

# Assignment-2:

**Q. Create a Transit Gateway in one region and another Transit Gateway in another region and enable communication between both the 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. All network traffic between AWS data centers is automatically encrypted at the physical layer.

A *transit gateway* acts as a Regional virtual router for traffic flowing between your virtual private clouds (VPCs) and on-premises networks. A transit gateway scales elastically based on the volume of network traffic.

Routing through a transit gateway operates at layer 3, where the packets are sent to a specific next-hop attachment, based on their destination IP addresses.

Create a VPC three different VPC'S.The three vpc's are

1)my\_first\_vpc 2)my\_second\_vpc 3)my\_third\_vpc

Your VPCs (4) <a href="#">Info</a>									Actions ▾	Create VPC
<input type="text" value="Search"/>								< 1 >		
<input type="checkbox"/>	Name ▾	VPC ID ▾	State ▾	IPv4 CIDR ▾	IPv6 CIDR ▾	DHCP				
<input type="checkbox"/>	-	<a href="#">vpc-0e91b92b099ab629b</a>	Available	172.31.0.0/16	-	<a href="#">dopt-</a>				
<input type="checkbox"/>	my_first_vpc	<a href="#">vpc-0009eb33272043af8</a>	Available	10.0.0.0/16	-	<a href="#">dopt-</a>				
<input type="checkbox"/>	my_second_vpc	<a href="#">vpc-08a48ce43574eee74</a>	Available	20.0.0.0/16	-	<a href="#">dopt-</a>				
<input type="checkbox"/>	my_third_vpc	<a href="#">vpc-052a44e580bfd4b92</a>	Available	30.0.0.0/16	-	<a href="#">dopt-</a>				

Select a VPC above

Create three different subnets for the following VPC'S.the three different subnets are

1) my\_first\_subnet 2) my\_second\_subnet 3) my\_third\_subnet

<input type="checkbox"/>	my_first_subnet	<a href="#">subnet-03751b9a34881d41a</a>	✔ Available	<a href="#">vpc-0009eb33272043af8   my_...</a>	10.0.0.0/24
<input type="checkbox"/>	my_second_subnet	<a href="#">subnet-00bd145f9cfd77941</a>	✔ Available	<a href="#">vpc-08a48ce43574eee74   my_...</a>	20.0.0.0/24
<input type="checkbox"/>	my_third_subnet	<a href="#">subnet-07a55b5c42555588a</a>	✔ Available	<a href="#">vpc-052a44e580bfd4b92   my_...</a>	30.0.0.0/24

Select a subnet

Create the internet gateways for the following subnets

1) my\_first\_internet 2) my\_second\_internet 3) my\_third\_internet

Internet gateways (4) <a href="#">Info</a>								Actions ▾	Create internet gateway
<input type="text" value="Search"/>							< 1 > ⚙		
<input type="checkbox"/>	Name ▾	Internet gateway ID ▾	State ▾	VPC ID ▾	Owner				
<input type="checkbox"/>	my_second_internet	<a href="#">igw-00e25c13f7317f25c</a>	⊖ Detached	-	590183844608				
<input type="checkbox"/>	my_thrid_internet	<a href="#">igw-016e6f24db50dcae7</a>	⊖ Detached	-	590183844608				
<input type="checkbox"/>	-	<a href="#">igw-06ca5d8c7c5bff6d3</a>	✔ Attached	<a href="#">vpc-0e91b92b099ab629b</a>	590183844608				
<input type="checkbox"/>	my_first_internet	<a href="#">igw-0872e4c031e96ced7</a>	⊖ Detached	-	590183844608				

