Establish the peering connection across accounts in AWS Console

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1. Introduction

This document describes how to establish the connection from one account to another account in AWS.

2. Pre-requisites

- Appropriate Access/Credentials to login to the AWS Console.
- AWS Service Role for VPC Transit Gateway

3. Summary

To connect two VPCs in the Ohio region (Account A) and one VPC in the California region (Account B) using AWS Transit Gateway, follow these steps: First, in Account A, create the two VPCs in the Ohio region and a Transit Gateway. Attach both Ohio VPCs to the Transit Gateway. Then, in Account B, create the VPC in the California region and another Transit Gateway. Establish a peering connection between the Transit Gateways in Account A and Account B. Finally, update the route tables in each VPC to route traffic through the Transit Gateway attachments and the peering connection, enabling communication between the VPCs across accounts and regions. This setup allows seamless inter-region and cross-account connectivity.

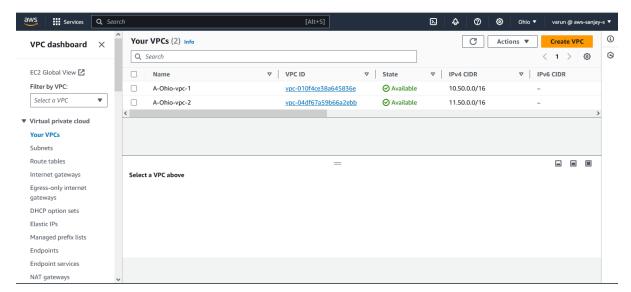
VPCs

Amazon Virtual Private Cloud (VPC) allows users to provision a logically isolated section of the AWS cloud where they can launch AWS resources in a virtual network they define. Users have complete control over their virtual networking environment, including selection of IP address ranges, creation of subnets, and configuration of route tables and network gateways.

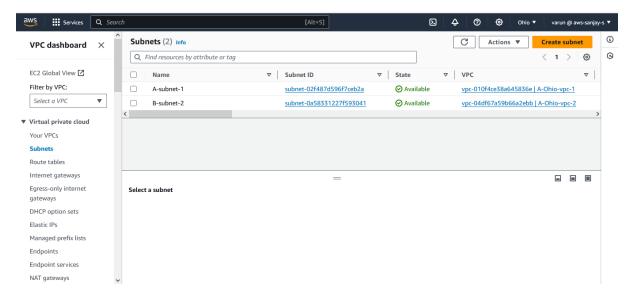
4. Procedure

4.1 Set up two VPCs and their associated components on Account A

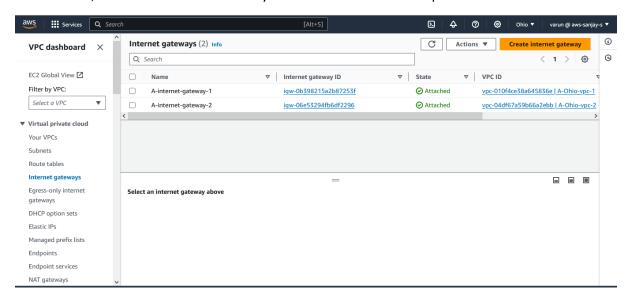
- Create two VPCs in Account A with the following specifications:
 - 1. VPC named "A-ohio-vpc-1" with an IPv4 CIDR address of 10.50.0.0/16.
 - 2. VPC named "A-ohio-vpc-2" with an IPv4 CIDR address of 11.50.0.0/16.



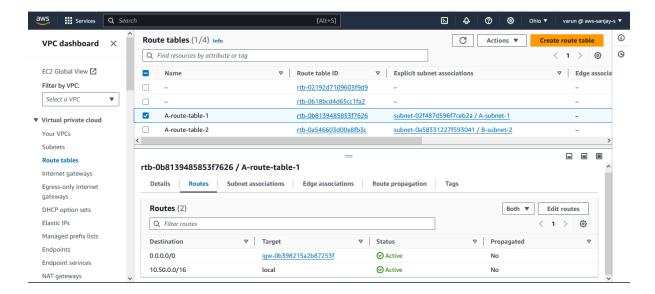
 Similarly, create two subnets associated with the two VPCs and edit each subnet to enable public IP assigned.



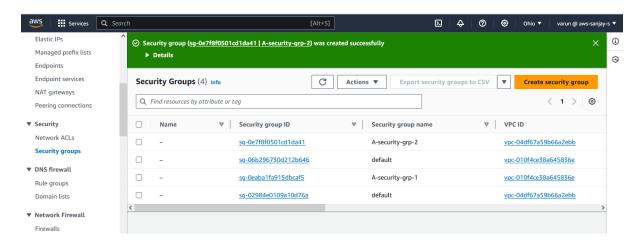
• Next, create two Internet Gateways and attach each to the respective VPC.



