

CREATE THREE VPCs IN THREE DIFFERENT REGIONS AND CONNECT THE VPCs 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 have defined. This virtual network resembles a traditional network that you would operate in your own data centre 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 VPCs and on premises networks. As your cloud infrastructure expands globally, inter region peering connects transit gateways together using the AWS global infrastructure.

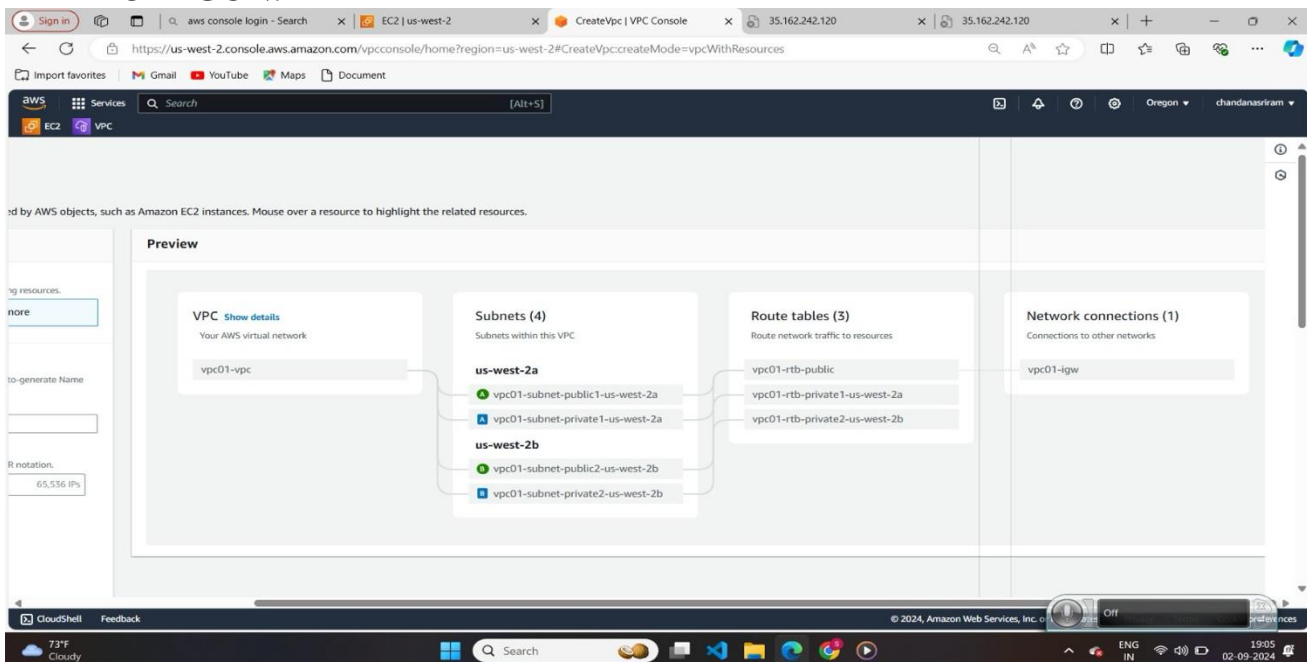
CREATE VPCs in THREE DIFFERENT REGIONS:

- Oregon
- Singapore
- Sydney

STEPS:

1. Login to AWS Account & Select the regions (Sydney ,Singapore , Oregon).
2. Choose the Oregon region, Click on Create VPC, Select VPC and more and create VPC.
3. Do the same process after selecting the Singapore & Sydney Regions.

OREGON:



aws console login - Search x EC2 | us-west-2 x VPC | us-west-2 x +

est-2.console.aws.amazon.com/vpconsole/home?region=us-west-2#VpcDetails:VpcId=vpc-0966ff6cbc7dd7a61

YouTube Maps Document

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VPC > Your VPCs > vpc-0966ff6cbc7dd7a61

vpc-0966ff6cbc7dd7a61 / vpc01-vpc

Actions

Details Info

VPC ID vpc-0966ff6cbc7dd7a61	State Available	DNS hostnames Enabled	DNS resolution Enabled
Tenancy Default	DHCP option set dopt-0e94b0003b914250d	Main route table rtb-083a56b2a17dc39b0	Main network ACL acl-0ad4c22e00a806058
Default VPC No	IPv4 CIDR 10.0.0.0/16	IPv6 pool -	IPv6 CIDR (Network border group) -
Network Address Usage metrics Disabled	Route 53 Resolver DNS Firewall rule groups -	Owner ID 008971661295	

SINGAPORE :

aws console login - Search x VPC | ap-southeast-1 x +

https://ap-southeast-1.console.aws.amazon.com/vpconsole/home?region=ap-southeast-1#CreateVpc:createMode=vpcWithResources

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aws Services Search [Alt+S]

EC2 VPC

Amazon EC2 instances. Mouse over a resource to highlight the related resources.