Create the route tables for the following vpc's

- 1) my\_first\_route
- 2) my\_second\_route
- 3) my\_third\_route

Route tables (7) Info

Find resources by attribute or tag

Actions Create route table

Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC
-	<a href="#">rtb-09e504a1487944299</a>	-	-	Yes	<a href="#">vpc-0009eb33272043af</a>
-	<a href="#">rtb-02301a6a8d2856542</a>	-	-	Yes	<a href="#">vpc-0e91b92b099ab629</a>
my_first_route	<a href="#">rtb-03a7cb05420d2aee0</a>	-	-	No	<a href="#">vpc-0009eb33272043af</a>
-	<a href="#">rtb-0f87938cb1bc40a95</a>	-	-	Yes	<a href="#">vpc-08a48ce43574eee7</a>
-	<a href="#">rtb-085d0ff9ad5d12e39</a>	-	-	Yes	<a href="#">vpc-052a44e580bfd4b9</a>
my_second_route	<a href="#">rtb-0a4903144b5a37dad</a>	-	-	No	<a href="#">vpc-08a48ce43574eee7</a>
my_third_route	<a href="#">rtb-075f9b3880c523574</a>	-	-	No	<a href="#">vpc-052a44e580bfd4b9</a>

Select a route table

Create an EC2 instance in the same region by attaching the AMI, Key Pair, and network setting.

- 1) my\_first\_inst
- 2) my\_second\_inst
- 2) my\_third\_instance

Instances (3) Info

Find Instance by attribute or tag (case-sensitive)

All states

Instance state = running X Clear filters

Connect Instance state Actions Launch instances

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public
my_third_inst	<a href="#">i-058420918f491b80d</a>	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1c	-
my_second_inst	<a href="#">i-0eb46dc6e5fe64d78</a>	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1b	-
my_first_inst	<a href="#">i-0911a664b37c49c05</a>	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1a	-

Select an instance

Create an EC2 instance in the same region by attaching the AMI, Key Pair, and network setting.

- Add the Http in the inbound rules to the security groups



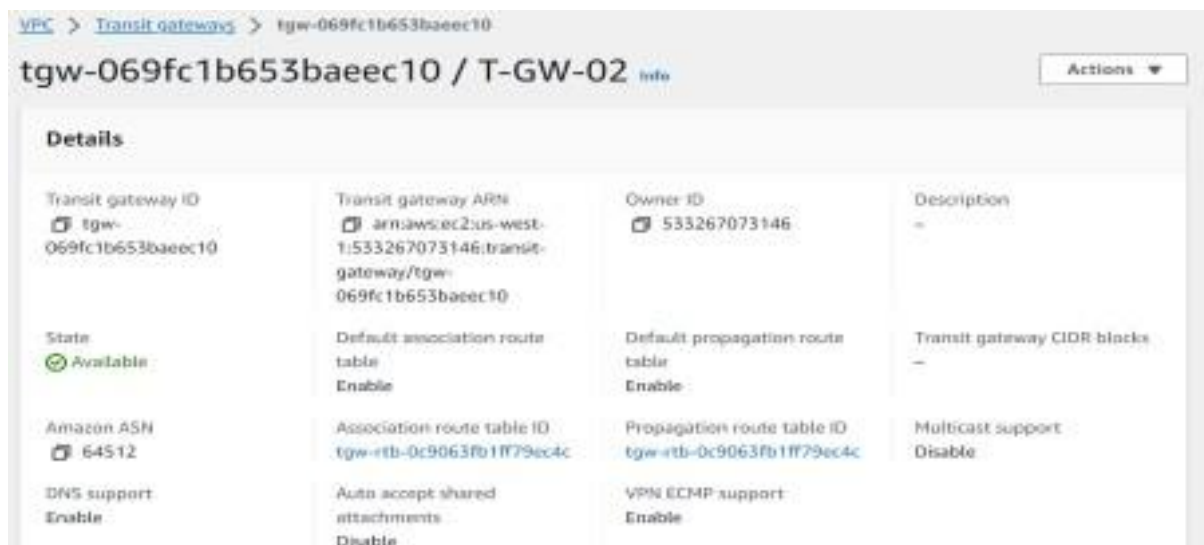
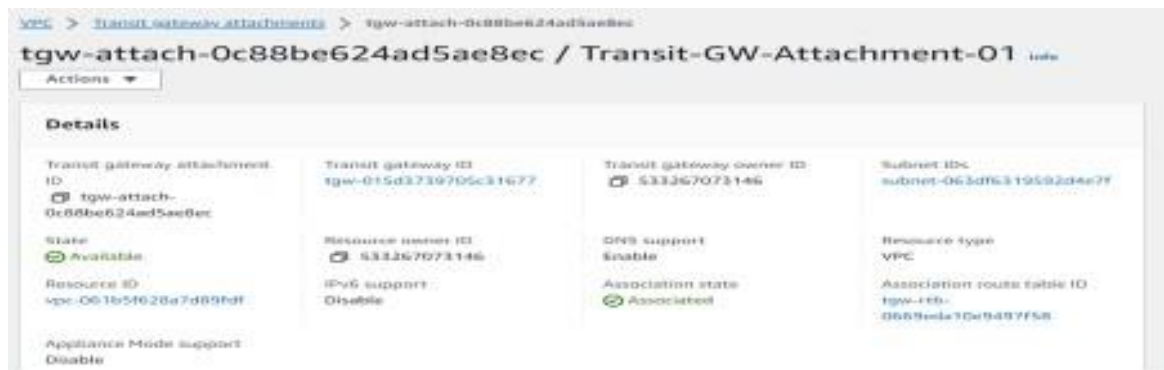
- Launch the instance in the web and do the following task
  - 1) Sudo -i to connect to the root user,
  - 2) Yum update -y to update application packages,
  - 3) Yum install nginx -y to install the nginx (proxy server) in amazon linux distribution,
  - 4) Then remove index.html by moving into the default directory cd /usr/share/nginx/html and create a html file by index.html with a certain data,
  - 5) Systemctl status nginx to check the nginx is active or dead,
  - 6) Curl private IP:80 to see the content of respective IP.

```

HT m0jto dnl
[root@ip-10.0.0-58 ~]# cat /etc/passwd
[root@ip-10.0.0-58 ~]# yum update -y
[root@ip-10.0.0-58 ~]# yum install nginx -y
[root@ip-10.0.0-58 ~]# systemctl status nginx
[root@ip-10.0.0-58 ~]# curl http://10.0.0.58

