



VPC Peering



Ivan Delgadillo Fernandez

Accept VPC peering connection request [Info](#) ×

Are you sure you want to accept this VPC peering connection request? (pcx-06088dfd229d43f9c / VPC 1 <> VPC 2)

Requester VPC vpc-0eaac78d4833772b1 / NextWork-1-vpc	Accepter VPC vpc-00815946ea1e81291 / NextWork-2-vpc	Requester CIDRs 10.1.0.0/16
Accepter CIDRs -	Requester Region N. Virginia (us-east-1)	Accepter Region N. Virginia (us-east-1)
Requester owner ID 600627346491 (This account)	Accepter owner ID 600627346491 (This account)	

Cancel **Accept request**



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Introducing Today's Project!

What is Amazon VPC?

you can launch AWS resources in a logically isolated virtual network that you've defined

How I used Amazon VPC in this project

I used peering 2 VPC's with instances using private IP

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

I didn't expect fix the default security groups

This project took me...

45 minutes



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In the first part of my project...

Step 1 - Set up my VPC

I will create a VPC from scratch using VPC resource map

Step 2 - Create a Peering Connection

A VPC peering connection is a networking connection between two VPCs that enables routing using each VPC's private IP addresses as if they were in the same network.

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

I will launch an EC2 instance in each VPC, so I can use them to test your VPC peering connection later.



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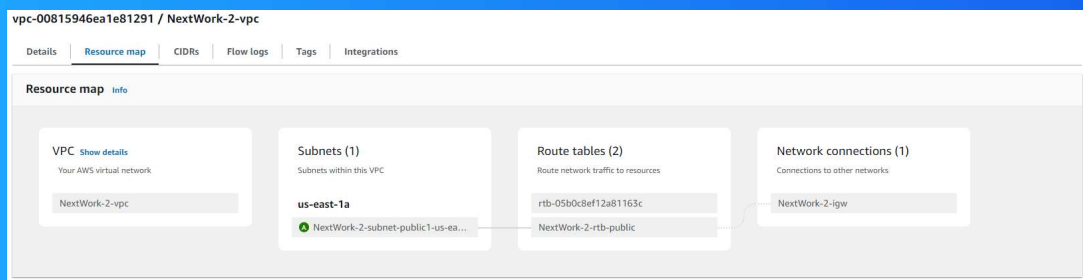
Multi-VPC Architecture

I did launch a 2 VPCs with a subnet public using a resource map option

Each VPC must have a unique IPv4 CIDR block 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

I didn't set up key pairs for these EC2 instances as EC2 Instance Connect, AWS actually manages a key pair for us!





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VPC Peering

A VPC peering connection is a direct connection between two VPCs! A peering connection lets VPCs and their resources route traffic between them using their private IP addresses

Transfer data VPCs without going through the public internet

In VPC peering, the Acceptor is the VPC that receives a peering connection request! The Acceptor can either accept or decline the invitation. This means the peering connection isn't actually made until the other VPC also agrees to it!

Peering connection settings

Name - optional
Create a tag with a key of 'Name' and a value that you specify.
VPC 1 ↔ VPC 2

Select a local VPC to peer with

VPC ID (Requested)
vpc-0eac78d4833772b1 (NextWork-1-vpc)

VPC CIDRs for vpc-0eac78d4833772b1 (NextWork-1-vpc)

CIDR	Status	Status reason
10.1.0.0/16	Associated	-

Select another VPC to peer with

Account
☒ My account
☐ Another account

Region
☒ This Region (us-east-1)
☐ Another Region

VPC ID (Accepted)
vpc-00815946ae1a61291 (NextWork-2-vpc)

VPC CIDRs for vpc-00815946ae1a61291 (NextWork-2-vpc)

CIDR	Status	Status reason
10.2.0.0/16	Associated	-



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Updating route tables

Even if your peering connection has been accepted, traffic in VPC 1 won't know how to get to resources in VPC 2 without a route in your route table! You need to set up a route that directs traffic bound for VPC 2 to the peering connection you've set

My VPC's new routes have a destination of 10.X.0.0/16, the routes target was VPC peering.

