

# Create Three VPC's and Connect the Three VPC's Using Transit Gateway

## What is Amazon VPC?

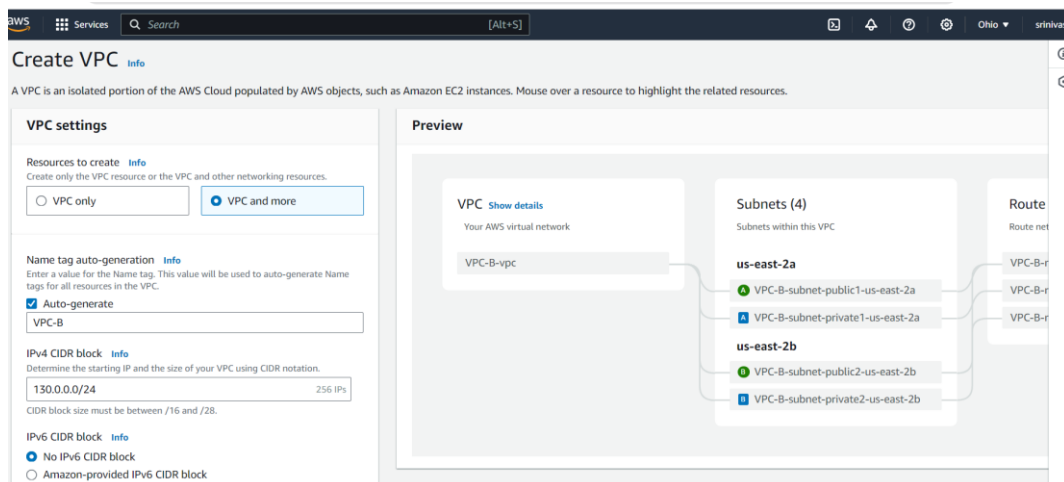
With Amazon Virtual Private Cloud (Amazon VPC), you can launch AWS resources in a logically isolated virtual network that you've defined. This virtual network closely resembles a traditional network that you'd operate in your own data center, with the benefits of using the scalable infrastructure of AWS.

## What is Transit Gateway?

A transit gateway is a network transit hub that you can use to interconnect your virtual private clouds (VPCs) and on-premises networks. As your cloud infrastructure expands globally, inter-Region peering connects transit gateways together using the AWS Global Infrastructure.

## Create Virtual Private Network

1. Log in your Aws Account & search for VPC in the search box.
2. Click on Create VPC & select VPC More.
3. Follow the steps mentioned in the below snapshots.



**Number of public subnets** Info  
The number of public subnets to add to your VPC. Use public subnets for web applications that need to be publicly accessible over the internet.

**Number of private subnets** Info  
The number of private subnets to add to your VPC. Use private subnets to secure backend resources that don't need public access.

► **Customize subnets CIDR blocks**

**NAT gateways (\$)** Info  
Choose the number of Availability Zones (AZs) in which to create NAT gateways. Note that there is a charge for each NAT gateway.

☒ None ☐ In 1 AZ ☐ 1 per AZ

**VPC endpoints** Info  
Endpoints can help reduce NAT gateway charges and improve security by accessing S3 directly from the VPC. By default, full access policy is used. You can customize this policy at any time.

☐ None ☒ S3 Gateway

**DNS options** Info

☒ Enable DNS hostnames

☒ Enable DNS resolution

4. Some subnet & Route Tables & IGW Snapshots are mentioned below:

**VPC dashboard** ×

EC2 Global View

Filter by VPC

▼ **Virtual private cloud**

- Your VPCs
- Subnets**
- Route tables
- Internet gateways
- Egress-only internet gateways
- DHCP option sets
- Elastic IPs
- Managed prefix lists
- Endpoints
- Endpoint services
- NAT gateways
- Peering connections