```

- Now create a transmit gateway
- Attach the transit gateway with the VPC in the given region



- Now goto the route tables in the VPC and click on edit route add the Transit gateway and click on save changes.



This is the first instance:

```
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-0911a664b37c49c05&osUser=ec2-user&region=us-east-1&sshPort=22#/  
aws Services Search [Alt+S] N. Virginia sai srin  
Verifying : libunwind-1.4.0-5.amzn2023.0.2.x86_64 4/7  
Verifying : nginx-mimetypes-2.1.49-3.amzn2023.0.3.noarch 5/7  
Verifying : generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch 6/7  
Verifying : nginx-filessystem-1:1.24.0-1.amzn2023.0.2.noarch 7/7  
Installed:  
generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch gperftools-libs-2.9.1-1.amzn2023.0.3.x86_64 libunwind-1.4.0-5.amzn2023.0.2.x86_64  
nginx-1:1.24.0-1.amzn2023.0.2.x86_64 nginx-core-1:1.24.0-1.amzn2023.0.2.x86_64 nginx-filessystem-1:1.24.0-1.amzn2023.0.2.noarch  
nginx-mimetypes-2.1.49-3.amzn2023.0.3.noarch  
Complete!  
[root@ip-10-0-0-111 ~]# cd /user/share/nginx  
-bash: cd: /user/share/nginx: No such file or directory  
[root@ip-10-0-0-111 ~]# cd /user/share/nginx/html  
-bash: cd: /user/share/nginx/html: No such file or directory  
[root@ip-10-0-0-111 ~]# ls  
[root@ip-10-0-0-111 ~]# cd /usr/share/nginx/html  
[root@ip-10-0-0-111 html]# ls  
404.html 50x.html icons index.html nginx-logo.png poweredby.png  
[root@ip-10-0-0-111 html]# rm index.html  
rm: remove regular file 'index.html'? yes  
[root@ip-10-0-0-111 html]# vi index.html  
[root@ip-10-0-0-111 html]# systemctl restart nginx  
[root@ip-10-0-0-111 html]# curl 54.80.170.131:80  
this is my instance-1  
[root@ip-10-0-0-111 html]# curl 30.0.0.193:80  
hello this is sriram  
[root@ip-10-0-0-111 html]#  
i-0911a664b37c49c05 (my_first_inst)  
PublicIPs: 54.80.170.131 PrivateIPs: 10.0.0.111
```