• Create two route tables and add explicit subnets associated with each subnet then edit both routing tables by adding the target group as the internet gateway of each VPC.

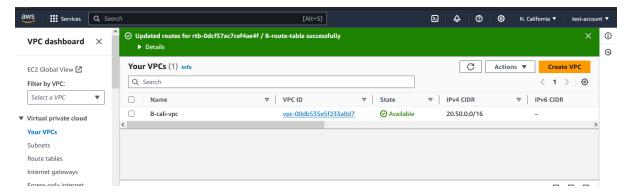


 Create two security groups for each VPC to manage inbound and outbound traffic effectively.

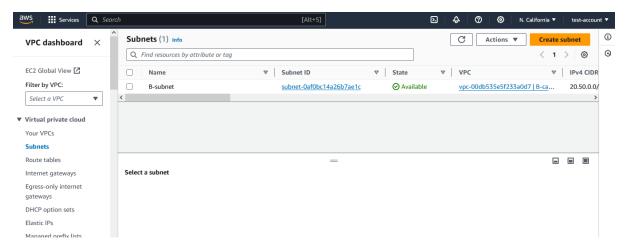


4.2 Setup a VPC and their associated components on Account B

- Create a VPCs in Account B with the following specifications:
 - 1. VPC named "A-ohio-vpc-1" with an IPv4 CIDR address of 20.50.0.0/16.



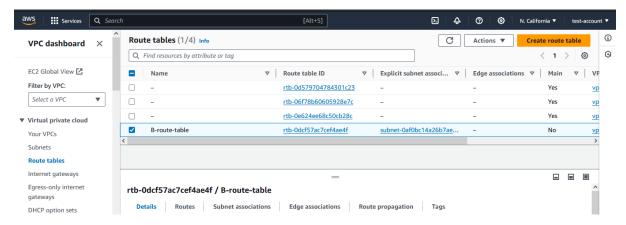
• Similarly, create subnets associated with those VPCs and edit each subnet to enable the assignment of public IP addresses.



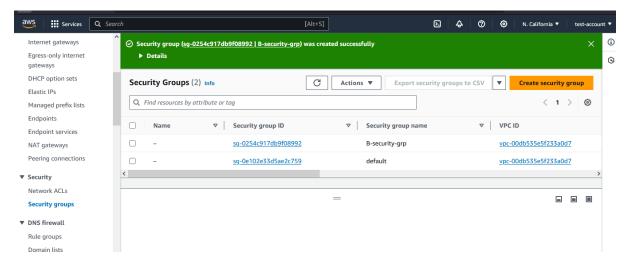
Next, create an Internet Gateway and attach it to the VPC.



• Create a route table, add explicit subnets associated with the subnet, and edit the routing table by adding the target group as the internet gateway of the VPC.



Create a security group for the VPC to manage inbound and outbound traffic effectively.

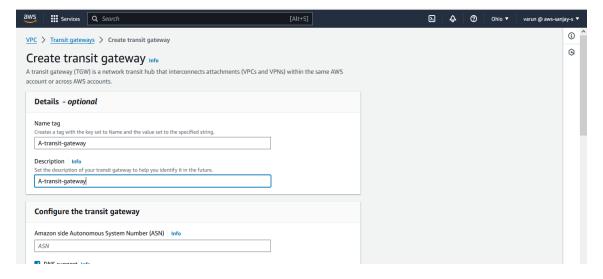


Transit Gateway

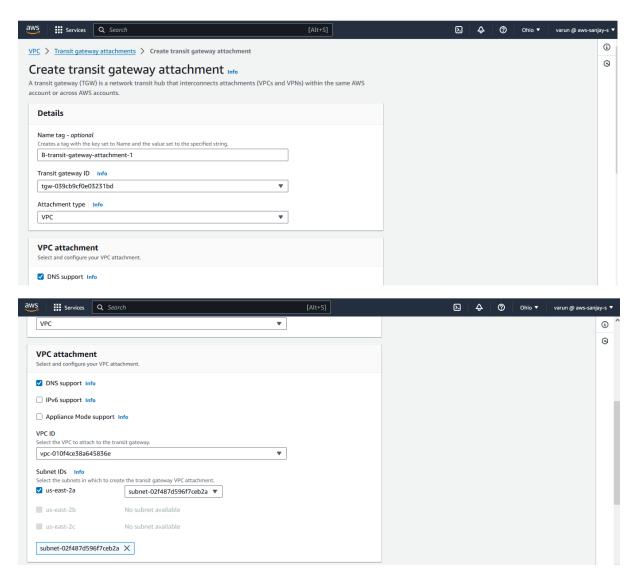
AWS Transit Gateway is a service that enables customers to connect their VPCs and their onpremises networks to a single gateway. It acts as a hub that controls how traffic is routed among all the connected networks, simplifying network architecture, and reducing operational costs. By using Transit Gateway, users can easily and securely scale their network connections across thousands of VPCs, AWS accounts, and on-premises environments.

