

# VPC\_TASK-2

## 1. Create one VPC, with 1 public subnet and 1 private subnet.

### Step 1: Create VPC

1. Go to **AWS Console** → **VPC**
2. Click **Create VPC**
3. Choose **VPC only**
4. Enter:
  - **Name:** my-vpc
  - **IPv4 CIDR:** 172.168.0.0/16
5. Created VPC.

The screenshot shows the AWS VPC console. At the top, there is a table listing two subnets: 'sub\_public-1' and 'sub\_private-1'. Below this, the main VPC details page is shown for 'vpc-01b458a02da3c2938 / my\_vpc'. The 'Details' tab is selected, displaying information such as VPC ID, State (Available), Main network ACL, DNS resolution, and security settings like Block Public Access and DHCP option set. The 'Resource map' tab is also visible, showing the network拓扑, including the VPC, Subnets (2), Route tables (2), and Network Connections (2).

## 2. Enable VPC peering for cross-region.

- **VPC A in ap-south-1**
- **VPC B in us-east-1**

### Steps:

1. Go to **VPC** → **Peering Connections** → **Create**
2. Select:

- Requester VPC: **VPC A**
  - Acceptor VPC: **VPC B**
3. After request → go to **VPC B** (other region)
  4. Accept the peering request.
  5. Update route tables in **both VPCs**:
    - VPC A → add route to VPC B CIDR with **peering connection**
    - VPC B → add route to VPC A CIDR with **peering connection**
  6. Add CIDR in security group (Edit inbound) in each instance where we are connecting.  
And make sure all traffic and 00000 source is also added.

The screenshot displays the AWS EC2 Instances and Routes sections. In the Instances section, two instances are listed:

Name	Instance ID	Instance state	Instance type	Status check	Availability Zone	Public IPv4 DNS	Public IPv4	Elastic IP
my_instance_v...	i-0675a40a2d75c7101	Running	t2.micro	2/2 checks passed	us-east-1a	-	98.92.128.134	-
my_instance_...	i-02306efdc921dacef	Running	t2.micro	2/2 checks passed	us-east-2a	-	ec2-3-144-2	-

In the Select an instance dropdown, "my\_instance\_v..." is selected. Below it, the Routes section shows the route tables for both instances:

**my\_instance\_v... / public\_subnet (4 routes)**

Destination	Target	Status	Propagated	Route Origin
0.0.0.0/0	igw-0cba21baa480e0158	Active	No	Activate Windows
172.31.0.0/16	pxc-0811354eae9f9d47b	Active	No	Create Route
172.168.0.0/16	local	Active	No	Go to Settings to activate Windows..

**my\_instance\_... / public\_subnet (3 routes)**

Destination	Target	Status	Propagated	Route Origin
0.0.0.0/0	igw-019ce32547b23a998	Active	No	Create Route
172.31.0.0/16	local	Active	No	Create Route Table
172.168.0.0/16	pxc-0811354eae9f9d47b	Active	No	Create Route Windows

