PROJECT

Project Title : Multi-Region VPC Connectivity Using AWS Transit Gateway

Date : 20/10/2025

Name of the person : Gadi Thirupathi

Name of the project : Multi-Region VPC Connectivity Using AWS Transit Gateway

Objective of the project : To create a scalable, secure, and highly available network architecture that connects VPCs across different AWS regions using Transit Gateway inter-region peering.

Steps Done in the project :

step1:

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Create 2 VPCs (e.g., `VPC-A1`, `VPC-A2` in us-east-1 and ap-south-1)

Each with:

- CIDR: `/16` (e.g., `10.3.0.0/16`, `10.4.0.0/16`, etc.)
- 2 Subnets: In each vpcs
- Internet Gateway attached
- Route tables configured

step2:

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Launch Ec2 instances on VPC-A1 and VPC-A2 give the name tag Machine01 and Machine02

step3:

- Login in to the Ec2 intances
- Use the command #ping<pvip>
- we are unble to see the connection between two machines.

step4:

- create the transit gateway and transit attachments in the both regions
- create vpc transit attachment and peer attachment on both regions
- After creating configure in the route tables of VCPCs.
- configure the transit route table in both regions with remote vpc cidr ip's

Output screenshots :

creating of two vpcs and machines screenshots:

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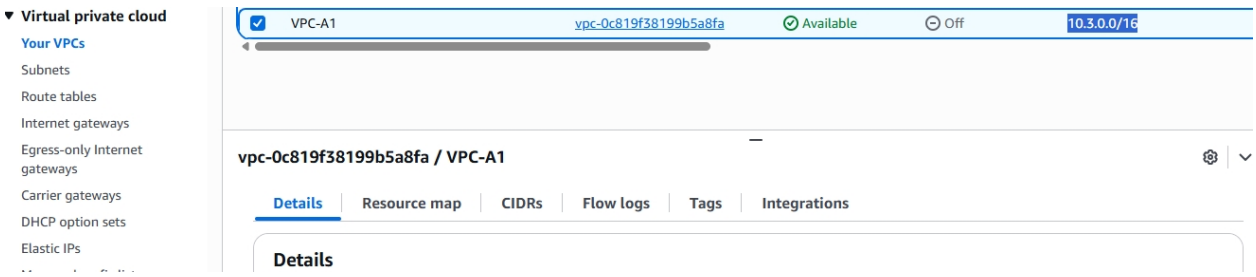
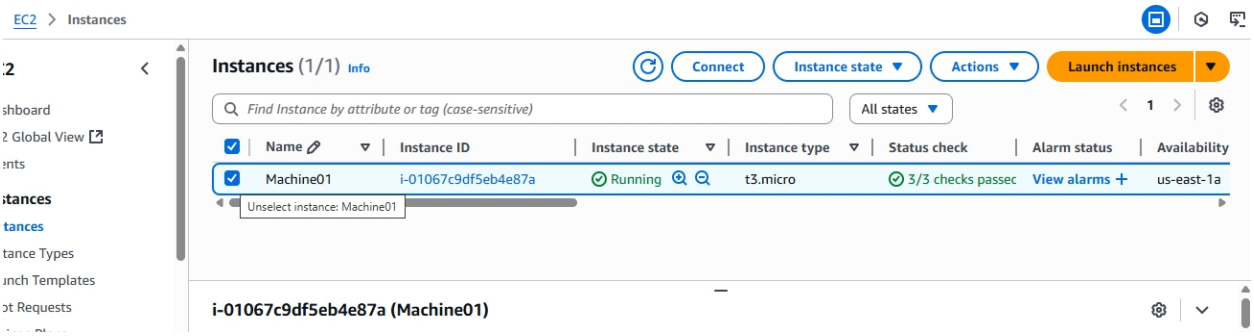
VPC-A1 And Ec2intance machine on region-01 us-east-1:





