

## Vpc peering

**VPC Peering** allows you to connect two Virtual Private Clouds (VPCs) so that resources in each VPC can communicate with each other using private IP addresses. It's commonly used in AWS but also applicable to other cloud providers with similar functionality.

### What is VPC Peering?

VPC Peering connects two VPCs (either in the same AWS account or different accounts, and sometimes in different regions) to route traffic between them privately without using public internet.

The screenshot shows the AWS VPC console interface. At the top, there are two tabs: "Your VPCs" and "Subnets".

**Your VPCs:**

Name	VPC ID	State	Block Public...	IPv4 CIDR	IPv6 CIDR
-	ypc-0125c2b61f04b333c	Available	Off	172.31.0.0/16	-
europe_stockholm	ypc-072d4802c30e2e176	Available	Off	10.0.0.0/16	-

**Subnets:**

Name	Subnet ID	State	VPC	Block Public...	IPv4 CIDR
-	subnet-0f2e68a0dfbf61c	Available	ypc-0125c2b61f04b333c	Off	172.31.0.0/20
-	subnet-0a7751d99d72ae09e	Available	ypc-0125c2b61f04b333c	Off	172.31.32.0/2
-	subnet-0bb8b545155e6d3de	Available	ypc-0125c2b61f04b333c	Off	172.31.16.0/2
europe_subnet	subnet-0ff1bc0d28c17478a	Available	ypc-072d4802c30e2e176   europe...	Off	10.0.0.0/24

**Details for subnet-0ff1bc0d28c17478a / europe\_subnet:**

Details	Flow logs	Route table	Network ACL	CIDR reservations	Sharing	Tags
<b>Details</b>						
Subnet ID subnet-0ff1bc0d28c17478a	Subnet ARN arnaws:ec2:eu-north-1:947309778595:subnet/subnet-0ff1bc0d28c17478a	State Available	Block Public Access Off			
IPv4 CIDR 10.0.0.0/24	Available IPv4 addresses 250	IPv6 CIDR -	IPv6 CIDR association ID -			
Availability Zone eu-n1az1(eu-north-1a)	VPC vpc-072d4802c30e2e176	Route table rtb-059af4861acd51fe6ee   myvpc-rt				

Screenshot of the AWS Management Console showing the VPC Internet Gateways and Route Tables sections.

### Internet Gateways (2) Info

Name	Internet gateway ID	State	VPC ID	Owner
-	igw-09f8f82ebdd2156f	Attached	vpc-0125c2b61f04b333c	947309778595
epint-gateway	igw-0d1fec7450c604ec0	Attached	vpc-072d4802c30e2e176   europe_stoc...	947309778595

### Select an internet gateway above

Actions Create internet gateway

RouteTables (1/3) Info

Name	Route table ID	Explicit subnet assoc...	Edge associations	Main	VPC
-	rtb-054a52d5a39c137aa	-	-	Yes	vpc-0125c2b61f04b333c
<input checked="" type="checkbox"/> myep-rt	rtb-09af4861acd31e6ee	subnet-0ff1bc0d28c1747ba...	-	No	vpc-072d4802c30e2e176   eu...
-	rtb-0b27a0b6a0ad097ea	-	-	Yes	vpc-072d4802c30e2e176   eu...

Last updated less than a minute ago

### rtb-09af4861acd31e6ee / myep-rt

Details Routes Subnet associations Edge associations Route propagation Tags

**Details**

Route table ID rtb-09af4861acd31e6ee	Main <input type="checkbox"/> No	Explicit subnet associations subnet-0ff1bc0d28c1747ba / europe_subnet
VPC vpc-072d4802c30e2e176   europe_stoc...	Owner ID 947309778595	

Snipping Tool Screenshot copied to clipboard Automatically saved to screenshots folder. Mark-up and share

Screenshot of the AWS Management Console showing the RouteTables page for the eu-north-1 region.