Preview

VPC Show details
Your AWS virtual network
vpc-02-vpc

Subnets (4)
Subnets within this VPC

- ap-southeast-1a
 - vpc-02-subnet-public-1-ap
 - vpc-02-subnet-private1-ap
- ap-southeast-1b
 - vpc-02-subnet-public2-ap
 - vpc-02-subnet-private2-ap

Route tables (3)
Route network traffic to resources

- vpc-02-rtb-public
- vpc-02-rtb-private1-ap-southeast-1a
- vpc-02-rtb-private2-ap-southeast-1b

Network connections (1)
Connections to other networks

- vpc-02-igw

CloudShell Feedback

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aws console login - Search x EC2 | us-west-2 x SecurityGroup | EC2 | us-west-2 x Launch an instance | EC2 | ap-southeast-1 x VPC | ap-southeast-1 x +

https://ap-southeast-1.console.aws.amazon.com/vpconsole/home?region=ap-southeast-1#VpcDetails:VpcId=vpc-0463937b1a9e44f20

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aws Services Search [Alt+S]

EC2 VPC

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

VPC > Your VPCs > vpc-0463937b1a9e44f20

vpc-0463937b1a9e44f20 / vpc02-vpc

Actions

Details Info

VPC ID vpc-0463937b1a9e44f20	State Available	DNS hostnames Enabled	DNS resolution Enabled
Tenancy Default	DHCP option set dopt-077ea13bf3836054c	Main route table rtb-0788bb27b6e3f451bb	Main network ACL acl-01789a08b3e4ad57a
Default VPC No	IPv4 CIDR 11.0.0.0/16	IPv6 pool -	IPv6 CIDR (Network border group) -
Network Address Usage metrics Disabled	Route 53 Resolver DNS Firewall rule groups -	Owner ID 008971661295	

Resource map CIDRs Flow logs Tags Integrations

Resource map info

VPC Show details

Subnets (4)

Route tables (4)