This is the second instance:

```
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-1&connType=standard&instanceId=i-0eb46dc6e5fe64d78&osUser=ec2-user&sshPort=22#/  
aws Services Search [Alt+S] N. Virginia sai srin  
Verifying : libunwind-1.4.0-5.amzn2023.0.2.x86_64 4/7  
Verifying : nginx-mimetypes-2.1.49-3.amzn2023.0.3.noarch 5/7  
Verifying : generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch 6/7  
Verifying : nginx-filessystem-1:1.24.0-1.amzn2023.0.2.noarch 7/7  
Installed:  
generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch gperftools-libs-2.9.1-1.amzn2023.0.3.x86_64 libunwind-1.4.0-5.amzn2023.0.2.x86_64  
nginx-1:1.24.0-1.amzn2023.0.2.x86_64 nginx-core-1:1.24.0-1.amzn2023.0.2.x86_64 nginx-filessystem-1:1.24.0-1.amzn2023.0.2.noarch  
nginx-mimetypes-2.1.49-3.amzn2023.0.3.noarch  
Complete!  
[root@ip-20-0-0-188 ~]# cd /usr/share/nginx  
[root@ip-20-0-0-188 nginx]# ls  
html modules  
[root@ip-20-0-0-188 nginx]# cd /usr/share/nginx/html  
[root@ip-20-0-0-188 html]# ls  
404.html 50x.html icons index.html nginx-logo.png poweredby.png  
[root@ip-20-0-0-188 html]# rm index.html  
rm: remove regular file 'index.html'? yes  
[root@ip-20-0-0-188 html]# vi index.html  
[root@ip-20-0-0-188 html]# systemctl restart nginx  
-bash: systemctl: command not found  
[root@ip-20-0-0-188 html]# systemctl restart nginx  
[root@ip-20-0-0-188 html]# curl 18.204.247.235  
this is my instance  
[root@ip-20-0-0-188 html]# curl 18.204.247.235:80  
this is my instance  
[root@ip-20-0-0-188 html]#  
i-0eb46dc6e5fe64d78 (my_second_inst)  
PublicIPs: 18.204.247.235 PrivateIPs: 20.0.0.188
```

us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-1&connType=standard&instanceId=i-058420918f491b80d&osUser=ec2-user&sshPort=22#

aws Services Search [Alt+S] N. Virginia sai sriram

Installed:

generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch	gperftools-libs-2.9.1-1.amzn2023.0.3.x86_64	libunwind-1.4.0-5.amzn2023.0.2.x86_64
nginx-1:1.24.0-1.amzn2023.0.2.x86_64	nginx-core-1:1.24.0-1.amzn2023.0.2.x86_64	nginx-filesystem-1:1.24.0-1.amzn2023.0.2.noarch
nginx-mimetypes-2.1.49-3.amzn2023.0.3.noarch		

Complete!

```
[root@ip-30-0-0-193 ~]# cd /user/share/nginx
-bash: cd /user/share/nginx: No such file or directory
[root@ip-30-0-0-193 ~]# cd /usr/share/nginx
-bash: cd /usr/share/nginx: No such file or directory
[root@ip-30-0-0-193 ~]# cd /usr/share/nginx/html
-bash: cd /usr/share/nginx/html: No such file or directory
[root@ip-30-0-0-193 ~]# cd /usr/share/nginx/html
-bash: cd /usr/share/nginx/html: No such file or directory
[root@ip-30-0-0-193 ~]# cd /usr/share/nginx/html
[root@ip-30-0-0-193 html]# ls
-bash: ls: command not found
[root@ip-30-0-0-193 html]# ls
404.html 50x.html icons index.html nginx-logo.png poweredby.png
[root@ip-30-0-0-193 html]# rm index.html
rm: remove regular file 'index.html'? yes
[root@ip-30-0-0-193 html]# vi index.html
[root@ip-30-0-0-193 html]# systemctl restart nginx
[root@ip-30-0-0-193 html]# curl 3.87.0.160
hello this is sriram
[root@ip-30-0-0-193 html]# curl 3.87.0.160:80
hello this is sriram
[root@ip-30-0-0-193 html]#
```

i-058420918f491b80d (my\_third\_inst)

PublicIPs: 3.87.0.160 PrivateIPs: 30.0.0.193