**Subnets (11)** Info Last updated 11 minutes ago Actions Create subnet

Find resources by attribute or tag

<input type="checkbox"/>	Name	Subnet ID	State	VPC	IPv4 CIDR
<input type="checkbox"/>	-	subnet-036f679611cc9111	Available	vpc-0f4a664593c82e9a4   VPC...	172.31.0.0/20
<input type="checkbox"/>	-	subnet-0e96e8839bb9099a9	Available	vpc-0f4a664593c82e9a4   VPC...	172.31.32.0/20
<input type="checkbox"/>	-	subnet-0be9cbe3f9350697c	Available	vpc-0f4a664593c82e9a4   VPC...	172.31.16.0/20
<input type="checkbox"/>	VPC-A-subnet-private2-us-east-2b	subnet-0752d63b9ae74b400	Available	vpc-02a06c395acf693da   VPC...	120.0.0.144/28
<input type="checkbox"/>	VPC-B-subnet-private1-us-east-2a	subnet-0f5d3bff3fee21dbf	Available	vpc-053242a35b4b440d9   VPC...	130.0.0.128/28
<input type="checkbox"/>	VPC-A-subnet-private1-us-east-2a	subnet-0a0c008f3d504a6a6	Available	vpc-02a06c395acf693da   VPC...	120.0.0.128/28
<input type="checkbox"/>	VPC-B-subnet-public1-us-east-2a	subnet-0855bb7cac89f15c3	Available	vpc-053242a35b4b440d9   VPC...	130.0.0.0/28
<input type="checkbox"/>	VPC-A-subnet-public2-us-east-2b	subnet-00264329fd7e8ff6	Available	vpc-02a06c395acf693da   VPC...	120.0.0.16/28
<input type="checkbox"/>	VPC-B-subnet-private2-us-east-2b	subnet-031c9c66ddda08c8e	Available	vpc-053242a35b4b440d9   VPC...	130.0.0.144/28
<input type="checkbox"/>	VPC-A-subnet-public1-us-east-2a	subnet-0c2bd4ee1ac816f0a	Available	vpc-02a06c395acf693da   VPC...	120.0.0.0/28
<input type="checkbox"/>	VPC-B-subnet-public2-us-east-2b	subnet-0c567eae720acf17c	Available	vpc-053242a35b4b440d9   VPC...	130.0.0.16/28

**VPC dashboard** ×

EC2 Global View

Filter by VPC

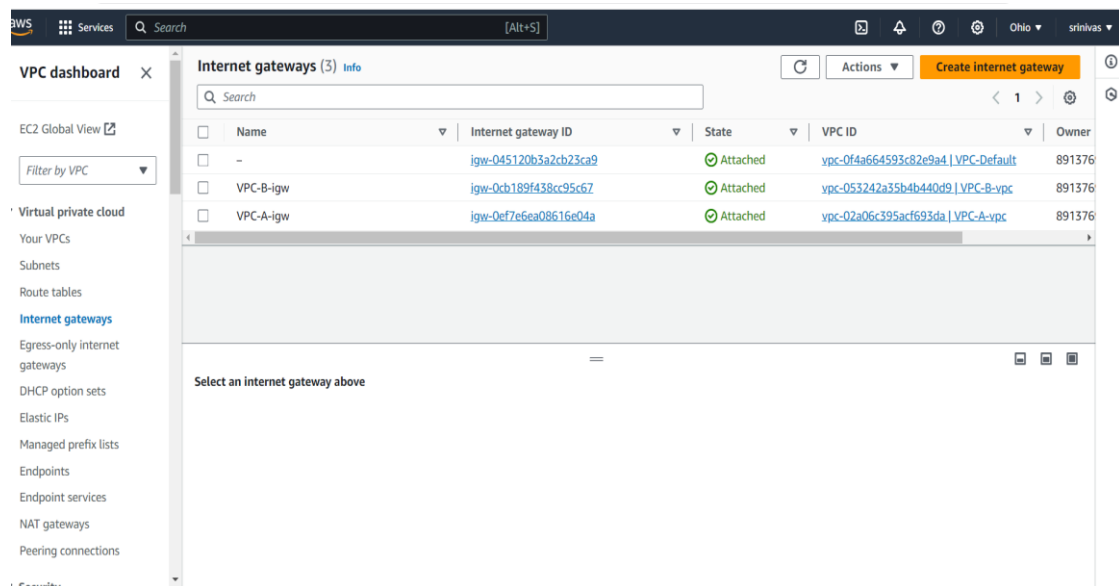
▼ **Virtual private cloud**

- Your VPCs
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- Route tables**
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**Route tables (1/9)** Info Last updated 1 minute ago Actions Create route table