CloudShell Feedback

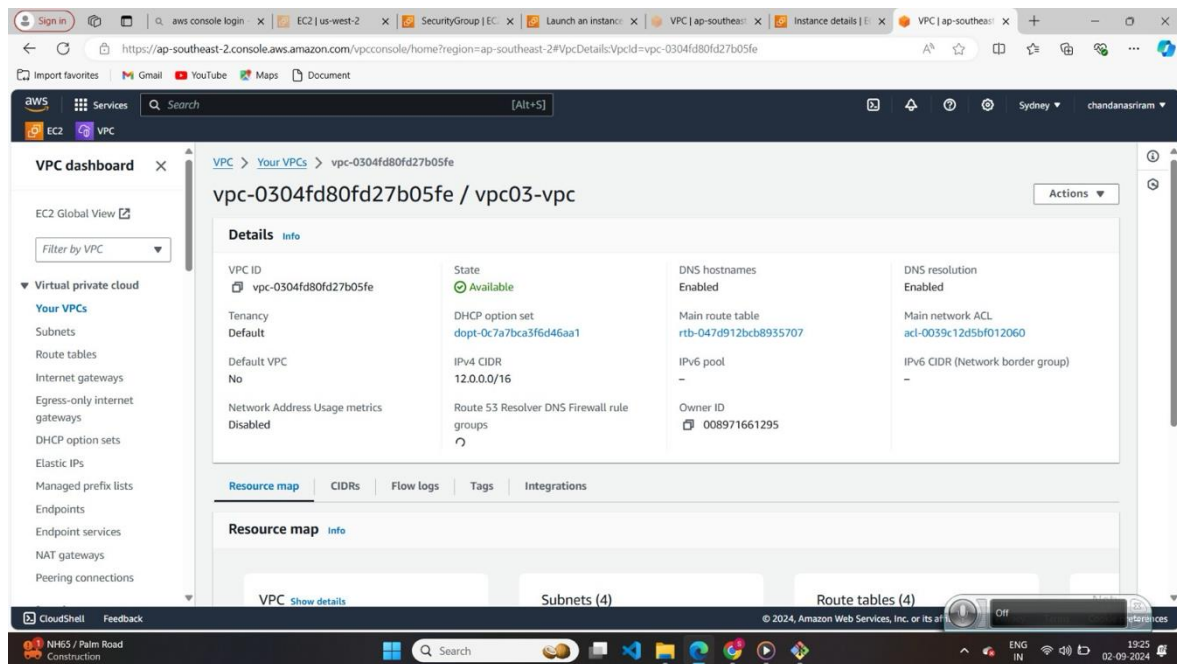
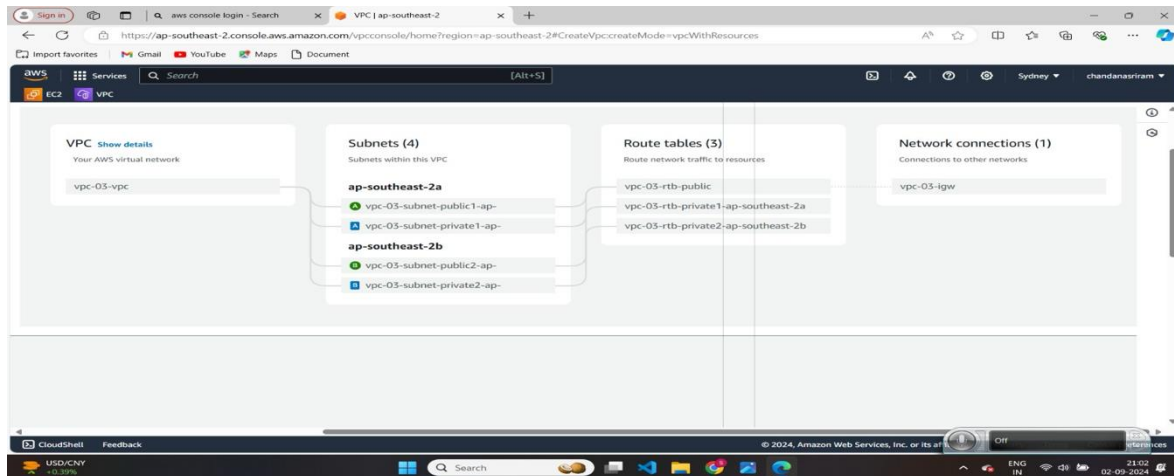
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SYDNEY :



4. Create EC2 instances for 3 regions.

- Launch instance – create key pair - create security group - add security group rule - launch instance

5. Create Transit Gateway for all three regions.

Oregon:

The screenshot shows the AWS VPC console for the Oregon region. The left sidebar displays the VPC dashboard with a search bar and a list of services. The main content area shows the details for the transit gateway **tgw-0a1011cafa7f71950 / transit01**. The details are organized into a table with four columns: Transit gateway ID, Transit gateway ARN, Owner ID, and Description. The state is Pending. The default association route table is Enable. The default propagation route table is Enable. The association route table ID is [tgw-rtb-08eb4a6676796940c](#). The propagation route table ID is [tgw-rtb-08eb4a6676796940c](#). The VPN ECMP support is Enable. The flow logs section is visible below the details table.

Transit gateway ID	Transit gateway ARN	Owner ID	Description
tgw-0a1011cafa7f71950	arn:aws:ec2:us-west-2:008971661295:transit-gateway/tgw-0a1011cafa7f71950	008971661295	-

State	Default association route table	Default propagation route table	Transit gateway CIDR blocks
Pending	Enable	Enable	1 CIDR

Amazon ASN	Association route table ID	Propagation route table ID	Multicast support
64512	tgw-rtb-08eb4a6676796940c	tgw-rtb-08eb4a6676796940c	Disable

DNS support	Auto accept shared attachments	VPN ECMP support
Enable	Disable	Enable

Flow logs info

Find flow log by attribute or tag

SINGAPORE:

The screenshot shows the AWS VPC console for the Singapore region. The left sidebar displays the VPC dashboard with a search bar and a list of services. The main content area shows the details for the transit gateway **tgw-031e500311cb38a08 / transit-02**. The details are organized into a table with four columns: Transit gateway ID, Transit gateway ARN, Owner ID, and Description. The state is Pending. The default association route table is Enable. The default propagation route table is Enable. The association route table ID is [tgw-rtb-00f8729da7ae1b72b](#). The propagation route table ID is [tgw-rtb-00f8729da7ae1b72b](#). The VPN ECMP support is Enable. The flow logs section is visible below the details table.

