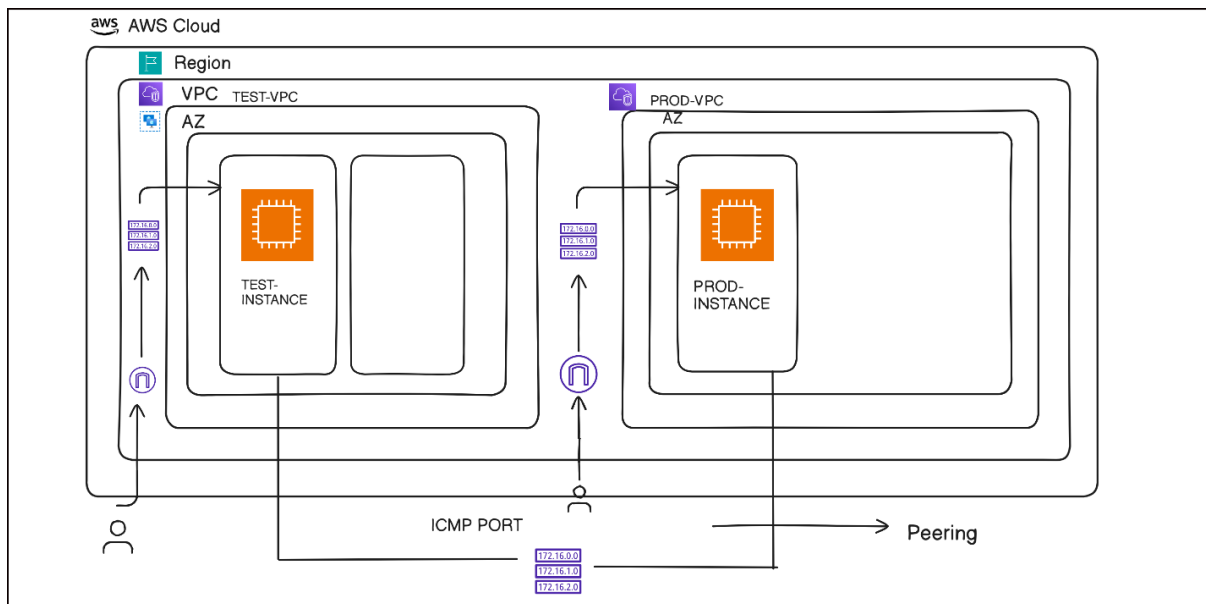


## VPC Peering Project

### Project Overview:



### Steps to do VPC Peering in AWS:

1. Go to the VPC page.
2. Click on "Create VPC" and provide the following information in the required fields.
  - a. VPC name - "test-vpc."
  - b. CIDR - "10.0.0.0/16"
  - c. Click on Create VPC.

VPCs VPC encryption controls - new

Your VPCs (1/3) [Info](#) Last updated 6 minutes ago [Actions](#) [Create VPC](#)

Find VPCs by attribute or tag

	Name	VPC ID	State	Encryption c...	Encryption control .
<input type="checkbox"/>	prod-vpc	<a href="#">vpc-0d6f9fa85e2177e5a</a>	Available	-	-
<input type="checkbox"/>	-	<a href="#">vpc-085b239eccf83bc44</a>	Available	-	-
<input checked="" type="checkbox"/>	test-vpc	<a href="#">vpc-05ad6920775719138</a>	Available	-	-

3. Go to the Subnets option.
4. Click on Create subnet and provide the following information in the required fields.
  - a. VPC ID - "test-vpc."
  - b. Name of the subnet - "public-test-subnet."
  - c. Availability zones - "us-east-2a"

- d. Divide the range of CIDR - “10.0.0.0/24”
- e. Click on “Create Subnet”.