Peering connections (1/4) <a href="#">Info</a>								
Name	Peering connection ID	Status	Requester VPC	Acceptor VPC	Requester CIDRs	Acceptor CIDRs	Requester c	Actions
my_vpc_self	pxc-0811354ea9f9d47b	Active	vpc-01b458a02da3c2938 / my_v...	vpc-0d053d73769179409	172.168.0.0/16	172.31.0.0/16	679625722	<a href="#">Edit</a> <a href="#">Delete</a>
my_vpc_pearin1	pxc-087c1cbd559394ff	Active	vpc-01b458a02da3c2938 / my_v...	vpc-09cc1e7ee377b05d1	172.168.0.0/16	192.168.0.0/24	679625722	<a href="#">Edit</a> <a href="#">Delete</a>
my_vpc_pearin	pxc-07913628cfde18ec	Failed	vpc-01b458a02da3c2938 / my_v...	vpc-09cc1e7ee377b05d1	-	-	679625722	<a href="#">Edit</a> <a href="#">Delete</a>
my_vpc_virginia_stockholm	pxc-021732a0c5796196	Failed	vpc-01b458a02da3c2938 / my_v...	vpc-09cc1e7ee377b05d1	-	-	679625722	<a href="#">Edit</a> <a href="#">Delete</a>

```
--- 192.168.0.12 ping statistics ---
200 packets transmitted, 0 received, 100% packet loss, time 206987ms
[ec2-user@ip-172-168-0-95 ~]$ ping 192.168.0.12
PING 192.168.0.12 (192.168.0.12) 56(84) bytes of data.
--- 192.168.0.12 ping statistics ---
15 packets transmitted, 0 received, 100% packet loss, time 14524ms
[ec2-user@ip-172-168-0-95 ~]$ ping 172.31.1.11
PING 172.31.1.11 (172.31.1.11) 56(84) bytes of data.
64 bytes from 172.31.1.11: icmp_seq=72 ttl=127 time=12.0 ms
64 bytes from 172.31.1.11: icmp_seq=73 ttl=127 time=11.9 ms
64 bytes from 172.31.1.11: icmp_seq=74 ttl=127 time=11.6 ms
64 bytes from 172.31.1.11: icmp_seq=75 ttl=127 time=11.9 ms
64 bytes from 172.31.1.11: icmp_seq=76 ttl=127 time=11.6 ms
64 bytes from 172.31.1.11: icmp_seq=77 ttl=127 time=11.9 ms
64 bytes from 172.31.1.11: icmp_seq=78 ttl=127 time=11.6 ms
64 bytes from 172.31.1.11: icmp_seq=79 ttl=127 time=11.9 ms
64 bytes from 172.31.1.11: icmp_seq=80 ttl=127 time=12.0 ms
64 bytes from 172.31.1.11: icmp_seq=81 ttl=127 time=11.7 ms
64 bytes from 172.31.1.11: icmp_seq=82 ttl=127 time=11.6 ms
64 bytes from 172.31.1.11: icmp_seq=83 ttl=127 time=11.4 ms
64 bytes from 172.31.1.11: icmp_seq=84 ttl=127 time=11.7 ms
64 bytes from 172.31.1.11: icmp_seq=85 ttl=127 time=12.0 ms
64 bytes from 172.31.1.11: icmp_seq=86 ttl=127 time=11.9 ms
64 bytes from 172.31.1.11: icmp_seq=87 ttl=127 time=12.0 ms
64 bytes from 172.31.1.11: icmp_seq=88 ttl=127 time=11.5 ms
64 bytes from 172.31.1.11: icmp_seq=89 ttl=127 time=11.1 ms
64 bytes from 172.31.1.11: icmp_seq=90 ttl=127 time=11.7 ms
64 bytes from 172.31.1.11: icmp_seq=91 ttl=127 time=12.0 ms
64 bytes from 172.31.1.11: icmp_seq=92 ttl=127 time=12.0 ms
64 bytes from 172.31.1.11: icmp_seq=93 ttl=127 time=12.0 ms
64 bytes from 172.31.1.11: icmp_seq=94 ttl=127 time=12.2 ms
64 bytes from 172.31.1.11: icmp_seq=95 ttl=127 time=12.1 ms
64 bytes from 172.31.1.11: icmp_seq=96 ttl=127 time=11.9 ms
64 bytes from 172.31.1.11: icmp_seq=97 ttl=127 time=11.9 ms
64 bytes from 172.31.1.11: icmp_seq=98 ttl=127 time=11.5 ms
64 bytes from 172.31.1.11: icmp_seq=99 ttl=127 time=11.7 ms
64 bytes from 172.31.1.11: icmp_seq=100 ttl=127 time=11.5 ms
64 bytes from 172.31.1.11: icmp_seq=101 ttl=127 time=11.6 ms
64 bytes from 172.31.1.11: icmp_seq=102 ttl=127 time=11.6 ms
64 bytes from 172.31.1.11: icmp_seq=103 ttl=127 time=11.9 ms
```

Peering connections > Create peering connection

Peering connection settings

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

Select a local VPC to peer with

VPC ID (Requester)  
vpc-01b458a02da3c2938 (my\_vpc)

VPC CIDRs for vpc-01b458a02da3c2938 (my\_vpc)

CIDR	Status	Status reason
172.168.0.0/16	Associated	-

Select another VPC to peer with

Account  
 Another account

Account ID  
207662791773

Region  
 Another Region  
Europe (Stockholm) (eu-north-1)

VPC ID (Acceptor)  
vpc-09cc1e7ee377b05d1

Activate Windows  
Go to Settings to activate Windows.