Transit gateway ID	Transit gateway ARN	Owner ID	Description
tgw-031e500311cb38a08	arn:aws:ec2:ap-southeast-1:008971661295:transit-gateway/tgw-031e500311cb38a08	008971661295	-

State	Default association route table	Default propagation route table	Transit gateway CIDR blocks
Pending	Enable	Enable	1 CIDR

Amazon ASN	Association route table ID	Propagation route table ID	Multicast support
64512	tgw-rtb-00f8729da7ae1b72b	tgw-rtb-00f8729da7ae1b72b	Disable

DNS support	Auto accept shared attachments	VPN ECMP support
Enable	Disable	Enable

Flow logs info

Find flow log by attribute or tag

Sydney:

The screenshot shows the AWS VPC console for the Sydney region. The left sidebar displays the VPC dashboard with a search bar and a list of services. The main content area shows the details for the transit gateway **tgw-0982543410a0072d7 / transit-03**. The details are organized into a table with four columns: Transit gateway ID, Transit gateway ARN, Owner ID, and Description. The state is Pending. The default association route table is Enable. The default propagation route table is Enable. The association route table ID is [tgw-rtb-0d2a625e7f0f62cfff](#). The propagation route table ID is [tgw-rtb-0d2a625e7f0f62cfff](#). The VPN ECMP support is Enable. The flow logs section is visible below the details table.

Transit gateway ID	Transit gateway ARN	Owner ID	Description
tgw-0982543410a0072d7	arn:aws:ec2:ap-southeast-2:008971661295:transit-gateway/tgw-0982543410a0072d7	008971661295	-

State	Default association route table	Default propagation route table	Transit gateway CIDR blocks
Pending	Enable	Enable	-

Amazon ASN	Association route table ID	Propagation route table ID	Multicast support
64512	tgw-rtb-0d2a625e7f0f62cfff	tgw-rtb-0d2a625e7f0f62cfff	Disable

DNS support	Auto accept shared attachments	VPN ECMP support
Enable	Disable	Enable

Flow logs info

Find flow log by attribute or tag

6. Create 2 transit gateway attachments for each region.

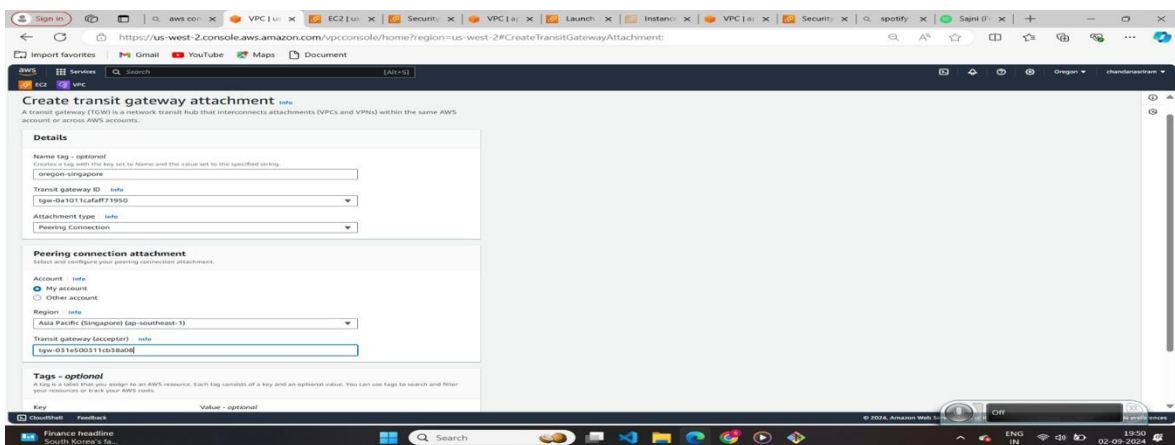
- One for vpc
- Other one for peering connection →

VPC and Peering Connections between the regions:

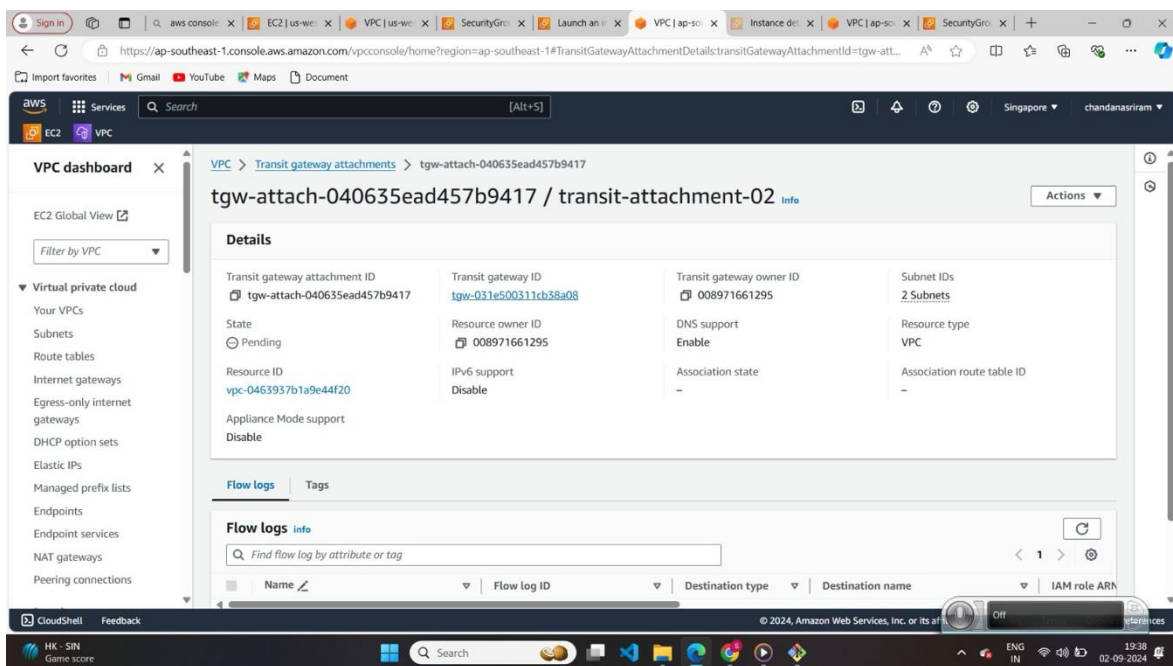
- Oregon - Singapore
- Sydney – Oregon
- Singapore – Sydney

At all regions status should be in available state.

Oregon:



SINGAPORE:



SYDNEY :

Sign in

aws console login - Search

VPC | ap-southeast-2

https://ap-southeast-2.console.aws.amazon.com/vpcconsole/home?region=ap-southeast-2#TransitGatewayDetails:transitGatewayId=tgw-0982543410a0072d7

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AWS ServicesSearch[Alt+S]