**Route tables (1/3) Info**

Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC
-	rtb-054a52d5a39c137aa	-	-	Yes	vpc-0125c2b61f04b333c
<b>myep-rt</b>	<b>rtb-09af4861acd31e6ee</b>	<b>subnet-0ff1bc0d28c1747...</b>	-	No	<b>vpc-072d4802c30e2e176   eu</b>
-	rtb-0b27a0b6a0ad097ea	-	-	Yes	vpc-072d4802c30e2e176   eu

**rtb-09af4861acd31e6ee / myep-rt**

**Routes (3)**

Destination	Target	Status	Propagated	Route Origin
0.0.0.0/0	igw-0d1fec7450c604ec0	Active	No	Create Route
10.0.0.0/16	local	Active	No	Create Route Table
11.0.0.0/16	pcc-0fdc15e71390bbfb	Active	No	Create Route

**Subnet associations**

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
europe_subnet	subnet-0ff1bc0d28c17478a	10.0.0.0/24	-

Screenshot of the AWS VPC Console showing the Security Groups page and the Route Tables page.

### Security Groups (1/18) - Details for sg-01835640d66613a49 - ep-sgp

Name	Security group ID	Security group name	VPC ID	Description
-	sg-046936e745d444a45	launch-wizard-6	vpc-0125c2b61f04b333c	launch-wizard-1
-	sg-03f8a84f61ff72938	launch-wizard-11	vpc-0125c2b61f04b333c	launch-wizard-11
<b>✓</b>	<b>sg-01835640d66613a49</b>	<b>ep-sgp</b>	<b>vpc-072d4802c30e2e176</b>	<b>ep-sgp</b>
-	sg-08594adb19fd50b4	launch-wizard-3	vpc-0125c2b61f04b333c	launch-wizard-3
-	sg-01e2273d8a2cd949	launch-wizard-13	vpc-0125c2b61f04b333c	launch-wizard-13
-	sg-01835640d66613a49	launch-wizard-14	vpc-072d4802c30e2e176	launch-wizard-14

### Edit routes - rtb-09af4861acd31e6ee

Destination	Target	Status	Propagated	Route Origin
10.0.0.0/16	local	Active	No	CreateRouteTable
11.0.0.0/16	Peering Connection	Active	No	CreateRoute
0.0.0.0/0	Internet Gateway	Active	No	CreateRoute

The screenshot shows two AWS Management Console windows for the VPC service.

**Top Window: Your VPCs**

This window displays a list of existing VPCs. There are two entries:

Name	VPC ID	State	Block Public...	IPv4 CIDR	IPv6 CIDR
-	ypc-03a5c6b3c96b5006f	Available	Off	172.31.0.0/16	-
ireland	ypc-0ae4550bc15e2bec	Available	Off	11.0.0.0/16	-

**Bottom Window: Subnets**

This window displays a list of subnets under the VPC "ireland". There are four subnets listed:

Name	Subnet ID	State	VPC	Block Public...	IPv4 CIDR
iresub	subnet-0be679db6849aee06	Available	ypc-0ae4550bc15e2bec   ireland	Off	11.0.0.0/24
-	subnet-0bf9402045a1df025	Available	ypc-03a5c6b3c96b5006f	Off	172.31.32.0/2
-	subnet-0a5038772ad3113f98	Available	ypc-03a5c6b3c96b5006f	Off	172.31.16.0/2
-	subnet-03e0b7e17e5464d50	Available	ypc-03a5c6b3c96b5006f	Off	172.31.0.0/20

A context menu is open over the first subnet ("iresub"), showing options like "Edit", "Delete", "Associate route table", "Associate CIDR block", "Associate security group", and "Associate network ACL". A tooltip indicates "Screenshot copied to clipboard".

AWS Management Console - eu-west-1.console.aws.amazon.com/vpcconsole/home/?region=eu-west-1#igws:

Account ID: 9473-0977-8595 | Europe (Ireland) | Balaji%20R

VPC > Internet gateways

Internet gateways (2) Info

Name	Internet gateway ID	Status	VPC ID	Owner
ire-igw	igw-06c4b7ca5478563f1	Attached	vpc-0ae4550bcb15e2bec   ireland	947309778595
-	igw-09002e525848ae2fa	Attached	vpc-03a5c6b3c96b5006f	947309778595

Select an internet gateway above

Actions Create internet gateway

aws Search [Alt+S]