rtb-05bd8fd5a9f71d2 / NextWork-2-rtb-public Actions ▾

Details [Info](#)

Route table ID rtb-05bd8fd5a9f71d2	Main No	Explicit subnet associations subnet-00a1f188bd1f70ab4 / NextWork-2-subnet-public1-us-east-1a	Edge associations -
VPC vpc-00815946ea1e81291 NextWork-2-vpc	Owner ID 600627346491		

[Routes](#) | [Subnet associations](#) | [Edge associations](#) | [Route propagation](#) | [Tags](#)

Routes (3) Both ▾ Edit routes

Destination ▾	Target ▾	Status ▾	Propagated ▾
0.0.0.0/0	igw-07d058193becd7273	Active	No
10.1.0.0/16	pcx-06088dfd229d43f9c	Active	No
10.2.0.0/16	local	Active	No



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In the second part of my project...

Step 5 - Use EC2 Instance Connect

I'm trying connect to instance EC2 using Instance-connect

Step 6 - Connect to EC2 Instance 1

I will try connect to Instance using a IP public

Step 7 - Test VPC Peering

Instance 1 will send test messages to Instance 2.



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Troubleshooting Instance Connect

I used EC2 instance connect to test VPC peering

I was stopped from using EC2 instance Connect without IP public

The screenshot shows the AWS Management Console interface for the EC2 Instance Connect page. At the top, there are tabs for 'EC2 Instance Connect', 'Session Manager', 'SSH client', and 'EC2 serial console'. Below the tabs, there are two yellow warning boxes. The first box states: 'EC2 Instance Connect service IP addresses are not authorized. Port 22 (SSH) is authorized in your security group. However, to use EC2 Instance Connect, it is recommended to also authorize port 22 for the EC2 Instance Connect service IP addresses in your Region: 18.206.107.24/29. Learn more.' The second box states: 'No public IPv4 address assigned. With no public IPv4 address, you can't use EC2 Instance Connect. Alternatively, you can try connecting using EC2 Instance Connect Endpoint.' Below the warnings, the 'Instance ID' is listed as 'i-0a8493e7fb3ba88e9 (Instance - NextWork VPC 1)'. Under 'Connection Type', there are two options: 'Connect using EC2 Instance Connect' (selected) and 'Connect using EC2 Instance Connect Endpoint'. The 'Public IP address' field is empty. The 'Username' field is set to 'ec2-user'. A note at the bottom states: 'Note: In most cases, the default username, ec2-user, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username.'



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Elastic IP addresses

To resolve this error, I set up Elastic IP addresses. Elastic IP addresses a great way to assign an instance a public IPv4 address after launching it!

Associating an Elastic IP address resolved the error because the Instance now have a IP public to use instance connect

The screenshot shows the AWS console interface for selecting a public IPv4 address pool. The interface is titled "Public IPv4 address pool" and features several radio button options. The first option, "Amazon's pool of IPv4 addresses", is selected. Below this, there are three other options, each with a "Learn more" link. A "Network border group" dropdown menu is set to "us-east-1". Below this, there is a section for "Global static IP addresses" with a "Create accelerator" button. A "Tags - optional" section follows, explaining that tags are used for resource identification and cost tracking. At the bottom, there is an "Add new tag" button and a note about the 50-tag limit. The interface concludes with "Cancel" and "Allocate" buttons.

Public IPv4 address pool

- ☒ Amazon's pool of IPv4 addresses
- ☐ Public IPv4 address that you bring to your AWS account with BYOIP. (option disabled because no pools found) [Learn more](#)
- ☐ Customer-owned pool of IPv4 addresses created from your on-premises network for use with an Outpost. (option disabled because no customer owned pools found) [Learn more](#)
- ☐ Allocate using an IPv4 IPAM pool. (option disabled because no public IPv4 IPAM pools with AWS service as EC2 were found)

Network border group [Info](#)

us-east-1

Global static IP addresses

AWS Global Accelerator can provide global static IP addresses that are announced worldwide using anycast from AWS edge locations. This can help improve the availability and latency for your user traffic by using the Amazon global network. [Learn more](#)

Create accelerator

Tags - optional

A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

No tags associated with the resource.