Sydneychandanariram

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

VPC > Transit gateways > tgw-0982543410a0072d7

tgw-0982543410a0072d7 / transit-03

Details

Transit gateway ID

tgw-0982543410a0072d7

State

Pending

Amazon ASN

64512

DNS support

Enable

Transit gateway ARN

arn:aws:ec2:ap-southeast-2:008971661295:transit-gateway/tgw-0982543410a0072d7

Default association route table

Enable

Association route table ID

tgw-rtb-0d2a625e7f0f62cff

Auto accept shared attachments

Disable

Owner ID

008971661295

Default propagation route table

Enable

Propagation route table ID

tgw-rtb-0d2a625e7f0f62cff

VPN ECMP support

Enable

Description

-

Transit gateway CIDR blocks

-

Multicast support

Disable

Flow logs

Sharing

Tags

Flow logs

Find flow log by attribute or tag

CloudShellFeedback

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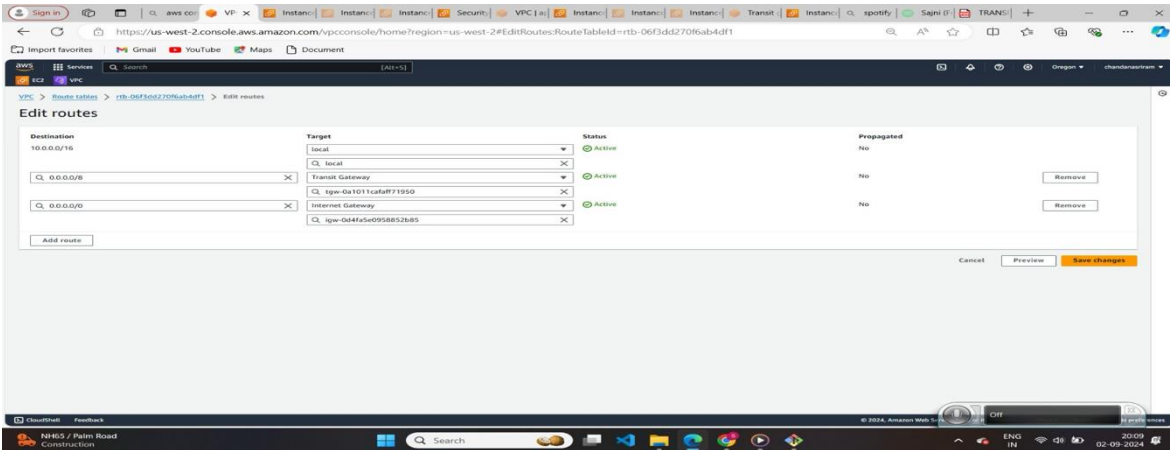
21:11

02-09-2024

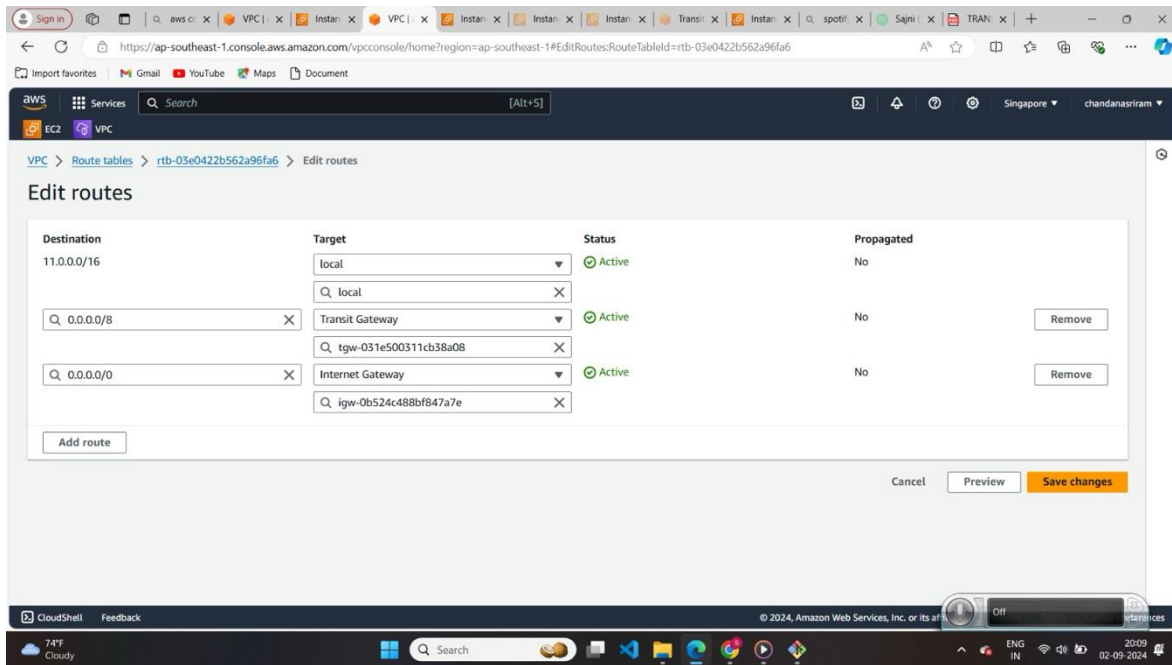
OREGON :

