

CROSS REGION VPC PEERING

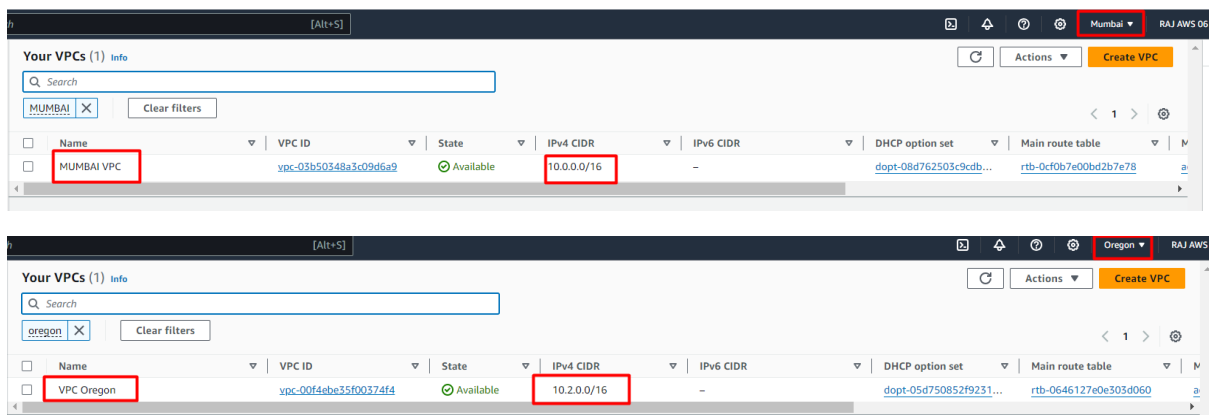
STEP 1 : Create a VPC

- We will create one VPC in Mumbai Region and One VPC In Oregon Region

VPC name CIDR

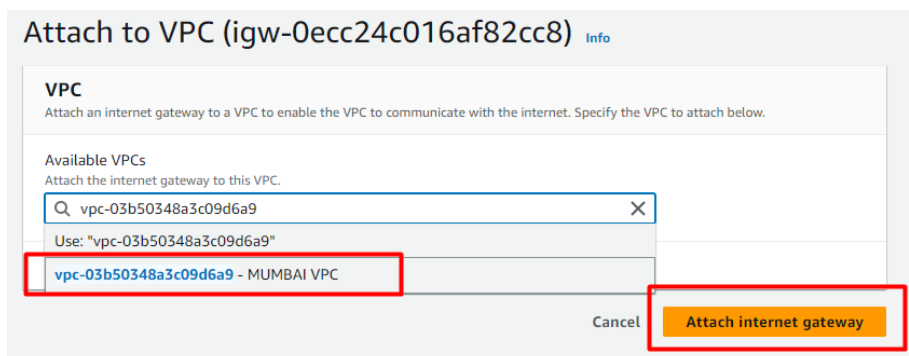
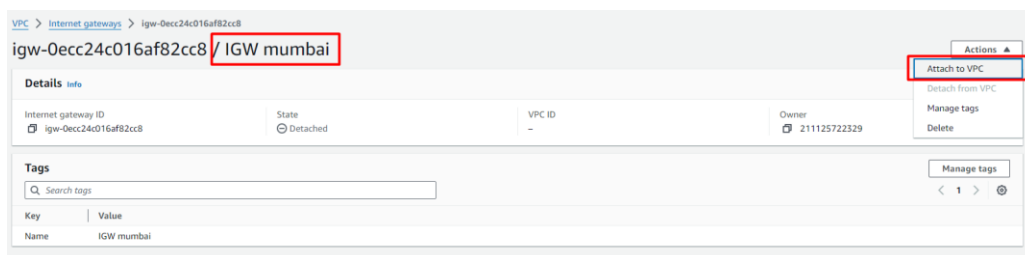
MUMBAI VPC 10.0.0.0/16 # Available in Mumbai Region

