ASSIGNMENT-02

TRANSIT GATEWAY

NAME: B.Pavani

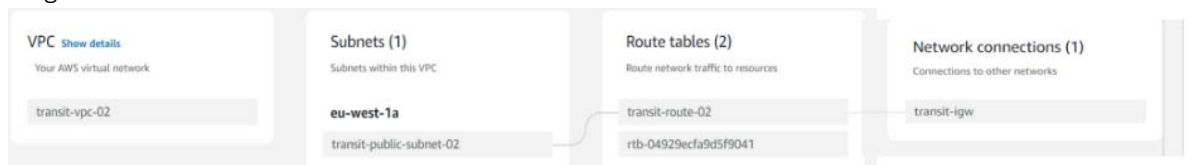MAIL : bingipavani343@gmail.com

MBL : 7569217017

TOPIC : Transit gateway communication in multiple regions

➢ Create three VPC's in three different regions
Region-01: Frankfurt
Region-02: Ireland
Region-03: paris
Connect the VPC's to their respective subnets,internet gateway,and route tables.

➢ Region-01: Frankfurt

➢ Region-02: Ireland

➢ Region-03: paris

➢ Create ec2 instances in each region. Name the instances,AMI,keypair,subnet,and edit security inbound rules by adding HTTP and launch the instances.
➢ Connect to web in the 1st instance i.e Frankfurt enter the following commands

- sudo-i to change into root user
- yum update-y to update the application packages
- yum install nginx-y to install nginx
- cd /usr/share/nginx/html nginx default

- ls to list the file
- rm index.html to remove the html file
- vi index.html to create file
- enter the data and save the file
- systemctl status nginx to check the status
- systemctl start nginx to start nginx

```
        _/ _/
     _/m/'
[ec2-user@ip-192-0-3-148 ~]$ sudo -i
[root@ip-192-0-3-148 ~]# yum update -y
Last metadata expiration check: 0:23:57 ago on Fri Feb 23 03:31:46 2024.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-192-0-3-148 ~]# yum install nginx -y
Last metadata expiration check: 0:24:13 ago on Fri Feb 23 03:31:46 2024.
Dependencies resolved.
================================================================================
```

```
Complete!
[root@ip-192-0-3-148 ~]# cd /usr/share/nginx/html
[root@ip-192-0-3-148 html]# ls
404.html  50x.html  icons  index.html  nginx-logo.png  poweredby.png
[root@ip-192-0-3-148 html]# rm index.html -y
rm: invalid option -- 'y'
Try 'rm --help' for more information.
[root@ip-192-0-3-148 html]# rm index.html
rm: remove regular file 'index.html'? yes
[root@ip-192-0-3-148 html]# vi index.html
[root@ip-192-0-3-148 html]# systemctl status nginx
o nginx.service - The nginx HTTP and reverse proxy server
    Loaded: loaded (/usr/lib/systemd/system/nginx.service; disabled; preset: disabled)
    Active: inactive (dead)
[root@ip-192-0-3-148 html]# systemctl start nginx
```

> copy the public ip address and paste it in the web by adding port range :80 to check the connectivity

```
←  →  C   ⚠ Not secure   18.198.197.82
```

abcdefghijklmnopqrstuvwxyz

> create transit gateway in each region and attach the transit gateway of their respective regions
> go to routes>>edit routes>>copy the VPC id of the same region i.e Frankfurt >>attach transit gateway
> edit routes>>copy the VPC id of the 2nd region i.e Ireland >>attach transit gateway
> edit routes>>copy VPC id of 3rd region i.e paris>> attach transit gateway

Destination	Target	Status	Propagated	
192.0.0.0/16	local ▼	⊘ Active	No	
	🔍 local ✕			
🔍 195.0.0.0/16 ✕	Transit Gateway ▼	⊘ Active	No	Remove
	🔍 tgw-0b731c5e3d81f982f ✕			
🔍 198.0.0.0/16 ✕	Transit Gateway ▼	⊘ Active	No	Remove
	🔍 tgw-0b731c5e3d81f982f ✕			

> Establish the cross connection between transit gateways repeat the same process in the rest of VPC's in other regions
> Give Frankfurt and paris regions VPC id's in Ireland region

Destination	Target		Status	Propagated	
195.0.0.0/16	local	▼	⊘ Active	No	
	Q local	✕			
Q 192.0.0.0/16 ✕	Transit Gateway	▼	⊘ Active	No	Remove
	Q tgw-00a8f56b9c906da1c	✕			
Q 198.0.0.0/16 ✕	Transit Gateway	▼	⊘ Active	No	Remove
	Q tgw-00a8f56b9c906da1c	✕			

➢ Give Frankfurt and Ireland VPC id's in paris region

Destination	Target		Status	Propagated	
198.0.0.0/16	local	▼	⊘ Active	No	
	Q local	✕			
Q 192.0.0.0/16 ✕	Transit Gateway	▼	⊘ Active	No	Remove
	Q tgw-0a74ed5d9f205902e	✕			
Q 195.0.0.0/16 ✕	Transit Gateway	▼	⊘ Active	No	Remove
	Q tgw-0a74ed5d9f205902e	✕			

➢ Create transit gateway attachment>>attachment type>>peering>>my account>>region>>transit gateway accepter[Ireland]>>create transit gateway attachment.

