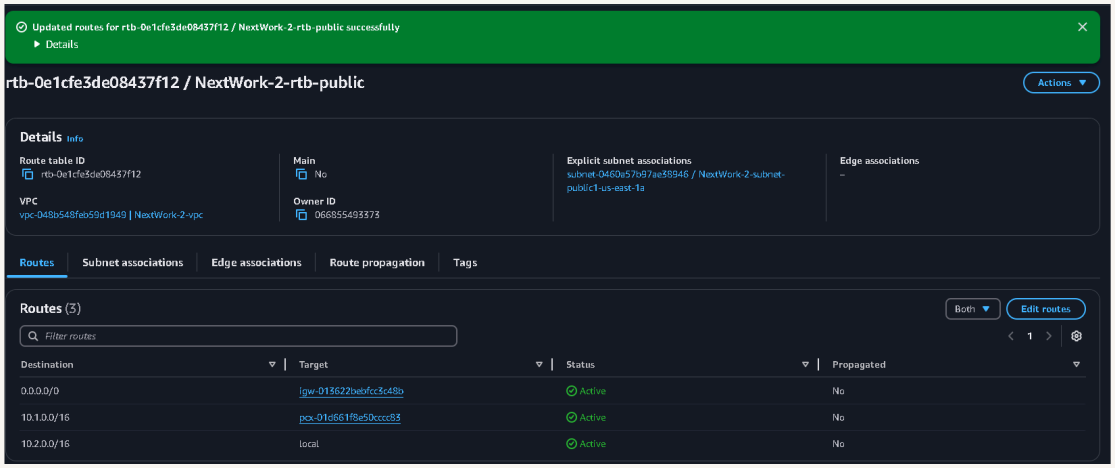
Updating route tables

After accepting a peering connection, my VPCs' route tables need to be updated because you need to set up a route that directs traffic bound for VPC 2 to the peering connection you've set up.

My VPCs' new routes have a destination of 10.2.0.0/16 for vpc1 and 10.1.0.0/16 for vpc2



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In the second part of my project...

Step 5 - Use EC2 Instance Connect

Use EC2 Instance Connect to connect to your first EC2 instance. Fix a connection error!

Step 6 - Connect to EC2 Instance 1

Use EC2 Instance Connect to connect to Instance 1 (one more time)! Fix (another) error.

Step 7 - Test VPC Peering

Get Instance 1 to send test messages to Instance 2. Solve connection errors until Instance 2 is able to send messages back.

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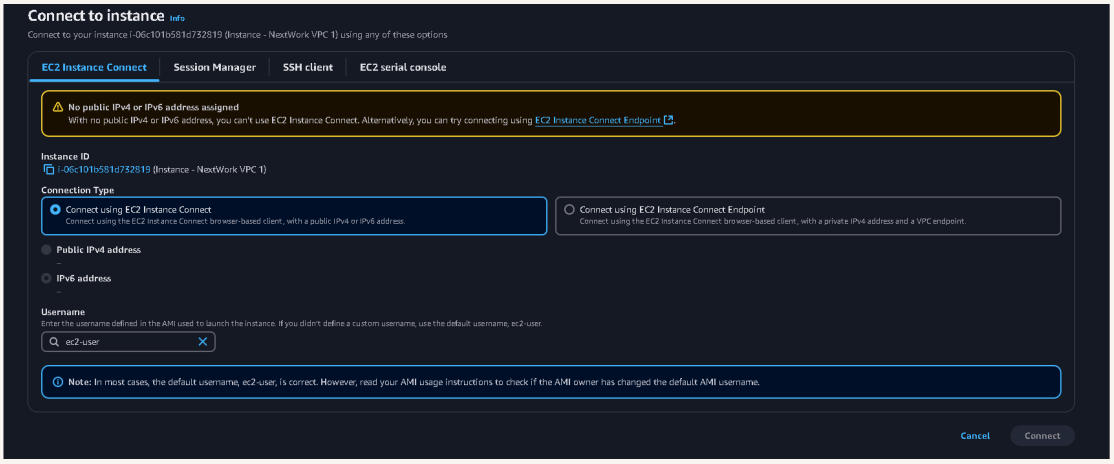
Troubleshooting Instance Connect

Next, I used EC2 Instance Connect to connect to your first EC2 instance

I was stopped from using EC2 Instance Connect as No public IPv4 address assigned. With no public IPv4 address, you can't use EC2 Instance Connect



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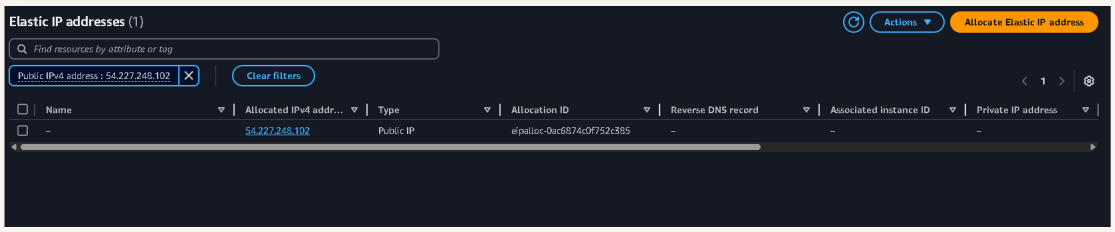
Elastic IP addresses

To resolve this error, I set up Elastic IP addresses. Elastic IP addresses are static IPv4 addresses that get allocated to your AWS account, and is yours to delegate to an EC2 instance.

Associating an Elastic IP address resolved the error to assign an instance a public IPv4 address after launching it!



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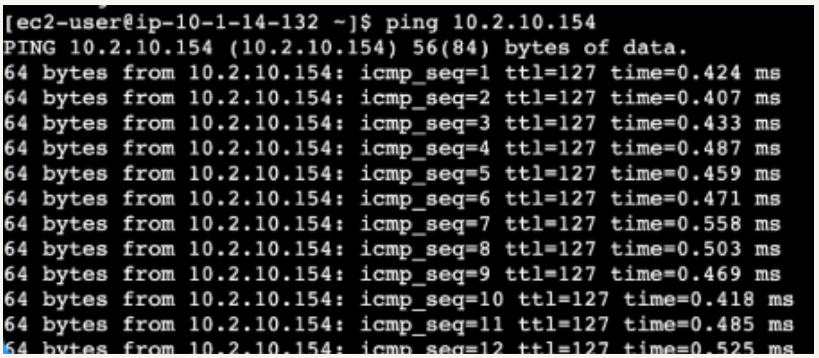
Troubleshooting ping issues

What was the command you ran to test VPC peering ping

Usually, when you ping another computer successfully, you should see several replies back instantly. Each reply tells you how long it took for the message to go to the Instance - NextWork VPC 2 and come back.

When you set a rule for All ICMP - IPv4, you're allowing all types of ICMP messages for IPv4 addresses. This covers a wide range of operational messages that are essential for diagnosing network connectivity issues, ping requests and responses



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