VPC > Route tables > rtb-0a3a09dc03a68be7 > Edit routes

Edit routes

Destination	Target	Status	Propagated	Route Origin
172.168.0.0/16	local	Active	No	CreateRoute
Q_ 192.168.0.0/24	Peer Connection	-	No	CreateRoute
Q_ pxc-087c1cbd559394ff	Peer Connection	-		
Use: "pxc-087c1cbd559394ff"	pxc-087c1cbd559394ff (my_vpc_pearin1)			

Add route

Cancel Preview Save changes

### 3. Enable VPC peering for cross-account (you can collaborate with your friend to do this task).

Steps:

#### 1. Your account (Requester):

- o Create peering request
- o Provide **their VPC ID**
- o Provide **their AWS Account ID**

#### 2. They (Acceptor):

- o Login to VPC → Peering
- o Accept request

#### 3. Update route tables on both sides.

Instances	Name	Type	Status	Region	View alarms	Region	View alarms	Region	View alarms	Region	View alarms
Instances	My_instance_p...	t2.micro	Stopped	us-east-1a	-	us-east-1a	-	us-east-1a	-	us-east-1a	-
Instance Types	my_peering_pub	t2.micro	Stopped	us-east-1a	-	us-east-1a	-	us-east-1a	-	us-east-1a	-
Launch Templates	instance-1	t2.micro	Stopped	us-east-1a	-	us-east-1a	-	us-east-1a	-	us-east-1a	-
Spot Requests	testing_peer	t2.micro	Running	us-east-1a	2/2 checks passed	us-east-1a	-	us-east-1a	-	us-east-1a	13.220.147.127
Savings Plans	instance-3	t2.micro	Stopped	us-east-1e	-	us-east-1e	-	us-east-1e	-	us-east-1e	-
Reserved Instances	my_instance_v...	t2.micro	Stopped	us-east-1a	-	us-east-1a	-	us-east-1a	-	us-east-1a	-
Durability	instance-2	t2.micro	Stopped	us-east-1a	-	us-east-1a	-	us-east-1a	-	us-east-1a	-

Peering connections (4) <small>info</small>											
<input type="text"/> Find peering connections by attribute or tag											
Name	Peering connection ID	Status	Requester VPC	Acceptor VPC	Requester CIDRs	Acceptor CIDRs	Requester owner ID	Acceptor owner ID	Action	Actions	Create peering connection
my_vpc_self	pxx-0811354ea6ff5d47b	Active	vpc-01b458ad2da3c2938 / my...	vpc-0d053d73769179409	172.168.0.0/16	172.31.0.0/16	679625722057	67			
-	pxx-05ef9b5706d1432f	Active	vpc-01126d967b1bb73af	vpc-0c1099e1054c091eb / my...	172.31.0.0/16	10.0.0.0/16	207662791773	67			
my_vpc_pearning1	pxx-08721c1bd559394ff	Deleted	vpc-01b458ad2da3c2938 / my...	vpc-09cc1e/ee577605d1	-	-	679625722057	26			
-	pxx-0cb40b9aa8a1e96ff	Deleted	vpc-034fcbebe7096ec6b	vpc-0c1099e1054c091eb / my...	-	-	207662791773	67			

**Select a local VPC to peer with**

VPC ID (Requester)  
vpc-01126d967b1bb73af

VPC CIDRs for vpc-01126d967b1bb73af

CIDR	Status	Status reason
172.31.0.0/16	Associated	-

**Select another VPC to peer with**

Account  
 My account  Another account

Account ID  
679625722057

Region  
 This Region (eu-north-1)  Another Region

United States (N. Virginia) (us-east-1)

VPC ID (Acceptor)  
vpc-0c1099e1054c091eb

**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.

Key	Value - optional
<input type="text"/> Name	<input type="text"/> my-stockholm-virginia-peering