4.3 Create a transit gateway and its attachments on Account A

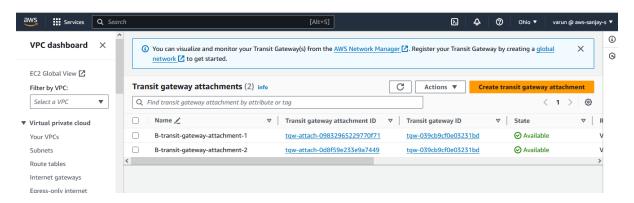
Create a transit gateway named "A-transit-gateway" with default settings.



Create a transit gateway attachment with the attachment type "VPC" to attach the first VPC
ID of CIDR IP address 10.50.0.0/16.

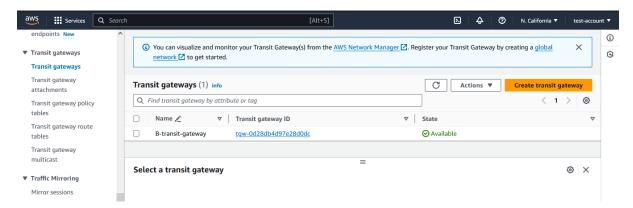


• Similarly, attach another VPC (11.50.0.0/16) and wait a few minutes for it to reach the "Available" state.

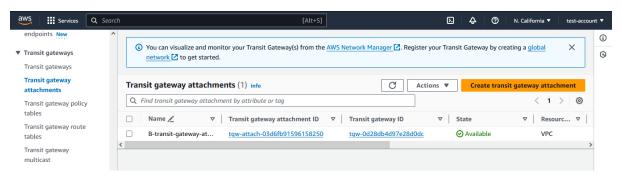


4.4 Create a transit gateway and its attachment on Account B

• Create a transit gateway named "B-transit-gateway" with default settings.

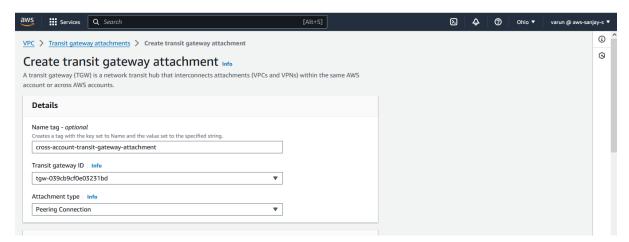


 Create a transit gateway attachment with the attachment type "VPC" to attach the VPC ID of CIDR IP address 20.50.0.0/16.

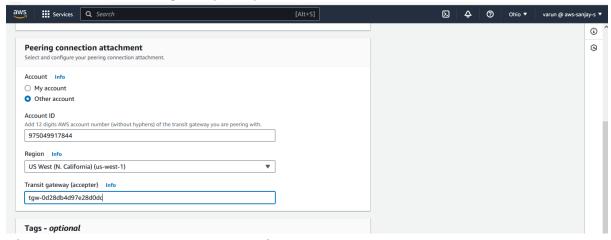


4.5 Create transit gateway attachment for peering connection.

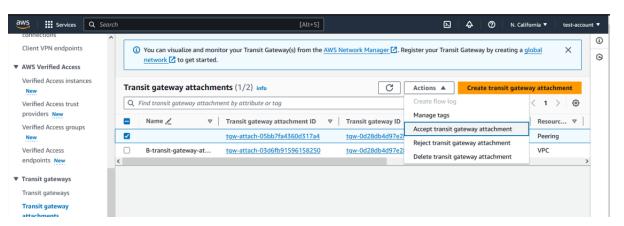
• To establish the connection between the two accounts, create a transit gateway attachment with the attachment type set to "Peering connection" on Account A.



 Here, we need to provide the acceptor account number (in our case, Account B), the region (California), and the transit gateway (acceptor ID).