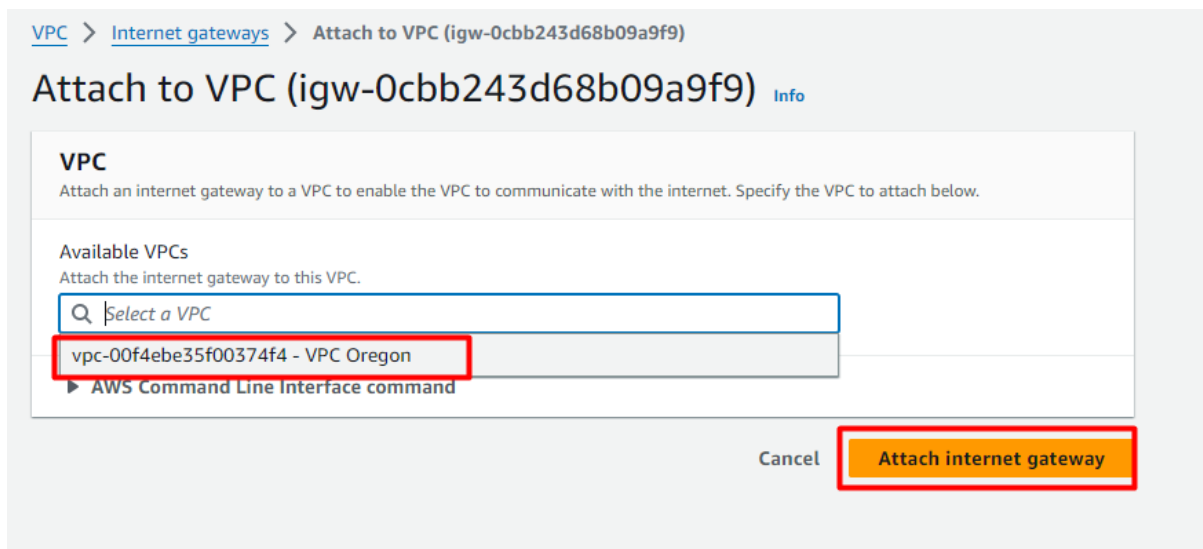
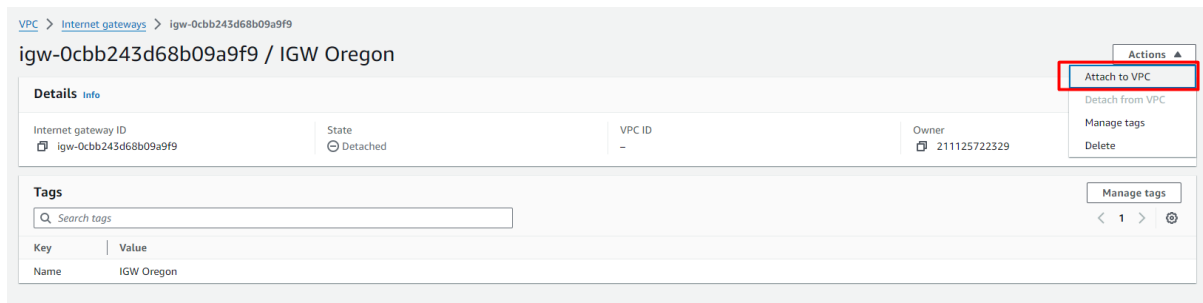
Oregon VPC 10.2.0.0/16 # Available in Oregon Region



STEP 2 : Create a Internet Gateway for both Region VPC

- Create a IGW in Mumbai Region & Oregon Region
- And attach the IGW to respected region VPC



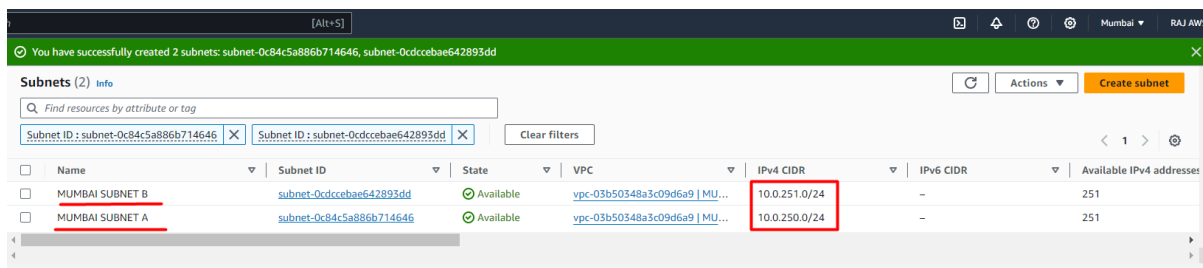


STEP 3 :Create a Subnet for each VCP in there respected Region

- Go to VPC
- Search for Subnet in the left side of the screen
- Click on the subnet
- And now click on subnet