Add new tag

```

ArjumandM@Arjumand MINGW64 ~/Downloads (master)
$ ssh -i "Testing.pem" ec2-user@98.92.128.134
  _#
  ~\_ #####
  ~\_ \###|
  ~\_ \#/  V~' .-> https://aws.amazon.com/linux/amazon-linux-2023
  ~\_ \_/
  ~\_ \_/
  ~\_ \_/
  ~\_ \_/
Last Login: Mon Nov 24 10:43:42 2025 from 14.192.14.62
[ec2-user@ip-172-168-0-95 ~]$ exit
logout
Connection to 98.92.128.134 closed.

ArjumandM@Arjumand MINGW64 ~/Downloads (master)
$ ssh -i "Testing1.pem" ec2-user@ec2-18-216-88-104.us-east-2.compute.amazonaws.com
The authenticity of host 'ec2-18-216-88-104.us-east-2.compute.amazonaws.com (18.216.88.104)' can't be established.
ED25519 key fingerprint is SHA256:9d9mWA+361nphyz0Vt00gLoCsNvhwAmjyBC/Zwg.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-18-216-88-104.us-east-2.compute.amazonaws.com' (ED25519) to the list of known hosts.

  _#
  ~\_ #####
  ~\_ \###|
  ~\_ \#/  V~' .-> https://aws.amazon.com/linux/amazon-linux-2023
  ~\_ \_/
  ~\_ \_/
  ~\_ \_/
  ~\_ \_/

```

```

[ec2-user@ip-10-0-0-227 ~]$ ping 172.31.0.0/16
PING 172.31.0.0 (172.31.0.0) 56(84) bytes of data.
64 bytes from 172.31.0.0: icmp_seq=1 ttl=127 time=110 ms
64 bytes from 172.31.0.0: icmp_seq=2 ttl=127 time=110 ms
64 bytes from 172.31.0.0: icmp_seq=3 ttl=127 time=110 ms
64 bytes from 172.31.0.0: icmp_seq=4 ttl=127 time=110 ms
64 bytes from 172.31.0.0: icmp_seq=5 ttl=127 time=110 ms
64 bytes from 172.31.0.0: icmp_seq=6 ttl=127 time=110 ms
64 bytes from 172.31.0.0: icmp_seq=7 ttl=127 time=110 ms
64 bytes from 172.31.0.0: icmp_seq=8 ttl=127 time=110 ms
64 bytes from 172.31.0.0: icmp_seq=9 ttl=127 time=110 ms
[ec2-user@ip-10-0-0-227 ~]$ ping 172.31.20.78
PING 172.31.20.78 (172.31.20.78) 56(84) bytes of data.
64 bytes from 172.31.20.78: icmp_seq=1 ttl=127 time=110 ms
64 bytes from 172.31.20.78: icmp_seq=2 ttl=127 time=110 ms
64 bytes from 172.31.20.78: icmp_seq=3 ttl=127 time=110 ms
64 bytes from 172.31.20.78: icmp_seq=4 ttl=127 time=110 ms
64 bytes from 172.31.20.78: icmp_seq=5 ttl=127 time=110 ms
64 bytes from 172.31.20.78: icmp_seq=6 ttl=127 time=110 ms
64 bytes from 172.31.20.78: icmp_seq=7 ttl=127 time=110 ms
64 bytes from 172.31.20.78: icmp_seq=8 ttl=127 time=110 ms
64 bytes from 172.31.20.78: icmp_seq=9 ttl=127 time=110 ms

```

## 4. Set up a VPC Transit Gateway.

### ?

#### Create Transit Gateway

- VPC → Transit Gateways → Create → default settings.

### ?

#### Create VPC Attachment

- Attach your VPC to the TGW.
- Select 1 subnet per AZ.

### ?

#### Association happens automatically

- No need to change anything here.