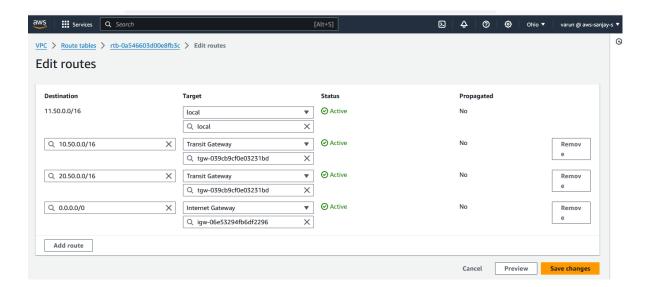


 After creating a transit gateway attachment for the peering connection, we need to accept the transit gateway attachment from the acceptor end (Account B) and wait for both sides to reach the available status.

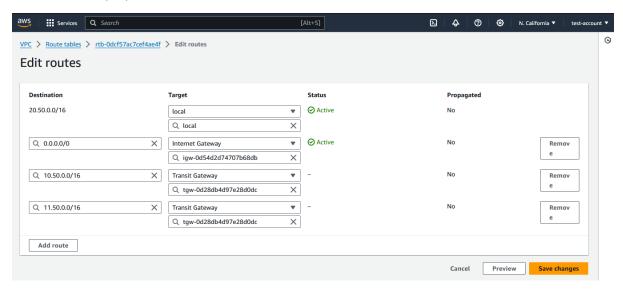


4.6 Update the route table of the VPC in both accounts

- On Account A, update the VPC's route table by adding the transit gateway as the target, along with its ID. Include the destination VPC of the same account (10.50.0.0/16), and the CIDR IP address of another VPC from Account B in the California region (20.50.0.0/16).
- Note: similarly update another VPC's route table of same account.

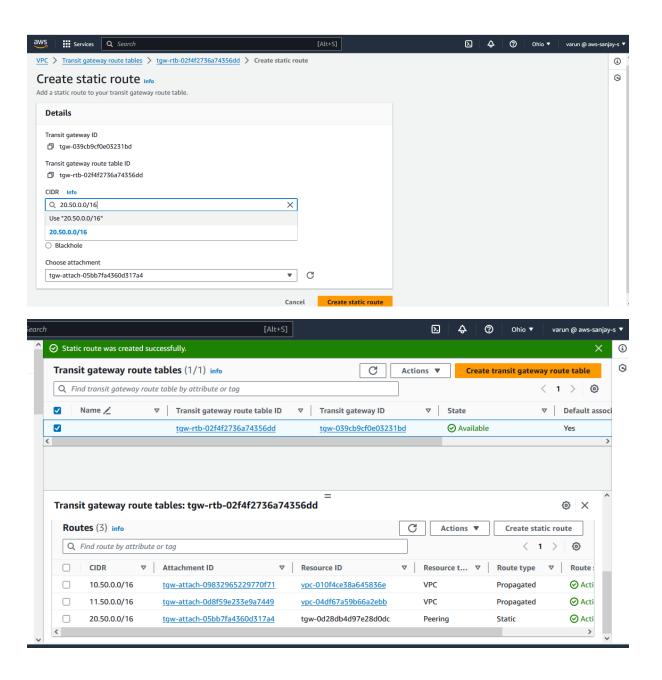


• Similarly, update the route table of the VPC in the other account (Account B).

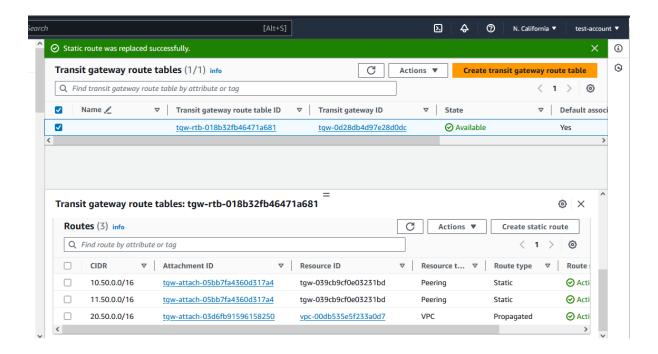


4.7 Establish a static route within the transit gateway route table for both accounts

 Create a static route in the transit gateway's route table on Account A. Add the necessary VPC's CIDR IP address (20.50.0.0/16) from another account (Account B) and select the "peering attachment" option for routing.