AWS Management Console - eu-west-1.console.aws.amazon.com/vpcconsole/home/?region=eu-west-1#EditRoutes:RouteTableId=rtb-0d85f2a85d41ec741

Account ID: 9473-0977-8595 | Europe (Ireland) | Balaji%20R

VPC > Route tables > rtb-0d85f2a85d41ec741 > Edit routes

Edit routes

Destination	Target	Status	Propagated	Route Origin
11.0.0.0/16	local	Active	No	CreateRouteTable
10.0.0.0/16	Peering Connection	Active	No	CreateRoute
0.0.0.0/0	Internet Gateway	Active	No	CreateRoute

Add route Cancel Preview Save changes

aws Search [Alt+S]

AWS Management Console - eu-west-1.console.aws.amazon.com/vpcconsole/home/?region=eu-west-1#SecurityGroups:

Account ID: 9473-0977-8595 | Europe (Ireland) | Balaji%20R

VPC > Security Groups

Security Groups (1/3) Info

Name	Security group ID	Security group name	VPC ID	Description
-	sg-06bcf164505edec7d	default	vpc-03a5c6b3c96b5006f	default VPC security group
-	sg-083982b4572c2ca57	default	vpc-0ae4550bcb15e2bec	default VPC security group
✓	sg-0b683c5952634b558	myire-sgp	vpc-0ae4550bcb15e2bec	myire-sgp

sg-0b683c5952634b558 - myire-sgp

Details Inbound rules Outbound rules Sharing - new VPC associations - new Tags

Details

aws Search [Alt+S]

eu-north-1.console.aws.amazon.com/ec2/home?region=eu-north-1#instances:

Instances (1/1) Info

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
myepstock	i-09fd8e50e24ab4cb1	Running	t3.micro	5/3 checks passed	View alarms +	eu-north-1a	-

i-09fd8e50e24ab4cb1 (myepstock)

Details Status and alarms Monitoring Security Networking Storage Tags

▼ Instance summary Info

eu-west-1.console.aws.amazon.com/ec2/home?region=eu-west-1#instances:

Instances (1/1) Info

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
ep-ireland	i-0a255bdf7dd7278f0	Running	t3.micro	5/3 checks passed	View alarms +	eu-west-1a	-

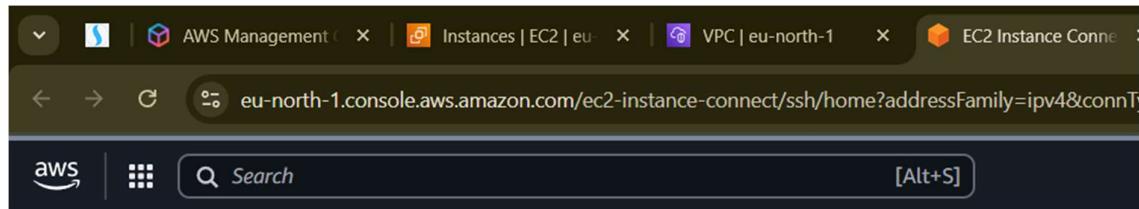
i-0a255bdf7dd7278f0 (ep-ireland)

Details Status and alarms Monitoring Security Networking Storage Tags

▼ Instance summary Info

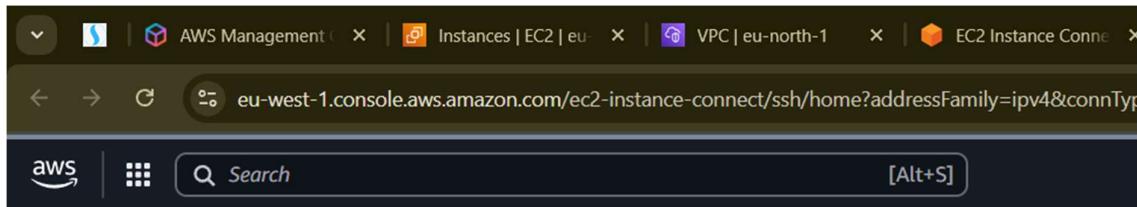
Instance ID: i-0a255bdf7dd7278f0  
Public IPv4 address: 3.255.245.37 | open address ↗  
IPv6 address: Instance state: Running