**Subnets (1/5)** [Info](#) Last updated 13 minutes ago [Actions](#) [Create subnet](#)

Find subnets by attribute or tag

<input type="checkbox"/>	Name	Subnet ID	State	VPC
<input checked="" type="checkbox"/>	public-test-subnet	<a href="#">subnet-00e9041fae747c437</a>	Available	<a href="#">vpc-05ad6920775719138</a>   test...
<input type="checkbox"/>	-	<a href="#">subnet-0337b579399f0fa5e</a>	Available	<a href="#">vpc-085b239eccf83bc44</a>
<input type="checkbox"/>	-	<a href="#">subnet-0e767b9cab75ed1fe</a>	Available	<a href="#">vpc-085b239eccf83bc44</a>
<input type="checkbox"/>	-	<a href="#">subnet-070649e85e3346b83</a>	Available	<a href="#">vpc-085b239eccf83bc44</a>
<input type="checkbox"/>	prod-public-subnet	<a href="#">subnet-03d79089a0114115</a>	Available	<a href="#">vpc-0d6f9fa85e2177e5a</a>   prod...

5. Go to the route table.
6. Click on Create route table and provide the following information in the required fields.
  - a. Name of table - “test-rtb.”
  - b. Select VPC - “test-vpc.”
  - c. Click on “Create route table.”

**Route tables (1/5)** [Info](#) Last updated 16 minutes ago [Actions](#) [Create route table](#)

Find route tables by attribute or tag

<input type="checkbox"/>	Name	Route table ID	Explicit subnet associ...	Edge associations	Main
<input type="checkbox"/>	-	<a href="#">rtb-055d2adae34eccd79</a>	-	-	Yes
<input checked="" type="checkbox"/>	test-rtb	<a href="#">rtb-04dd5e7dc55379ee6</a>	<a href="#">subnet-00e9041fae747c...</a>	-	No
<input type="checkbox"/>	prod-rtb	<a href="#">rtb-09d5b55486141e6c8</a>	<a href="#">subnet-03d79089a01141...</a>	-	No
<input type="checkbox"/>	-	<a href="#">rtb-017f165c79351e665</a>	-	-	Yes
<input type="checkbox"/>	-	<a href="#">rtb-0d524292b33ae5c9f</a>	-	-	Yes

To allow the traffic from the outside world to create an internet gateway.

7. Go to the internet gateway.
8. Click on “create internet gateway”.
9. Give the name of the gateway and create it.
  - a. Name - “test-igw”

**Internet gateways (1/3)** [Info](#)

Find internet gateways by attribute or tag

[Actions](#) [Create internet gateway](#)

<input checked="" type="checkbox"/>	Name	Internet gateway ID	State	VPC ID
<input checked="" type="checkbox"/>	test-igw	<a href="#">igw-01bf5422785226ccb</a>	Attached	<a href="#">vpc-05ad6920775719138</a>   <a href="#">test</a>
<input type="checkbox"/>	-	<a href="#">igw-069980e44fa2c829b</a>	Attached	<a href="#">vpc-085b239eccc83bc44</a>
<input type="checkbox"/>	prod-igw	<a href="#">igw-08feb00d4979c269c</a>	Attached	<a href="#">vpc-0d6f9fa85e2177e5a</a>   <a href="#">prod</a>

10. Attach your interway gateway to the created VPC - “test-vpc”.

11. Go to the EC2.

12. Click on “Launch instance” and provide the following information in the required fields.

- Name of instance - “test-instance.”
- Choose the AMI - “ubuntu.”
- Choose the instance-type - “t2.micro”.
- Give the key pair created or create a new pair - “aws-key.”
- In the networking section, go to edit and edit the VPC details.
- Choose VPC -”test-vpc.”
- Choose a subnet.
- Create a new security group that allows SSH and HTTP.
- Launch the instance.

**Instances (1/2)** [Info](#)

Find Instance by attribute or tag (case-sensitive)

[Connect](#) [Instance state](#) [Actions](#) [Launch instances](#)

All states

<input checked="" type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status
<input checked="" type="checkbox"/>	test-instance	<a href="#">i-0d70a6eb5c7dcf105</a>	Running	t2.micro	2/2 checks passed	<a href="#">View alarms</a>
<input type="checkbox"/>	prod-instance	<a href="#">i-0fb581fae68f99950</a>	Running	t2.micro	2/2 checks passed	<a href="#">View alarms</a>

Now do the routing through the route tables so the requests reach the test-instance server.