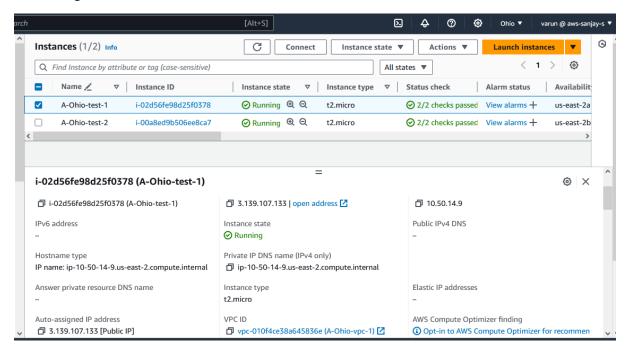


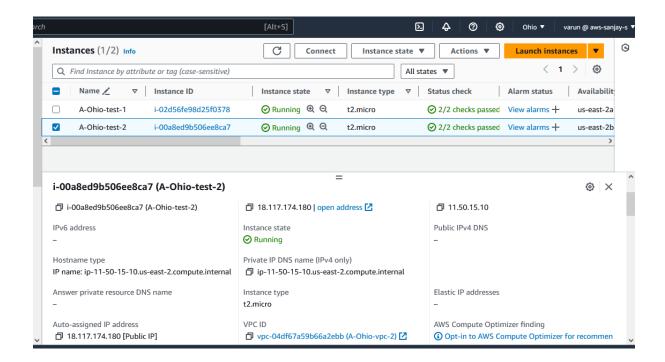
• Similarly, create two static routes within another account (Account B) by specifying the required CIDR IP addresses of the VPCs (10.50.0.0/16 & 11.50.0.0/16) from Account A. Select the "peering attachment" option for routing.



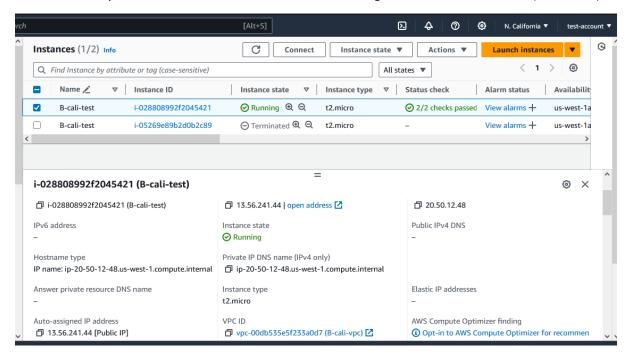
5. Validation

 To test connectivity, we'll launch two instances, each in a different VPC within the Ohio region on Account A.



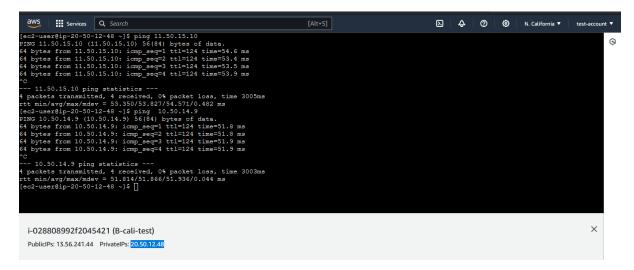


• Similarly, create another instance in the California region on the other account (Account B).



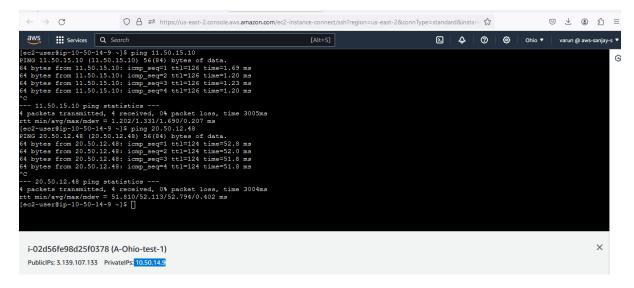
 Now, from Account B in the California region, we can ping both instances located in different VPCs on Account A.

(Instance name: B-cali-test with private IP: 20.50.12.48 of Account B)



• Similarly, from Account A, we can ping both instances: one belonging to another account and the other belonging to the same account but in a different VPC.

(Instance name: A-Ohio-test-1 with private IP: 10.50.14.9 of Account A)



(Instance name: A-Ohio-test-2 with private IP: 11.50.15.10 of Account A)

References

Reference	Location
https://docs.aws.amazon.com/vpc/latest/tgw/what-	AWS Official Website
is-transit-gateway.html	

Glossary, Abbreviations and Acronyms

Term	Definition
VPC	Virtual Private Cloud
AWS	Amazon Web services
CIDR	Classless Inter-Domain Routing