### ?

#### Update VPC Route Table

- Add route → Destination = other VPC CIDR
- Target = **Transit Gateway**

Route Table						
Destination	Target	Status	Propagated	Route Origin		
0.0.0.0/0	igw-0cba21baa480e0158	Active	No	Create Route		
10.20.0.0/16	pcx-0811354ea9f9d47b	Active	No	Create Route		
172.31.0.0/16	pcx-0811354ea9f9d47b	Active	No	Create Route		
172.168.0.0/16	local	Active	No	Create Route Table	Activate Windows	

The screenshot shows the AWS VPC dashboard with the following details:

- VPCs:** Three VPCs are listed:
  - my\_vpc\_1:** VPC ID: vpc-01b458a02da3c2938, State: Available, IPv4 CIDR: 172.168.0.0/16, IPv6 CIDR: -, DHCP option set: dopt-047e9143.
  - my\_vpc\_3:** VPC ID: vpc-09547f17954423b9e7, State: Available, IPv4 CIDR: 172.31.0.0/16, IPv6 CIDR: -, DHCP option set: dopt-047e9143.
  - my\_vpc\_2:** VPC ID: vpc-0c1099e1054c091eb, State: Available, IPv4 CIDR: 10.0.0.0/16, IPv6 CIDR: -, DHCP option set: dopt-047e9143.
- Details for my\_vpc\_1:**
  - Subnets: One subnet is listed.
  - Route tables: One route table is listed.
  - Internet gateways: One internet gateway is listed.
  - Egress-only internet gateways: None.
  - Carrier gateways: None.
  - DHCP option sets: One option set is listed.
  - Elastic IPs: None.
  - Managed prefix lists: None.
  - NAT gateways: None.
  - Peering connections: None.
  - Route servers: None.

```
[ec2-user@ip-172-168-0-19 ~]$ ping 192.168.0.59
PING 192.168.0.59 (192.168.0.59) 56(84) bytes of data.
64 bytes from 192.168.0.59: icmp_seq=1 ttl=126 time=2.63 ms
64 bytes from 192.168.0.59: icmp_seq=2 ttl=126 time=1.37 ms
64 bytes from 192.168.0.59: icmp_seq=3 ttl=126 time=1.21 ms
64 bytes from 192.168.0.59: icmp_seq=4 ttl=126 time=1.22 ms
64 bytes from 192.168.0.59: icmp_seq=5 ttl=126 time=1.27 ms
64 bytes from 192.168.0.59: icmp_seq=6 ttl=126 time=1.16 ms
64 bytes from 192.168.0.59: icmp_seq=7 ttl=126 time=1.29 ms
64 bytes from 192.168.0.59: icmp_seq=8 ttl=126 time=1.30 ms
64 bytes from 192.168.0.59: icmp_seq=9 ttl=126 time=1.40 ms
64 bytes from 192.168.0.59: icmp_seq=10 ttl=126 time=1.21 ms
64 bytes from 192.168.0.59: icmp_seq=11 ttl=126 time=1.18 ms
64 bytes from 192.168.0.59: icmp_seq=12 ttl=126 time=1.22 ms
64 bytes from 192.168.0.59: icmp_seq=13 ttl=126 time=1.19 ms
64 bytes from 192.168.0.59: icmp_seq=14 ttl=126 time=1.33 ms
64 bytes from 192.168.0.59: icmp_seq=15 ttl=126 time=1.24 ms
64 bytes from 192.168.0.59: icmp_seq=16 ttl=126 time=1.47 ms
64 bytes from 192.168.0.59: icmp_seq=17 ttl=126 time=1.27 ms
64 bytes from 192.168.0.59: icmp_seq=18 ttl=126 time=1.17 ms
64 bytes from 192.168.0.59: icmp_seq=19 ttl=126 time=1.16 ms
64 bytes from 192.168.0.59: icmp_seq=20 ttl=126 time=1.29 ms
64 bytes from 192.168.0.59: icmp_seq=21 ttl=126 time=1.22 ms
64 bytes from 192.168.0.59: icmp_seq=22 ttl=126 time=2.78 ms
64 bytes from 192.168.0.59: icmp_seq=23 ttl=126 time=1.19 ms
64 bytes from 192.168.0.59: icmp_seq=24 ttl=126 time=1.22 ms
64 bytes from 192.168.0.59: icmp_seq=25 ttl=126 time=1.16 ms
64 bytes from 192.168.0.59: icmp_seq=26 ttl=126 time=1.13 ms
64 bytes from 192.168.0.59: icmp_seq=27 ttl=126 time=1.15 ms
64 bytes from 192.168.0.59: icmp_seq=28 ttl=126 time=1.09 ms
64 bytes from 192.168.0.59: icmp_seq=29 ttl=126 time=1.33 ms
64 bytes from 192.168.0.59: icmp_seq=30 ttl=126 time=1.14 ms
64 bytes from 192.168.0.59: icmp_seq=31 ttl=126 time=1.12 ms
64 bytes from 192.168.0.59: icmp_seq=32 ttl=126 time=1.17 ms
64 bytes from 192.168.0.59: icmp_seq=33 ttl=126 time=1.16 ms
^C
--- 192.168.0.59 ping statistics ---
33 packets transmitted, 0% received, 0% packet loss, time 32048ms
rtt min/avg/max/mdev = 1.092/1.315/2.779/0.363 ms
[ec2-user@ip-172-168-0-19 ~]$ 10.0.0.143
-bash: 10.0.0.143: command not found
[ec2-user@ip-172-168-0-196 ~]$ ping 10.0.0.143
PING 10.0.0.143 (10.0.0.143) 56(84) bytes of data.
64 bytes from 10.0.0.143: icmp_seq=1 ttl=126 time=1.82 ms
64 bytes from 10.0.0.143: icmp_seq=2 ttl=126 time=0.899 ms
64 bytes from 10.0.0.143: icmp_seq=3 ttl=126 time=0.824 ms
64 bytes from 10.0.0.143: icmp_seq=4 ttl=126 time=0.822 ms
64 bytes from 10.0.0.143: icmp_seq=5 ttl=126 time=0.902 ms
64 bytes from 10.0.0.143: icmp_seq=6 ttl=126 time=0.875 ms
64 bytes from 10.0.0.143: icmp_seq=7 ttl=126 time=0.889 ms
64 bytes from 10.0.0.143: icmp_seq=8 ttl=126 time=0.822 ms
64 bytes from 10.0.0.143: icmp_seq=9 ttl=126 time=0.981 ms
64 bytes from 10.0.0.143: icmp_seq=10 ttl=126 time=0.742 ms
^C
--- 10.0.0.143 ping statistics ---
10 packets transmitted, 0% received, 0% packet loss, time 0ms
```