13. Go to the VPC and route table options.

14. Click on the “test-rtb” checkbox and below the Route option.

**rtb-04dd5e7dc55379ee6 / test-rtb**

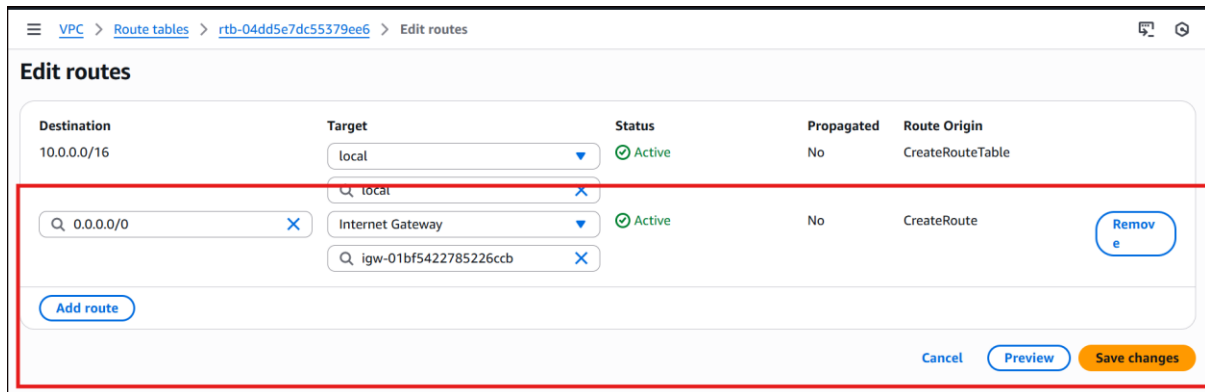
[Details](#) [Routes](#) [Subnet associations](#) [Edge associations](#) [Route propagation](#) [Tags](#)

**Routes (3)** [Edit routes](#)

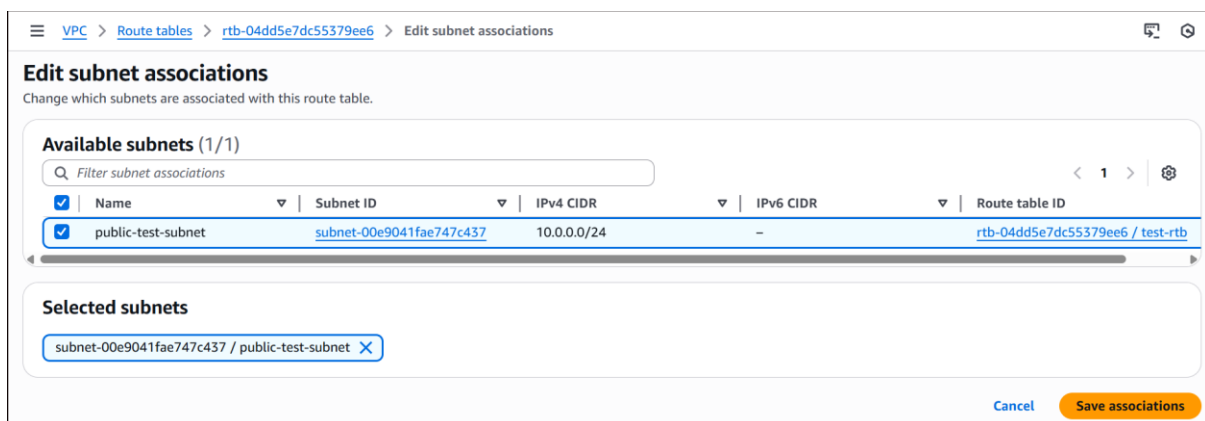
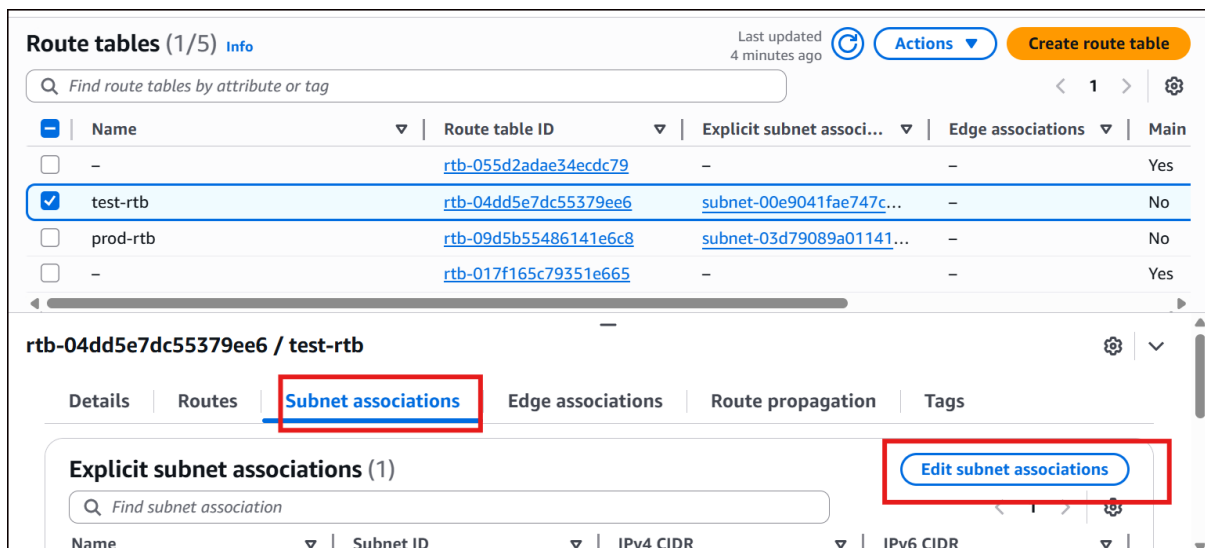
Filter routes