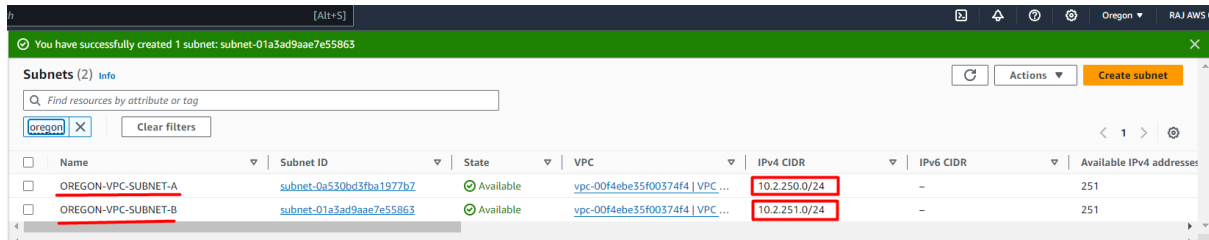
Create MUMBAI-VPC with subnet CIDR

NAME	IPV2 CIDR	AZ
MUMBAI-SUBNET-A	10.0.250.0/24	ap-south-1a
MUMBAI-SUBNET-B	10.0.251.0/24	ap-south-1b



Create Oregon-VPC with subnet CIDR

NAME	IPV2 CIDR	AZ
OREGON-VPC-SUBNET-A	10.2.250.0/24	us-west-2a
OREGON-VPC-SUBNET-B	10.2.251.0/24	us-west-2b



- Hence we have successfully create the Subnet for there respected region VPC's

STEP 4 : Create Route Table for there Respected VPC of there Region

- Go to route table in the VPC

Create Route Table of MUMBAI-VPC

Create route table [Info](#)

A route table specifies how packets are forwarded between the subnets within your VPC, the internet, and your VPN connection.

Route table settings

Name - optional
Create a tag with a key of 'Name' and a value that you specify.

MUMBAI-ROUTE TABLE

VPC
The VPC to use for this route table.

vpc-03b50348a3c09d6a9 (MUMBAI VPC)

Tags
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

Key: Name Value - optional: MUMBAI-ROUTE TABLE

[Add new tag](#)

You can add 49 more tags.

[Cancel](#) [Create route table](#)

Create Route Table of Oregon-VPC

Create route table [Info](#)

A route table specifies how packets are forwarded between the subnets within your VPC, the internet, and your VPN connection.

Route table settings

Name - optional
Create a tag with a key of 'Name' and a value that you specify.

OREGON ROUTE-TABLE

VPC
The VPC to use for this route table.

vpc-00f4ebe35f00374f4 (VPC Oregon)

Tags
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

Key: Name Value - optional: OREGON ROUTE-TABLE

[Add new tag](#)

You can add 49 more tags.


[Cancel](#) [Create route table](#)

STEP 5 :Associate Route in Route Table


- Select your Route Table
- Go to Subnet Association
- Edit your Subnet Association
- Add your Subnet to your Route Table


rtb-04775bb511a54d6e1 / OREGON ROUTE-TABLE

Details [Info](#)

Route table ID
 rtb-04775bb511a54d6e1

VPC
[vpc-00f4ebe35f00374f4](#) | VPC Oregon

Main
 No

Owner ID
 211125722329

Explicit subnet associations
[2 subnets](#)

Routes

Subnet associations

Edge associations

Route propagation


Tags

Explicit subnet associations (2)


Name	Subnet ID	IPv4 CIDR
OREGON-VPC-SUBNET-A	subnet-0a530bd3fba1977b7	10.2.250.0/24
OREGON-VPC-SUBNET-B	subnet-01a3ad9aae7e55863	10.2.251.0/24


rtb-04860848527f43831 / MUMBAI-ROUTE TABLE

Details [Info](#)

Route table ID
 rtb-04860848527f43831

VPC
[vpc-03b50348a3c09d6a9](#) | MUMBAI VPC

Main
 No

Owner ID
 211125722329

Explicit subnet associations
[2 subnets](#)

Routes

Subnet associations

Edge associations

Route propagation

Tags


Explicit subnet associations (2)

Name	Subnet ID	IPv4 CIDR
MUMBAI SUBNET A	subnet-0c84c5a886b714646	10.0.250.0/24
MUMBAI SUBNET B	subnet-007e3e5f853e38c82	10.0.251.0/24

STEP 6 :Edit the Routing in Route table

- Now go to Route in Route Table
- Edit the route with the IGW


MUMBAI VPC -

rtb-04860848527f43831 / MUMBAI-ROUTE TABLE 

Details [info](#)

Route table ID rtb-04860848527f43831	Main No	Explicit subnet associations 2 subnets	Edge associations -
VPC vpc-03b50348a3c09d6a9 MUMBAI VPC	Owner ID 211125722329		

Routes Subnet associations Edge associations Route propagation Tags

Routes (2) Both Edit routes 

Destination	Target	Status	Propagated
0.0.0.0/0	igw-0ecc24c016af82cc8	Active	No
10.0.0.0/16	local	Active	No