Private IPv4: 11.0.0.2 | Snipping Tool  
Public DNS: Screenshot copied to clipboard



### i-09fd8e50e24ab4cb1 (myepstock)

Public IPs: 16.170.227.45 Private IPs: 10.0.0.24



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

[ec2-user@ip-11-0-0-214 ~]$ ping 16.170.227.45
PING 16.170.227.45 (16.170.227.45) 56(84) bytes of data.
64 bytes from 16.170.227.45: icmp_seq=1 ttl=121 time=38.9 ms
64 bytes from 16.170.227.45: icmp_seq=2 ttl=121 time=38.9 ms
64 bytes from 16.170.227.45: icmp_seq=3 ttl=121 time=38.9 ms
64 bytes from 16.170.227.45: icmp_seq=4 ttl=121 time=38.9 ms
64 bytes from 16.170.227.45: icmp_seq=5 ttl=121 time=38.9 ms
64 bytes from 16.170.227.45: icmp_seq=6 ttl=121 time=38.8 ms
64 bytes from 16.170.227.45: icmp_seq=7 ttl=121 time=38.9 ms
64 bytes from 16.170.227.45: icmp_seq=8 ttl=121 time=38.8 ms
64 bytes from 16.170.227.45: icmp_seq=9 ttl=121 time=38.9 ms
^C
--- 16.170.227.45 ping statistics ---
9 packets transmitted, 9 received, 0% packet loss, time 8013ms
rtt min/avg/max/mdev = 38.840/38.867/38.906/0.021 ms
[ec2-user@ip-11-0-0-214 ~]$ ping 10.0.0.24
PING 10.0.0.24 (10.0.0.24) 56(84) bytes of data.
64 bytes from 10.0.0.24: icmp_seq=1 ttl=127 time=39.6 ms
```

A screenshot of the AWS Management Console showing the "Peering connections" section under the "VPC" dashboard. The left sidebar shows "Virtual private cloud" and "Peering connections". The main pane displays a table of peering connections, with one entry selected: "pcx-0fdc15e71390bbfab" (Status: Active). The details for this connection are shown in a modal window, including the Requester owner ID (947309778595), Acceptor owner ID (947309778595), Requester VPC (vpc-072d4802c30e2e176), and VPC Peering connection ARN (arn:aws:ec2:eu-west-1:947309778595:vpc-peering-connection/pcx-0fdc15e71390bbfab).

## 📌 What is an Elastic IP (EIP) in AWS?

An **Elastic IP Address** is a **static, public IPv4 address** designed for **dynamic cloud computing**. It allows you to **mask the failure of an instance or software** by rapidly remapping the address to another instance in your AWS account.

### 13.49.77.47 -- old ip address

The screenshot shows the AWS EC2 Instances page. The left sidebar shows navigation options like Dashboard, AWS Global View, Events, Instances (selected), Images, and Elastic Block Store. The main area displays 'Instances (1/1) Info' for an instance named 'elastic task' with the ID i-03bf8b1c8e0fd49e1. The instance is listed as 'Running' with an 't3.micro' instance type, 'Initializing' status check, and located in 'eu-north-1a' availability zone. The 'Public IP' is listed as 13.49.77.47. Below the table, the 'Details' tab is selected, showing the 'Instance summary' section which includes the Instance ID (i-03bf8b1c8e0fd49e1), Public IPv4 address (13.49.77.47), Instance state (Running), and Private IPv4 addresses (172.31.27.175). The Public DNS is listed as ec2-13-49-77-47.eu-north-1.compute.amazonaws.com.

### 16.16.237.129-- new ip address

The screenshot shows the AWS Elastic IP addresses page. The left sidebar shows navigation options like Network & Security (selected), Auto Scaling, and Load Balancing. The main area displays 'Elastic IP addresses (1/1) Info' for an address named '-' with the ID 16.16.237.129. The address is listed as a 'Public IP'. Below the table, the 'Summary' tab is selected, showing the allocated IPv4 address (16.16.237.129), Type (Public IP), Allocation ID (eipalloc-0907e2dfe4319dc81), and Reverse DNS record (-). The private IP address is listed as 172.31.27.175.