Add new tag

You can add up to 50 more tag

Cancel Allocate



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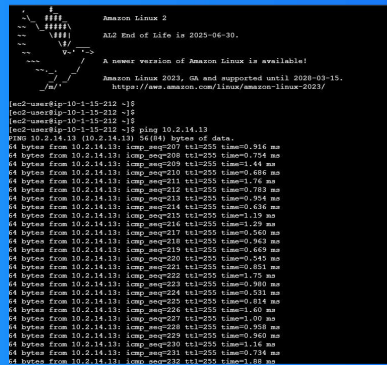
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Troubleshooting ping issues

To test VPC peering I ran the command ping 10.X.X.X.

A successful ping test would validate my VPC peering connection because the instance 2 in VPC-2 are respond the ICMP.

I had update my second EC2 Instance's security group because don't allow the ICMP connection, I added a new rule that allow ICMP.



```
Amazon Linux 2
AL2 End of Life is 2025-06-30.

A newer version of Amazon Linux is available!
Amazon Linux 2023, GA and supported until 2028-03-15.
https://aws.amazon.com/linux/amazon-linux-2023/

ec2-user@ip-10-1-15-212 ~$
ec2-user@ip-10-1-15-212 ~$
ec2-user@ip-10-1-15-212 ~$
ec2-user@ip-10-1-15-212 ~$ ping 10.2.14.13
PING 10.2.14.13 (10.2.14.13) 56(84) bytes of data:
64 bytes from 10.2.14.13: icmp_seq=201 ttl=255 time=0.516 ms
64 bytes from 10.2.14.13: icmp_seq=202 ttl=255 time=0.754 ms
64 bytes from 10.2.14.13: icmp_seq=203 ttl=255 time=1.44 ms
64 bytes from 10.2.14.13: icmp_seq=210 ttl=255 time=0.686 ms
64 bytes from 10.2.14.13: icmp_seq=211 ttl=255 time=0.73 ms
64 bytes from 10.2.14.13: icmp_seq=212 ttl=255 time=0.783 ms
64 bytes from 10.2.14.13: icmp_seq=213 ttl=255 time=0.954 ms
64 bytes from 10.2.14.13: icmp_seq=214 ttl=255 time=0.636 ms
64 bytes from 10.2.14.13: icmp_seq=215 ttl=255 time=1.12 ms
64 bytes from 10.2.14.13: icmp_seq=216 ttl=255 time=1.29 ms
64 bytes from 10.2.14.13: icmp_seq=217 ttl=255 time=0.503 ms
64 bytes from 10.2.14.13: icmp_seq=218 ttl=255 time=0.963 ms
64 bytes from 10.2.14.13: icmp_seq=219 ttl=255 time=0.489 ms
64 bytes from 10.2.14.13: icmp_seq=220 ttl=255 time=0.545 ms
64 bytes from 10.2.14.13: icmp_seq=221 ttl=255 time=0.851 ms
64 bytes from 10.2.14.13: icmp_seq=222 ttl=255 time=1.78 ms
64 bytes from 10.2.14.13: icmp_seq=223 ttl=255 time=0.980 ms
64 bytes from 10.2.14.13: icmp_seq=224 ttl=255 time=0.533 ms
64 bytes from 10.2.14.13: icmp_seq=225 ttl=255 time=0.814 ms
64 bytes from 10.2.14.13: icmp_seq=226 ttl=255 time=1.40 ms
64 bytes from 10.2.14.13: icmp_seq=227 ttl=255 time=1.00 ms
64 bytes from 10.2.14.13: icmp_seq=228 ttl=255 time=0.968 ms
64 bytes from 10.2.14.13: icmp_seq=229 ttl=255 time=0.960 ms
64 bytes from 10.2.14.13: icmp_seq=230 ttl=255 time=1.16 ms
64 bytes from 10.2.14.13: icmp_seq=231 ttl=255 time=0.734 ms
64 bytes from 10.2.14.13: icmp_seq=232 ttl=255 time=1.02 ms
```



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