

Capstone Project 5: Configure Cloud Peering

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Step 1:

a. How much does peering cost?

- AWS VPC Peering itself is free — you are not charged for creating or maintaining the peering connection.
- However, data transfer fees are applied when traffic moves between peered VPCs.

b. Can you peer with a virtual network in another account?

- Yes, you can peer VPCs across different AWS accounts, as long as they are in the same region or configured correctly for inter-region peering.

c. Is peering transitive?

- No, VPC peering in AWS is not transitive.
- If VPC A is peered with VPC B, and VPC B is peered with VPC C, A cannot automatically communicate with C.

d. Where is peering configured in the cloud platform?

- In the AWS Management Console, under VPC Dashboard > Peering Connections.

e. What resources must already exist before peering can be established?

- You must have two VPCs already created with non-overlapping CIDR blocks.

f. What are the basic steps to create the peering connection?

1. Go to VPC Dashboard.
2. Select Peering Connections and Create Peering Connection.
3. Choose a requester VPC and accepter VPC (can be in the same or different account).
4. Accept the peering request on the other side.
5. Update the route tables in each VPC to allow traffic to flow between them.

g. What significant limitations exist on the peering service for this platform?

- No transitive peering.
- No overlapping CIDR blocks allowed.
- Cannot use VPC peering to connect to VPCs in unsupported regions.
- Cannot use VPC peering across AWS China regions and AWS GovCloud regions.

Step 2:

Go to the VPC Dashboard.

The screenshot shows the AWS VPC Dashboard for the us-east-2 region. The left sidebar includes sections for Virtual private cloud, Security, and PrivateLink and Lattice. The main content area displays 'Resources by Region' with counts for VPCs, Subnets, Route Tables, Internet Gateways, Egress-only Internet Gateways, DHCP option sets, and more. It also features 'Create VPC' and 'Launch EC2 Instances' buttons. On the right, there are sections for Service Health, Settings, Additional Information, and AWS Network Manager, along with links for Refresh Resources, Block Public Access, Zones, Console Experiments, VPC Documentation, All VPC Resources, Forums, Report an Issue, and AWS Network Manager details.

Create VPC **Launch EC2 Instances**

Note: Your Instances will launch in the United States region.

Resources by Region

You are using the following Amazon VPC resources

VPCs United States 4 **NAT Gateways** United States 0

▶ See all regions ▶ See all regions

Subnets United States 0 **VPC Peering Connections** United States 0

▶ See all regions ▶ See all regions

Route Tables United States 8 **Network ACLs** United States 4

▶ See all regions ▶ See all regions

Internet Gateways United States 4 **Security Groups** United States 8

▶ See all regions ▶ See all regions

Egress-only Internet Gateways United States 0 **Customer Gateways** United States 0

▶ See all regions ▶ See all regions

DHCP option sets United States 1 **Virtual Private Gateways** United States 0

▶ See all regions ▶ See all regions

Service Health

[View complete service health details](#)

Settings

[Block Public Access](#)
[Zones](#)
[Console Experiments](#)

Additional Information

[VPC Documentation](#)
[All VPC Resources](#)
[Forums](#)
[Report an Issue](#)

AWS Network Manager

AWS Network Manager provides tools and features to help you manage and monitor your network on AWS. Network Manager makes it

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Create vpc's 1 and 2

The screenshot shows two separate instances of the AWS VPC 'Create VPC' configuration page.

Top Instance (VPC and more):

- VPC settings:**
 - Resources to create:** VPC and more (selected)
 - Name tag auto-generation:** Auto-generate (selected), Name tag: project
 - IPv4 CIDR block:** CIDR: 10.0.0.0/16, IPs: 65,536
 - IPv6 CIDR block:** No IPv6 CIDR block selected
 - Tenancy:** Default
 - Number of Availability Zones (AZs):** Not specified
- Preview:** Shows a VPC named 'project-vpc' with four subnets: us-east-2a (public1, private1), us-east-2b (public2, private2). Each subnet is associated with a route table 'project-r'.

Bottom Instance (VPC only):

- VPC settings:**
 - Resources to create:** VPC only (selected)
 - Name tag - optional:** Creates a tag with a key of 'Name' and a value that you specify. Value: 'vpc-1'
 - IPv4 CIDR block:** CIDR: 192.168.0.0/24
 - IPv6 CIDR block:** No IPv6 CIDR block selected
 - Tenancy:** Default

VPC settings

Resources to create [Info](#)
Create only the VPC resource or the VPC and other networking resources.

VPC only VPC and more

Name tag - optional
Creates a tag with a key of 'Name' and a value that you specify.
vpc-02

IPv4 CIDR block [Info](#)
 IPv4 CIDR manual input IPAM-allocated IPv4 CIDR block

IPv4 CIDR
192.168.1.0/24
CIDR block size must be between /16 and /28.

IPv6 CIDR block [Info](#)
 No IPv6 CIDR block IPAM-allocated IPv6 CIDR block Amazon-provided IPv6 CIDR block IPv6 CIDR owned by me

Tenancy [Info](#)
Default

Tags

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.