## 5. Set up a VPC Endpoint.

- Go to VPC → Endpoints → Create Endpoint

- **Choose service:**  
com.amazonaws.<region>.s3 (Gateway type)
- **Selected my VPC**
- **Selected ONLY private route table**
- **Policy → Full Access**
- **Created Endpoint**

rtb-0d378952e5b0eeef9e / my\_rorer\_private

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

**Routes (2)**

Destination	Target	Status	Propagated	Route Origin
pl-63a5400a	vpc-0f527663950449662	Active	No	Activate Windows
172.168.0.0/16	local	Active	No	Create Route Create Route Table Go to Settings to activate Windows.

**Services (1/2)**

Service Name	Owner	Type
com.amazonaws.us-east-1.s3	amazon	Gateway
com.amazonaws.us-east-1.33	amazon	Interface

**Network settings**  
Select the VPC in which to create the endpoint

**VPC**  
Create the VPC endpoint in the VPC in the same AWS Region from which you will access a resource.  
vpc-01b458a02da3c2938 (my\_vpc)

**Additional settings**

**Route tables (1/2) Info**

Name	Route Table ID	Main	Associated Id
public_subnet	rtb-03a509dc03a68be57 (public_subnet)	Yes	subnet-0cb50a1890b53c22 (sub_public-1)
my_rorer_private	rtb-0d378952e5b0eeef9e (my_rorer_pri...)	No	subnet-03b984f0fa52b20ea (sub_private-1)

When you use an endpoint, the source IP addresses from your instances in your affected subnets for accessing the AWS service in the same region will be private IP addresses, not public IP addresses. Existing connections from your affected subnets to the AWS service that use public IP addresses may be dropped. Ensure that you don't have critical tasks running when you create or modify an endpoint.

**Policy**   
VPC endpoint policy controls access to the service.

**Full access**  
Allow access by any user or service within the VPC using credentials from any Amazon Web Services accounts to any resources in this Amazon Web Services service. All policies — IAM user policies, VPC endpoint policies, and Amazon Web Services service-specific policies (e.g. Amazon S3 bucket policies, any S3 ACL policies) — must grant the necessary permissions for access to succeed.

**Custom**  
Use the [policy creation tool](#) to generate a policy, then paste the generated policy below.

1

Act