VPC > Transit gateway attachments > tgw-attach-0b2eb0801155ee94e

tgw-attach-0b2eb0801155ee94e / transit-gateway-attachment-region1n2 Info

Actions ▼

Details

Transit gateway attachment ID	Requester ID	Acceptor ID	State
tgw-attach-0b2eb0801155ee94e	tgw-0b731c5e3d81f982f	tgw-00a8f56b9c906da1c	⊘ Available
Requester region	Acceptor region	Resource type	Requester owner ID
Frankfurt (eu-central-1)	Ireland (eu-west-1)	Peering	905418408977
Acceptor owner ID	Association route table ID	Association state	Dynamic routing
905418408977	tgw-rtb-0fd1eaeb4ff242971	⊘ Associated	⊖ Disabled

➢ Accept the request that is sent from Frankfurt to Ireland.
➢ Repeat the process from Frankfurt to paris.

VPC > Transit gateway attachments > tgw-attach-0a21080e2f902f97d

tgw-attach-0a21080e2f902f97d / attachment-1n3 Info

Actions ▼

Details

Transit gateway attachment ID	Requester ID	Acceptor ID	State
tgw-attach-0a21080e2f902f97d	tgw-0b731c5e3d81f982f	tgw-0a74ed5d9f205902e	⊘ Available
Requester region	Acceptor region	Resource type	Requester owner ID
Frankfurt (eu-central-1)	Paris (eu-west-3)	Peering	905418408977
Acceptor owner ID	Association route table ID	Association state	Dynamic routing
905418408977	tgw-rtb-0fd1eaeb4ff242971	⊘ Associated	⊖ Disabled

➢ To establish peering connection goto transit gateway routes>>routes>>create static route>>add CIDR of 2nd VPC i.e Ireland

VPC > Transit gateway route tables > tgw-rtb-0fd1eaeb4ff242971

tgw-rtb-0fd1eaeb4ff242971 Info

Actions ▼

Details

Transit gateway route table ID	Transit gateway ID	State	Default association route table
tgw-rtb-0fd1eaeb4ff242971	tgw-0b731c5e3d81f982f	⊘ Available	Yes
Default propagation route table			
Yes			

➢ Goto 2nd transit gateway routes>>edit routes>>create static route>>add CIDR of 1st VPC i.e Frankfurt to establish the cross connection.

tgw-rtb-03e6bf89d8bf90e38 Info

Actions ▼

Details

Transit gateway route table ID	Transit gateway ID	State	Default association route table
tgw-rtb-03e6bf89d8bf90e38	tgw-00a8f56b9c906da1c	✓ Available	Yes

Default propagation route table
Yes

➤ Repeat the process for 1ˢᵗ and 3ʳᵈ region i.e Frankfurt to paris.

tgw-attach-0a21080e2f902f97d / attachment-1n3 Info

Actions ▼

Details

Transit gateway attachment ID	Requester ID	Acceptor ID	State
tgw-attach-0a21080e2f902f97d	tgw-0b731c5e3d81f982f	tgw-0a74ed5d9f205902e	✓ Available
Requester region	Acceptor region	Resource type	Requester owner ID
Frankfurt (eu-central-1)	Paris (eu-west-3)	Peering	905418408977
Acceptor owner ID	Association route table ID	Association state	Dynamic routing
905418408977	tgw-rtb-0fd1eaeb4ff242971	✓ Associated	⊖ Disabled

tgw-rtb-0862fc582144bff62 Info

Actions ▼

Details

Transit gateway route table ID	Transit gateway ID	State	Default association route table
tgw-rtb-0862fc582144bff62	tgw-0a74ed5d9f205902e	✓ Available	Yes

Default propagation route table
Yes

➤ Goto other region i.e ireland or paris EC2 instance copy the private ip address of Frankfurt and paste it on the ec2 web of Ireland or paris and command curl ip address and port range :80 to check the trasit gateway communication between the rgions.

```
           #_
    ~\_   ####_           Amazon Linux 2023
   ~~  \_#####\
   ~~      \###|
   ~~       \#/  ___      https://aws.amazon.com/linux/amazon-linux-2023
    ~~       V~'  '->
     ~~~        /
       ~~._.   _/
          _/ _/
        _/m/'
Last login: Fri Feb 23 04:04:54 2024 from 18.202.216.53
[ec2-user@ip-195-0-3-3 ~]$ sudo -i
[root@ip-195-0-3-3 ~]# curl 192.0.3.148:80
abcdefghijklmnopqrstuvwxyz
[root@ip-195-0-3-3 ~]#
```