Destination	Target	Status	Propagated	Route Origin
-------------	--------	--------	------------	--------------

15. Edit routes and allow the routing of the internet gateway with this route table, and save the changes.



16. Go to the subnet associations and attach your “public-test-subnet” to the route table “test-rtb” by clicking on edit subnet associations.



Now your “test-instance” is connected to the internet and ready to use.

17. Do the same process for creating “prod-vpc” as well.

### Points to remember:

1. While creating “prod-instance” in the security group, give IP address ranges “198.168.0.0/16” in the HTTP request because we are creating prod-vpc, so it could be private, that’s why specific IP ranges.

**Edit inbound rules** Info

Inbound rules control the incoming traffic that's allowed to reach the instance.

Security group rule ID	Type	Protocol	Port range	Source	Description - optional	
sgr-0627da7424fc283ac	SSH	TCP	22	Cus...		Delete
sgr-08c8ba370c5beba0e	HTTP	TCP	80	Cus...	0.0.0.0/0 X	Delete
					192.168.0.0/16 X	

[Add rule](#)

Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only. X

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

### VPC Peering Method:

1. Go to the VPC and click on the “peering connections” option.
2. Give the following information in the settings and create peering between the two servers.
3. From “test-vpc” to “prod-vpc”.

**Create peering connection** Info

A VPC peering connection is a networking connection between two VPCs that enables you to route traffic between them privately. Info

**Peering connection settings**

**Name - optional**  
Create a tag with a key of 'Name' and a value that you specify.  
test-prod-peering

**Select a local VPC to peer with**

**VPC ID (Requester)**  
vpc-05ad6920775719138 (test-vpc)

**VPC CIDRs for vpc-05ad6920775719138 (test-vpc)**

CIDR	Status	Status reason
10.0.0.0/16	Associated	-

**Select another VPC to peer with**

**Account**  
☒ My account  
☐ Another account

**Region**  
☒ This Region (us-east-2)  
☐ Another Region

**VPC ID (Acceptor)**  
vpc-0d6f9fa85e2177e5a (prod-vpc)

**VPC CIDRs for vpc-0d6f9fa85e2177e5a (prod-vpc)**

CIDR	Status	Status reason
198.168.0.0/16	✓ Associated	-

- To allow peering between the two VPCs, we need to accept the request just like a friend request on social media, and then only the two VPCs can communicate with each other.