7. Go to route tables & edit the routes & save changes.

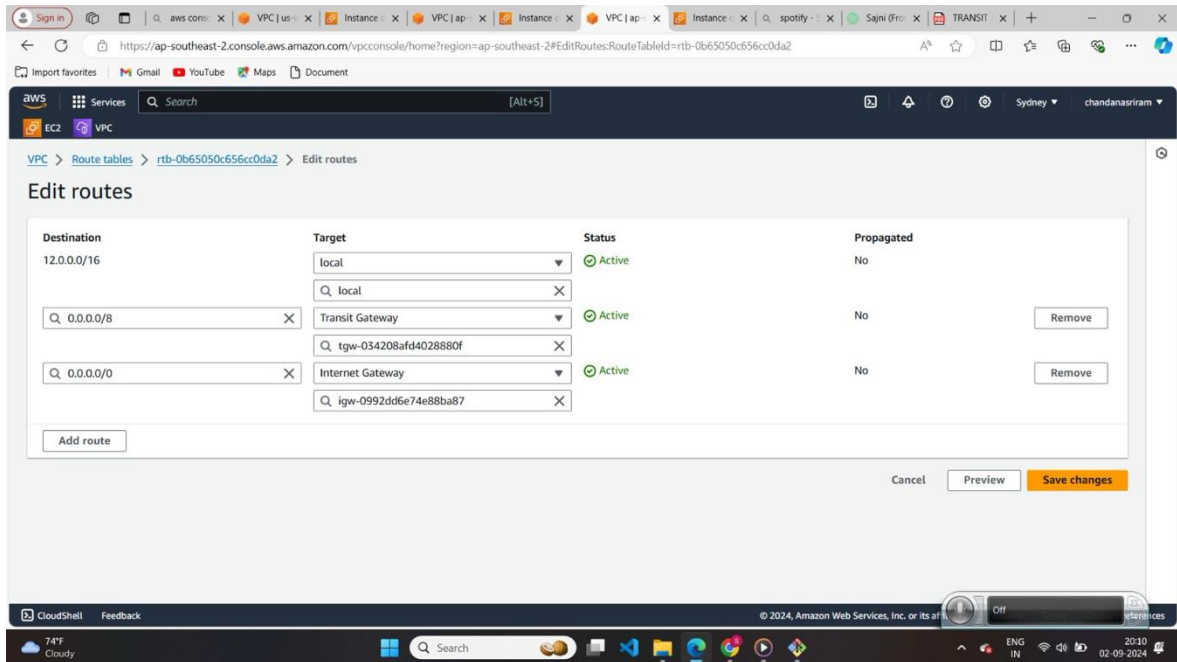
Oregon :



Singapore :

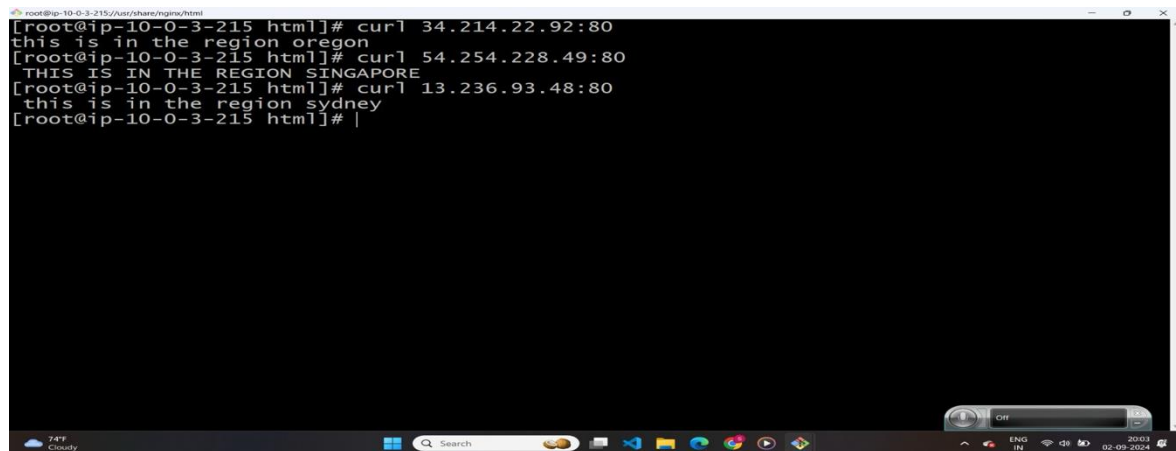


OREGON :
SYDNEY :