CloudShell Feedback

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Create peering connection

Name - optional
Create a tag with a key of 'Name' and a value that you specify.
pc01

Select a local VPC to peer with

VPC ID (Requester)
vpc-0cf630db8cd4c0785 (vpc-1)

VPC CIDRs for vpc-0cf630db8cd4c0785 (vpc-1)

CIDR	Status	Status reason
192.168.0.0/24	Associated	-

Select another VPC to peer with

Account
 My account Another account

Region
 This Region (us-east-2) Another Region

VPC ID (Acceptor)
vpc-0c0c6eff45c73bccb (vpc-02)

VPC CIDRs for vpc-0c0c6eff45c73bccb (vpc-02)

CIDR	Status	Status reason
192.168.1.0/24	Associated	-

CloudShell Feedback

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Screenshot of the AWS VPC console showing the Peering connections page. The sidebar shows 'Virtual private cloud' with 'Peering connections' selected. The main area displays a table with one row: 'No peering connection found'. A message below says 'Select a peering connection above'.

Screenshot of the AWS VPC console showing a requested peering connection. The sidebar shows 'Virtual private cloud' with 'Peering connections' selected. The main area shows a table with one row: 'pcx-0c80ed83bdeaba8a5 / pc01 has been requested.' The status is 'Pending acceptance'. A context menu is open over the row, showing options: 'Accept request', 'Reject request', 'Edit DNS settings', 'Manage tags', and 'Delete peering connection'. Below the table, detailed information is shown for both requester and accepter.

Name	Peering connection ID	Status	Requester VPC
pc01	pcx-0c80ed83bdeaba8a5	Pending acceptance	vpc-0cf630d8cd4c0785

Requester owner ID	Acceptor owner ID	VPC Peering connection ARN
523224772484	523224772484	arn:aws:ec2:us-east-2:523224772484:vpc-peering-connection/pcx-0c80ed83bdeaba8a5
Peering connection ID	Requester VPC	Acceptor VPC
pcx-0c80ed83bdeaba8a5	vpc-0cf630d8cd4c0785 / vpc-1	vpc-0c06eff45c73bccb / vpc-0
Status	Requester CIDRs	Acceptor CIDRs
Pending Acceptance by 523224772484	192.168.0.0/24	-
Expiration time	Requester Region	Acceptor Region
Sunday, May 4, 2025 at 18:26:42 EDT	Ohio (us-east-2)	Ohio (us-east-2)

Edit routes

Destination	Target	Status	Propagated
192.168.0.0/24	local	Active	No
192.168.1.0/24	Peering Connection	In Progress	No

[Add route](#) [Remove](#)

[Cancel](#) [Preview](#) [Save changes](#)

Edit routes

Destination	Target	Status	Propagated
192.168.1.0/24	local	Active	No
192.168.0.0/24	Peering Connection	In Progress	No

[Add route](#) [Remove](#)

[Cancel](#) [Preview](#) [Save changes](#)

Show active peer connection

The screenshot shows the AWS VPC Peering Connections console. On the left, there's a navigation sidebar with sections like 'VPC dashboard', 'Virtual private cloud', 'Security', 'PrivateLink and Lattice', and links for 'CloudShell' and 'Feedback'. The main area is titled 'Peering connections (1/1)'. A table lists one peering connection:

Name	Peering connection ID	Status	Requester VPC	Acceptor VPC
pc01	pcx-0c80ed83bdeaba8a5	Active	vpc-0cf630db8cd4c0785 / vpc-1	vpc-0c0c6eff45c73bc

Below the table, a detailed view for 'pcx-0c80ed83bdeaba8a5 / pc01' is shown. It has tabs for 'Details', 'DNS', 'Route tables', and 'Tags'. The 'Details' tab displays the following information:

Requester owner ID	Acceptor owner ID	VPC Peering connection ARN
523224772484	523224772484	arn:aws:ec2:us-east-2:523224772484:vpc-peering-connection/pcx-0c80ed83bdeaba8a5
Peering connection ID	Requester VPC	Acceptor VPC
pcx-0c80ed83bdeaba8a5	vpc-0cf630db8cd4c0785 / vpc-1	vpc-0c0c6eff45c73bc / vpc-0
Status	Requester CIDs	Acceptor CIDs
Active	192.168.0.0/24	

At the bottom right, there are links for 'Privacy', 'Terms', and 'Cookie preferences'.

Step 4:
Create vpc's 1 and 2

Screenshot of the AWS VPC CreateVpc console showing the configuration for the first VPC:

VPC settings

Resources to create: VPC only

Name tag - optional: VPC-Overlap-1

IPv4 CIDR block: 192.168.0.0/24

IPv6 CIDR block: No IPv6 CIDR block selected

Tenancy: Default

Screenshot of the AWS VPC CreateVpc console showing the configuration for the second VPC:

VPC settings

Resources to create: VPC only

Name tag - optional: VPC-Overlap-2

IPv4 CIDR block: 192.168.0.128/24

IPv6 CIDR block: No IPv6 CIDR block selected

Tenancy: Default

Tags: 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.

When trying to set up the second vpc it says “must be valid ipv4”

1. Suppose you wanted to peer three virtual networks in a mesh network. List three /24 CIDR blocks that would work for this scenario.

Three non-overlapping CIDR blocks that would work:

- 192.168.10.0/24
- 192.168.20.0/24
- 192.168.30.0/24