15

**Peering connections (1/1)** Info

Find peering connections by attribute or tag

Name	Peering connection ID	Status
test-prod-peering	pcx-0d756e9858c08f720	✓ Active

Actions

- View details
- Accept request
- Reject request
- Edit DNS settings
- Manage tags
- Delete peering connection

pcx-0d756e9858c08f720 / test-prod-peering

Details | DNS | Route tables | Tags

Then, only the status will be active for peering.

- To allow communication, we need a route table between two VPCs so our message can go to the VPCs.
- Go to the VPC and route table option.
- Route the “test-rtb” with “prod-rtb” by adding their IP ranges.

**Route tables (1/5)** [Info](#) Last updated 9 minutes ago [Actions](#) [Create route table](#)

	Name	Route table ID	Explicit subnet associ...	Edge associations	Main
<input type="checkbox"/>	-	<a href="#">rtb-055d2adae34ecdc79</a>	-	-	Yes
<input checked="" type="checkbox"/>	test-rtb	<a href="#">rtb-04dd5e7dc55379ee6</a>	<a href="#">subnet-00e9041fae747c...</a>	-	No
<input type="checkbox"/>	prod-rtb	<a href="#">rtb-09d5b55486141e6c8</a>	<a href="#">subnet-03d79089a01141...</a>	-	No
<input type="checkbox"/>	-	<a href="#">rtb-017f165c79351e665</a>	-	-	Yes

**rtb-04dd5e7dc55379ee6 / test-rtb**

Details **Routes** Subnet associations Edge associations Route propagation Tags

**Routes (3)** [Both](#) [Edit routes](#)

Destination	Target	Status	Propagated	Route Origin
10.0.0.0/16	local	Active	No	CreateRouteTable
198.168.0.0/16	Peering Connection	Active	No	CreateRoute
0.0.0.0/0	Internet Gateway	Active	No	CreateRoute

8. We are allowing routing from “test-instance” to “prod-instance” and vice versa in the form of IP addresses.

#### Prod IP Address

**Edit routes**

Destination	Target	Status	Propagated	Route Origin
10.0.0.0/16	local	Active	No	CreateRouteTable
198.168.0.0/16	Peering Connection	Active	No	CreateRoute
0.0.0.0/0	Internet Gateway	Active	No	CreateRoute

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

#### Test IP Address

**Edit routes**

Destination	Target	Status	Propagated	Route Origin
198.168.0.0/16	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](#)

9. Open both instances - test and prod, and try to “PING” - to send the messages or packets to the other server to check whether the servers are getting the requests or not.

When you try to do a ping, it won't work because the "PING" command only works with the ICMP protocol.

10. Add an ICMP request to the security group.

In "test-instance", add the IP address of prod-instance, ie, 192.168.0.0/16.

**Edit inbound rules** [Info](#)

Inbound rules control the incoming traffic that's allowed to reach the instance.

Security group rule ID	Type <a href="#">Info</a>	Protocol <a href="#">Info</a>	Port range <a href="#">Info</a>	Source <a href="#">Info</a>	Description - optional <a href="#">Info</a>	
sgr-00738234d72e2b1b4	All ICMP - IPv4 ▼	ICMP	All	Cus... ▼	198.168.0.0/16 ✕	Delete
sgr-03032dd4cc39a4c0	HTTP ▼	TCP	80	Cus... ▼	0.0.0.0/0 ✕	Delete
sgr-032658995fe718e25	SSH ▼	TCP	22	Cus... ▼	0.0.0.0/0 ✕	Delete

[Add rule](#)

In "prod-instance", add the IP Address of test-instance, ie, 10.0.0.0/16.

**Edit inbound rules** [Info](#)

Inbound rules control the incoming traffic that's allowed to reach the instance.