8. Go to EC2 instance and connect the server git bash in all three regions.

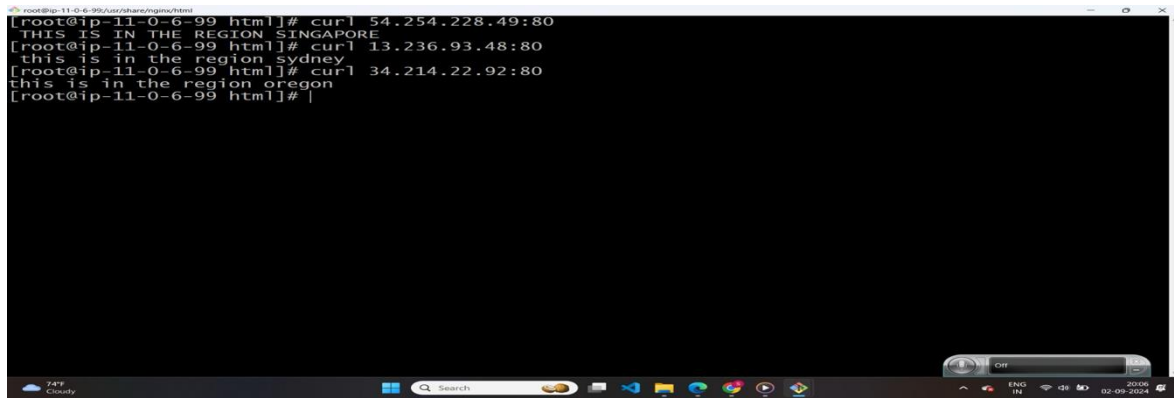
OREGON :



OREGON :

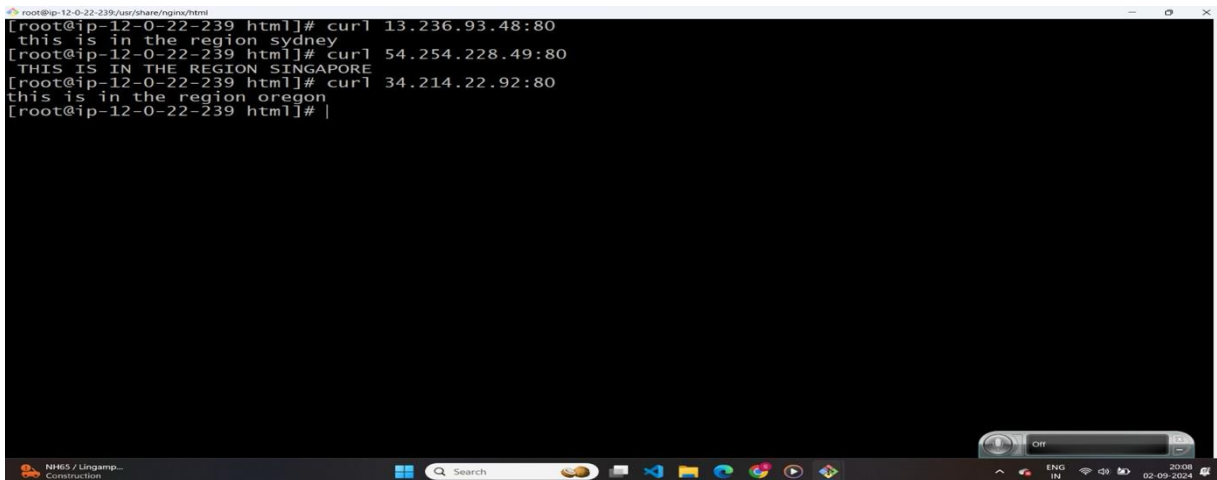
SINGAPORE :

```
root@ip-11-0-6-99:/usr/share/nginx/html# curl 54.254.228.49:80
THIS IS IN THE REGION SINGAPORE
root@ip-11-0-6-99:/usr/share/nginx/html# curl 13.236.93.48:80
this is in the region sydney
root@ip-11-0-6-99:/usr/share/nginx/html# curl 34.214.22.92:80
this is in the region oregon
root@ip-11-0-6-99:/usr/share/nginx/html#
```



SYDNEY :

```
root@ip-12-0-22-239:/usr/share/nginx/html# curl 13.236.93.48:80
this is in the region sydney
root@ip-12-0-22-239:/usr/share/nginx/html# curl 54.254.228.49:80
THIS IS IN THE REGION SINGAPORE
root@ip-12-0-22-239:/usr/share/nginx/html# curl 34.214.22.92:80
this is in the region oregon
root@ip-12-0-22-239:/usr/share/nginx/html#
```



THE END