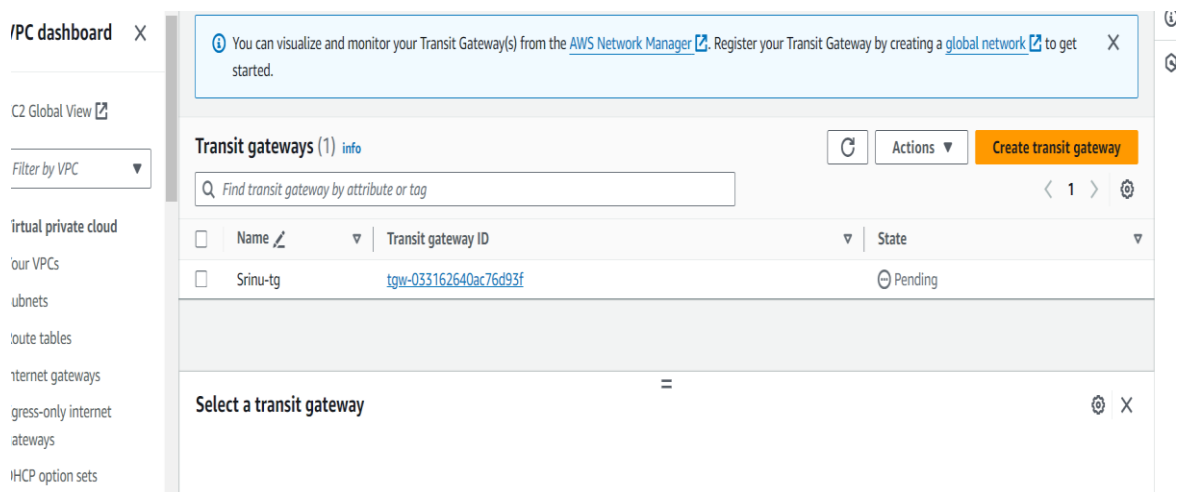
Find resources by attribute or tag

<input checked="" type="checkbox"/>	Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC
<input checked="" type="checkbox"/>	-	rtb-000a8edd6e06051f4	-	-	Yes	vpc-0f4a664593c82e9a4
<input type="checkbox"/>	VPC-A-rtb-private1-us-east-2a	rtb-045240e1cc52da6ec	subnet-0a0c008f3d504a6a6	-	No	vpc-02a06c395acf693da
<input type="checkbox"/>	VPC-A-rtb-private2-us-east-2b	rtb-057e6742cd122b7b7	subnet-0752d63b9ae74b400	-	No	vpc-02a06c395acf693da
<input type="checkbox"/>	VPC-B-rtb-public	rtb-078a2f28ee1f7b675	2 subnets	-	No	vpc-053242a35b4b440d9
<input type="checkbox"/>	VPC-B-rtb-private1-us-east-2a	rtb-005a37f1db9a7604d	subnet-0f5d3bff3fee21dbf	-	No	vpc-053242a35b4b440d9
<input type="checkbox"/>	-	rtb-0557432f37926e667	-	-	Yes	vpc-02a06c395acf693da
<input type="checkbox"/>	VPC-B-rtb-private2-us-east-2b	rtb-08c8eb1528c08036	subnet-031c9c66ddda08c8e	-	No	vpc-053242a35b4b440d9
<input type="checkbox"/>	-	rtb-0e03ea9f97bc2bb7f	-	-	Yes	vpc-053242a35b4b440d9
<input type="checkbox"/>	VPC-A-rtb-public	rtb-07e89073ef37c6bfc	2 subnets	-	No	vpc-02a06c395acf693da



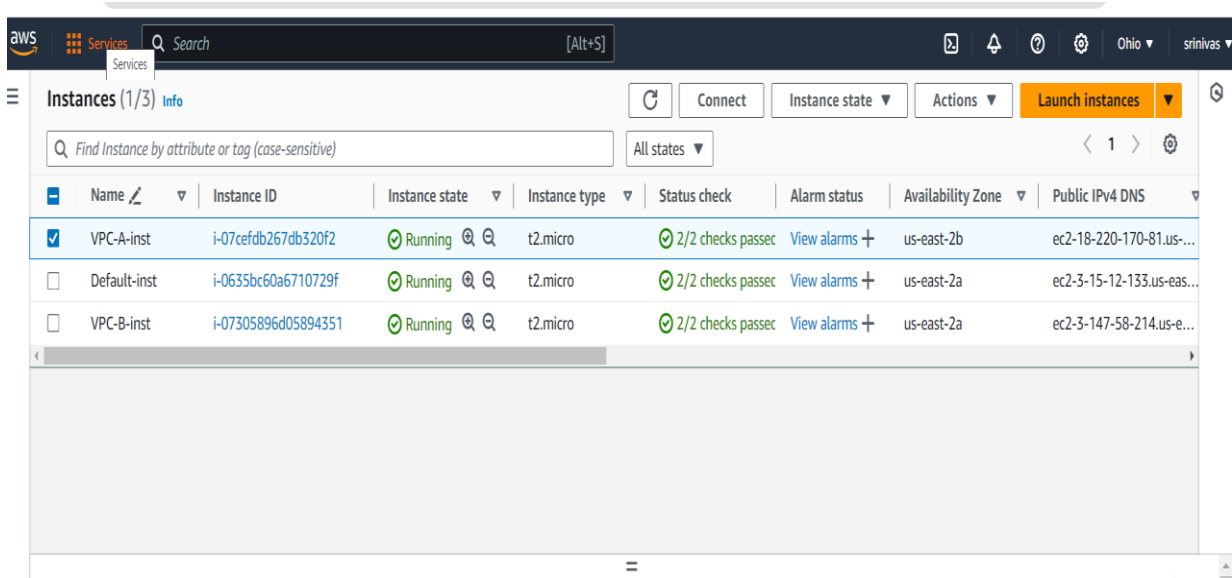
## Create Transit Gateway:

1. Go to Transit Gateway and select “Create Transit Gateway”.
2. Now, Create Two Transit Gateway Attachments and attach to Transit Gateway.
3. Some snapshots are attached below.



## Create EC2 Instance:

1. Create Three EC2 Instances for Three VPC's.
2. Go to instance -- Launch Instance -- create key pair -- Network -- select AZ -- Select Security Group -- Launch Instance
3. Some EC2 Snapshots are attached below.



Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
VPC-A-inst	i-07cefdb267db320f2	Running	t2.micro	2/2 checks passed	View alarms	us-east-2b	ec2-18-220-170-81.us-...
Default-inst	i-0635bc60a6710729f	Running	t2.micro	2/2 checks passed	View alarms	us-east-2a	ec2-3-15-12-133.us-eas...
VPC-B-inst	i-07305896d05894351	Running	t2.micro	2/2 checks passed	View alarms	us-east-2a	ec2-3-147-58-214.us-e...

4. After creating 3 EC2 Instances & Copy the SSH.
5. Paste it in the Git bash and Connect.

```
Installed:
generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch
libunwind-1.4.0-5.amzn2023.0.2.x86_64
nginx-core-1:1.24.0-1.amzn2023.0.2.x86_64
nginx-mimetypes-2.1.49-3.amzn2023.0.3.noarch
gperftools-1
nginx-1:1.24
nginx-filesys

complete!
[root@ip-120-0-0-25 ~]# cd /usr/share/nginx/html
[root@ip-120-0-0-25 html]# rm index.html
rm: remove regular file 'index.html'? yes
[root@ip-120-0-0-25 html]# vi index.html

[1]+  stopped                  vi index.html
[root@ip-120-0-0-25 html]#
[root@ip-120-0-0-25 html]# rm index.html
rm: cannot remove 'index.html': No such file or directory
[root@ip-120-0-0-25 html]# vi index.html
[root@ip-120-0-0-25 html]# systemctl restart nginx
[root@ip-120-0-0-25 html]# curl 172.31.0.154:80
This server is from Default VPC
[root@ip-120-0-0-25 html]#
```

## OUTPUT:

```
15 root      20  0      0      0      0 I  0.0  0.0
16 root      rt   0      0      0      0 S  0.0  0.0
18 root      20  0      0      0      0 S  0.0  0.0
20 root      20  0      0      0      0 S  0.0  0.0
21 root       0 -20     0      0      0 I  0.0  0.0
22 root      20  0      0      0      0 S  0.0  0.0
23 root      20  0      0      0      0 S  0.0  0.0
24 root      20  0      0      0      0 S  0.0  0.0
25 root      20  0      0      0      0 I  0.0  0.0
27 root       0 -20     0      0      0 I  0.0  0.0
28 root      20  0      0      0      0 S  0.0  0.0
29 root      39 19      0      0      0 S  0.0  0.0
root@ip-172-31-0-154 htm]# ^C
root@ip-172-31-0-154 htm]# curl 120.0.0.25:80
This server is from VPC-A
root@ip-172-31-0-154 htm]#
```

```
[1]+  stopped                  vi index.html
[root@ip-120-0-0-25 htm]#
[root@ip-120-0-0-25 htm]# rm index.html
rm: cannot remove 'index.html': No such file or directory
[root@ip-120-0-0-25 htm]# vi index.html
[root@ip-120-0-0-25 htm]# systemctl restart nginx
[root@ip-120-0-0-25 htm]# curl 172.31.0.154:80
This server is from Default VPC
[root@ip-120-0-0-25 htm]# ^C
[root@ip-120-0-0-25 htm]# curl 130.0.0.25:80
^C
[root@ip-120-0-0-25 htm]# curl 172.31.0.154:80
This server is from Default VPC
[root@ip-120-0-0-25 htm]#
```