Security group rule ID	Type <a href="#">Info</a>	Protocol <a href="#">Info</a>	Port range <a href="#">Info</a>	Source <a href="#">Info</a>	Description - optional <a href="#">Info</a>	
sgr-0627da7424fc283ac	SSH ▼	TCP	22	Cus... ▼	0.0.0.0/0 ✕	Delete
sgr-08c8ba370c5beba0e	HTTP ▼	TCP	80	Cus... ▼	192.168.0.0/16 ✕	Delete
sgr-07dfc32cfb01c9a5f	All ICMP - IPv4 ▼	ICMP	All	Cus... ▼	10.0.0.0/16 ✕	Delete

11. Now you can do "PING" in the "test instance" to check, and now it will communicate with "prod-instance".



```
aws
Search [Alt+S]
United States (Ohio) Account ID: 6355-6648-5875 Neha Jain

From 198.168.0.178 icmp_seq=9 Destination Host Unreachable
^C
--- 198.168.0.178 ping statistics ---
10 packets transmitted, 0 received, 100% packet loss, time 9246ms
pipe 3
ubuntu@ip-10-0-0-154:~$ ping 198.168.0.178
PING 198.168.0.178 (198.168.0.178) 56(84) bytes of data:
64 bytes from 198.168.0.178: icmp_seq=1 ttl=64 time=0.742 ms
64 bytes from 198.168.0.178: icmp_seq=2 ttl=64 time=0.570 ms
64 bytes from 198.168.0.178: icmp_seq=3 ttl=64 time=0.454 ms
64 bytes from 198.168.0.178: icmp_seq=4 ttl=64 time=0.615 ms
64 bytes from 198.168.0.178: icmp_seq=5 ttl=64 time=0.505 ms
64 bytes from 198.168.0.178: icmp_seq=6 ttl=64 time=0.481 ms
64 bytes from 198.168.0.178: icmp_seq=7 ttl=64 time=0.451 ms
64 bytes from 198.168.0.178: icmp_seq=8 ttl=64 time=0.408 ms
64 bytes from 198.168.0.178: icmp_seq=9 ttl=64 time=0.578 ms
^C
--- 198.168.0.178 ping statistics ---
9 packets transmitted, 9 received, 0% packet loss, time 8217ms
rtt min/avg/max/mdev = 0.408/0.533/0.742/0.097 ms
ubuntu@ip-10-0-0-154:~$
```

**i-0d70a6eb5c7dcf105 (test-instance)**  
PublicIPs: 3.17.156.106 PrivateIPs: 10.0.0.154

12. Now you can do “PING” in the “prod-instance” to check, and now it will communicate with “test-instance”.

```
aws
Search [Alt+S]
United States (Ohio) Account ID: 6355-6648-5875 Neha Jain

ubuntu@ip-198-168-0-178:~$ ping 10.0.0.154
PING 10.0.0.154 (10.0.0.154) 56(84) bytes of data:
64 bytes from 10.0.0.154: icmp_seq=1 ttl=64 time=0.442 ms
64 bytes from 10.0.0.154: icmp_seq=2 ttl=64 time=0.466 ms
64 bytes from 10.0.0.154: icmp_seq=3 ttl=64 time=0.562 ms
64 bytes from 10.0.0.154: icmp_seq=4 ttl=64 time=0.622 ms
64 bytes from 10.0.0.154: icmp_seq=5 ttl=64 time=0.603 ms
64 bytes from 10.0.0.154: icmp_seq=6 ttl=64 time=0.493 ms
64 bytes from 10.0.0.154: icmp_seq=7 ttl=64 time=0.428 ms
64 bytes from 10.0.0.154: icmp_seq=8 ttl=64 time=0.419 ms
^C64 bytes from 10.0.0.154: icmp_seq=9 ttl=64 time=0.407 ms
64 bytes from 10.0.0.154: icmp_seq=10 ttl=64 time=0.403 ms
64 bytes from 10.0.0.154: icmp_seq=11 ttl=64 time=0.444 ms
64 bytes from 10.0.0.154: icmp_seq=12 ttl=64 time=0.463 ms
^C
--- 10.0.0.154 ping statistics ---
12 packets transmitted, 12 received, 0% packet loss, time 11257ms
rtt min/avg/max/mdev = 0.403/0.479/0.622/0.072 ms
ubuntu@ip-198-168-0-178:~$
```

**i-0fb581fae68f99950 (prod-instance)**  
PublicIPs: 18.117.186.238 PrivateIPs: 198.168.0.178

Enjoy :)