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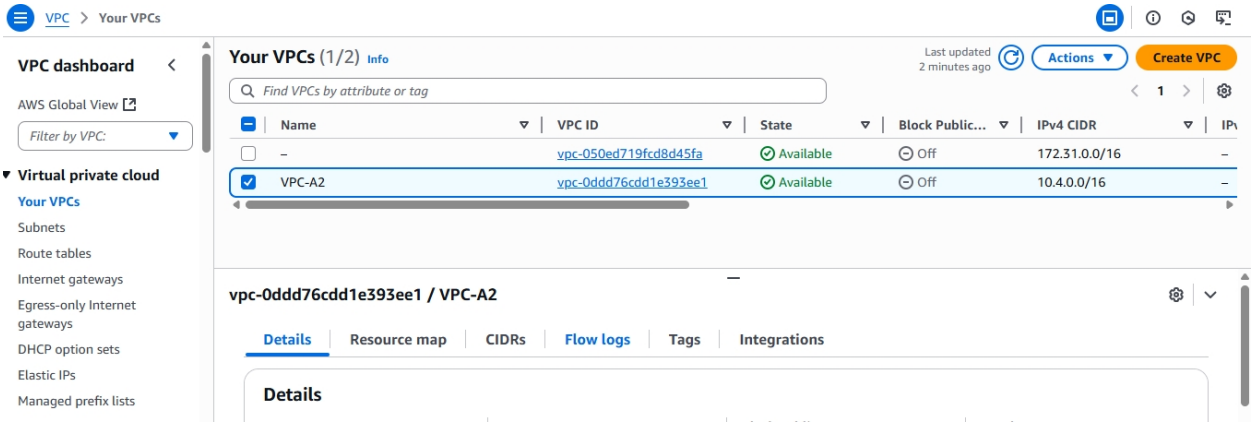
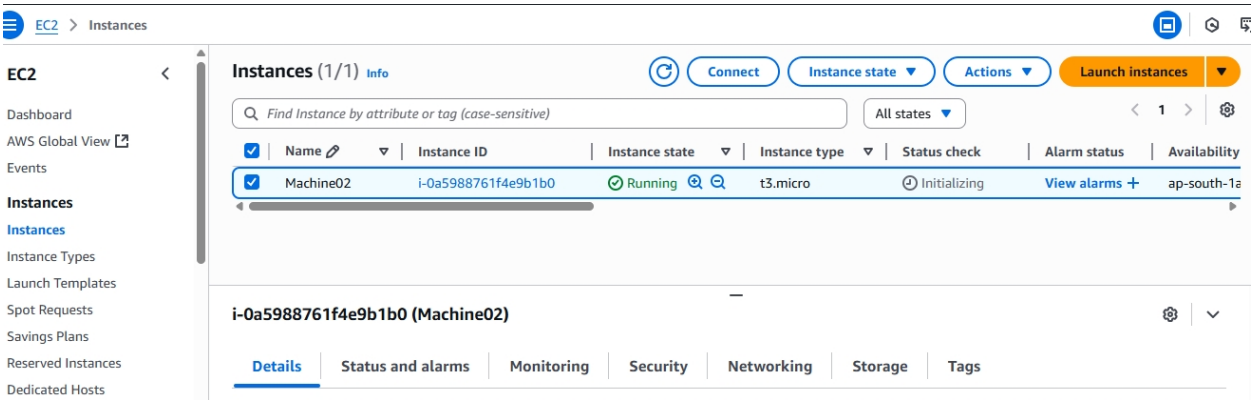
VPC-A2 And Ec2 machine on region02 ap-south-1:





Checking the connection between two machines with their private ip's:

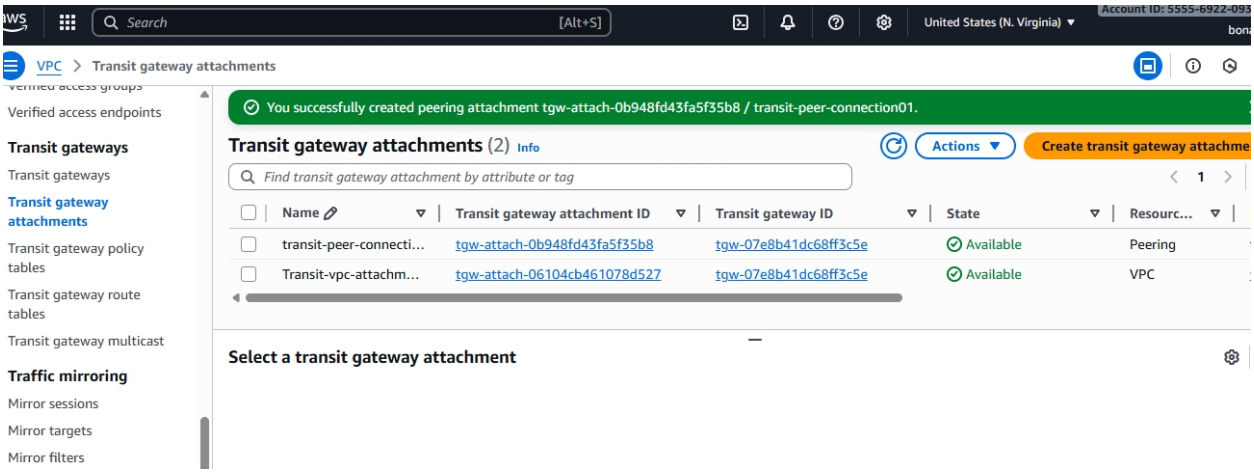
machine01:

machine02:

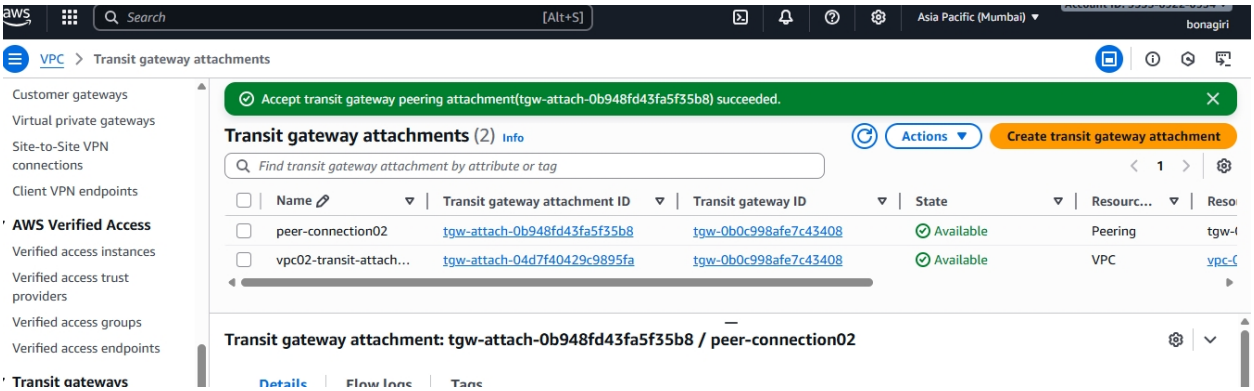
Note: Here we didn't have connection between two machines.

Create the transit gateway and vpc,peer transit attachments:

Region01:

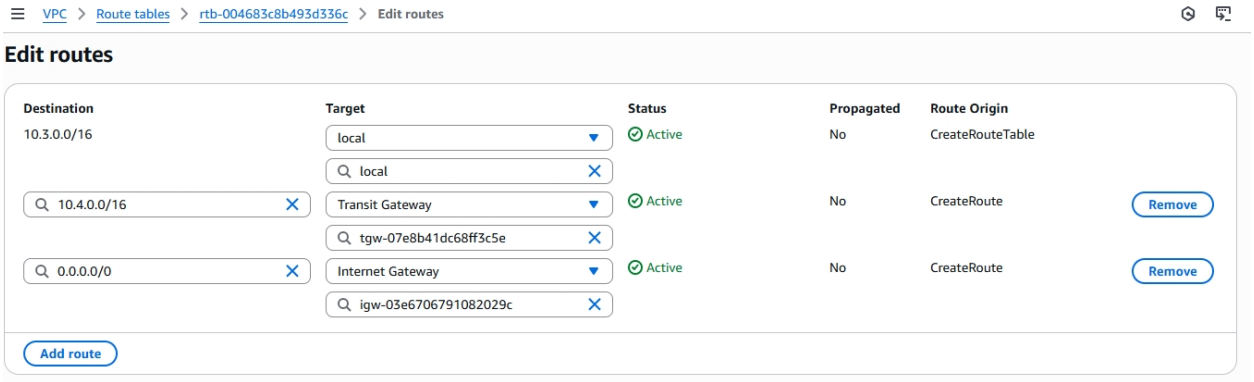


Region02:

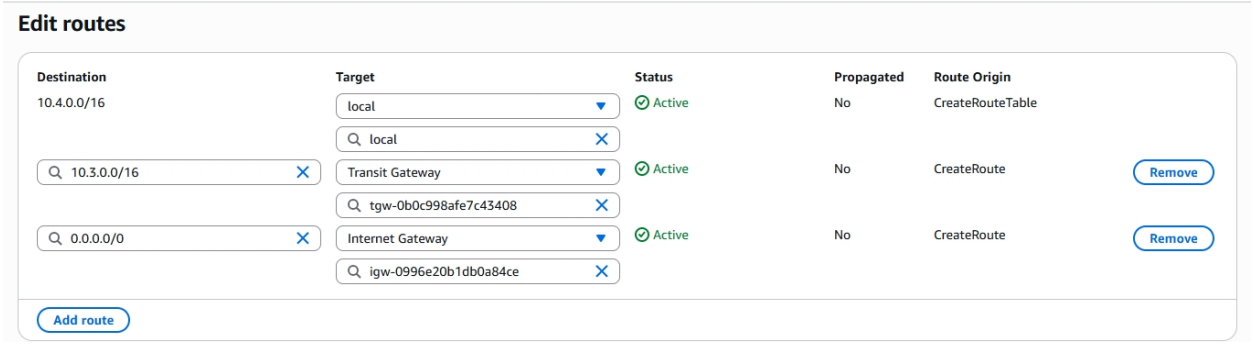


Configure the route tables in the both regions:

Region01:

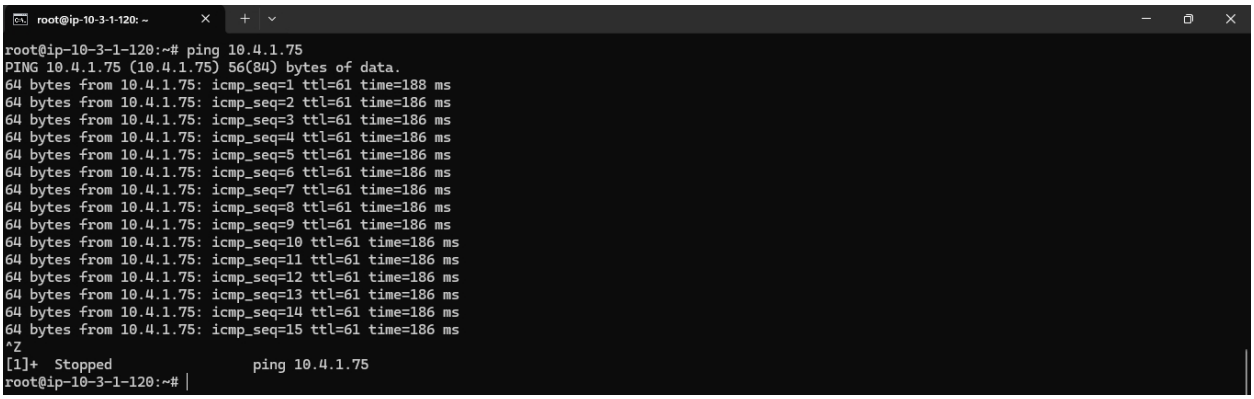


Region02:

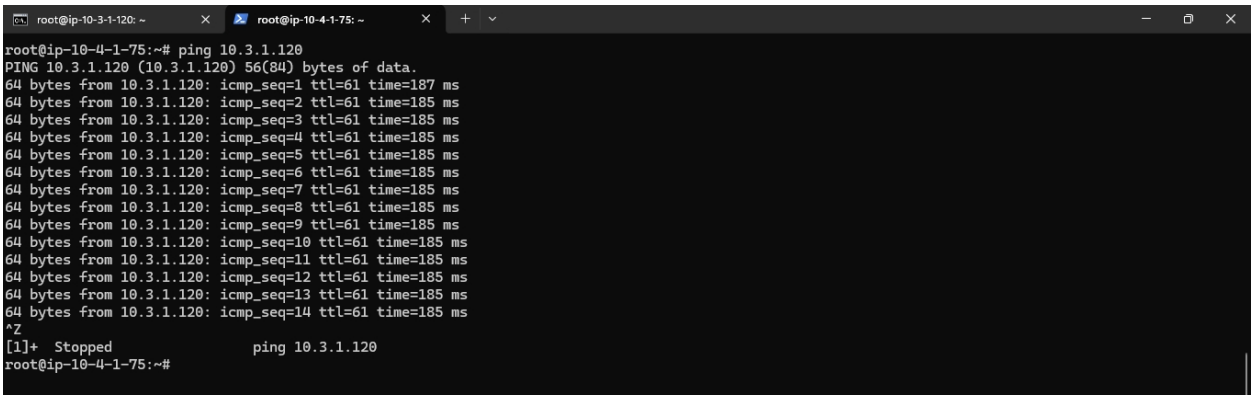


Here we can have the connection between two vpcs in different regions :

machine01 :



machine02 :



Tools ans services used :

- AWS VPC
- AWS EC2
- AWS TRANSIT GATEWAY AND ATTACHMENTS
- COMMAND PROMT

Conclusion:

This project successfully demonstrated how AWS Transit Gateway (TGW) can be used to build a scalable, secure, and efficient multi-region network architecture. By deploying Transit Gateways in different AWS regions and creating inter-region peering attachments, we were able to establish seamless connectivity between multiple VPCs across geographically separated locations.