OREGON VPC

rtb-04775bb511a54d6e1 / OREGON ROUTE-TABLE

Details [info](#)

Route table ID rtb-04775bb511a54d6e1	Main No	Explicit subnet associations 2 subnets	Edge associations -
VPC vpc-00f4ebe35f00374f4 VPC Oregon	Owner ID 211125722329		

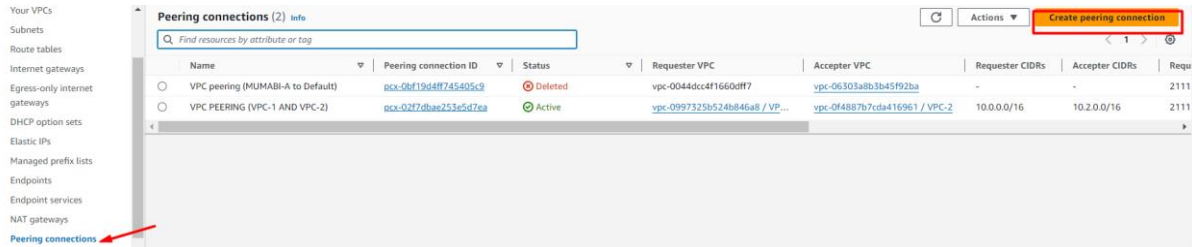
Routes Subnet associations Edge associations Route propagation Tags

Routes (2) Both

Destination	Target	Status	Propagated
0.0.0.0/0	igw-0cbb243d68b09a9f9	Active	No
10.2.0.0/16	local	Active	No

STEP 7 :Create VPC Peering

- Go to VPC In Mumbai region,
- On the left side search for perring connection
- Click on it
- And create a VPC Peering



- Now we will create a VPC Peering
- We will give a name as VPC PEERING (MUMBAI TO OREGON)
- In requester we will use Mumbai region VPC : MUMBAI VPC
- Now we want to Peering with connection with different region but in same account
- So we will choose Same account
- And we will will choose different Region
- So we will choose Oregon Region
- Now We will copy paste the VCP ID of Oregon Region VPC : Oregon VPC
- And create the VPC peering

Name - *optional*
Create a tag with a key of 'Name' and a value that you specify.

VPC PEERING (MUMBAI TO OREGON)

Select a local VPC to peer with

VPC ID (Requester)

vpc-03b50348a3c09d6a9 (MUMBAI VPC)

VPC CIDRs for vpc-03b50348a3c09d6a9 (MUMBAI VPC)

CIDR	Status	Status reason
10.0.0.0/16	✓ Associated	-

Select another VPC to peer with

Account

☒ My account

☐ Another account

Region

☐ This Region (ap-south-1)

☒ Another Region

US West (Oregon) (us-west-2)

VPC ID (Acceptor)

vpc-00f4ebe35f00374f4

- We can see the Mumbai region VPC has send Request to Oregon VPC for Peering
- So we will open Oregon Region and go to VPC Peering
- There we will see the Request has arrive for the Peering connection with Mumbai region
- So we will accept this request for the peering purpose

A VPC peering connection pcx-001fc0576336c5e50 / VPC PEERING (MUMBAI TO OREGON) has been requested.
Remember to change your region to us-west-2 to accept the peering connection.

VPC > Peering connections > pcx-001fc0576336c5e50

pcx-001fc0576336c5e50 / VPC PEERING (MUMBAI TO OREGON) Actions

Details [info](#)

Requester owner ID 211125722329 Peering connection ID pcx-001fc0576336c5e50 Status Initiating Request to 211125722329 Expiration time Saturday, April 20, 2024 at 19:41:00 GMT+5:30	Accepter owner ID 211125722329 Requester VPC vpc-03b50348a3c09d6a9 / MUMBAI VPC Requester CIDRs 10.0.0.0/16 Requester Region Mumbai (ap-south-1)	VPC Peering connection ARN arn:aws:ec2:ap-south-1:211125722329:vpc-peering-connection/pcx-001fc0576336c5e50 Accepter VPC vpc-00f4ebe35f00374f4 Accepter CIDRs - Accepter Region Oregon (us-west-2)
--	---	---

Peering connections (1/1) [info](#)

Find resources by attribute or tag

Name	Peering connection ID	Status	Requester VPC	Accepter VPC
-	pcx-001fc0576336c5e50	Pending acceptance	vpc-03b50348a3c09d6a9	vpc-00f4ebe35f00374f4 / VPC ...

Actions Create peering connection

- View details
- Accept request**
- Reject request
- Edit DNS settings
- Manage tags
- Delete peering connection

Accept VPC peering connection request [info](#) ×

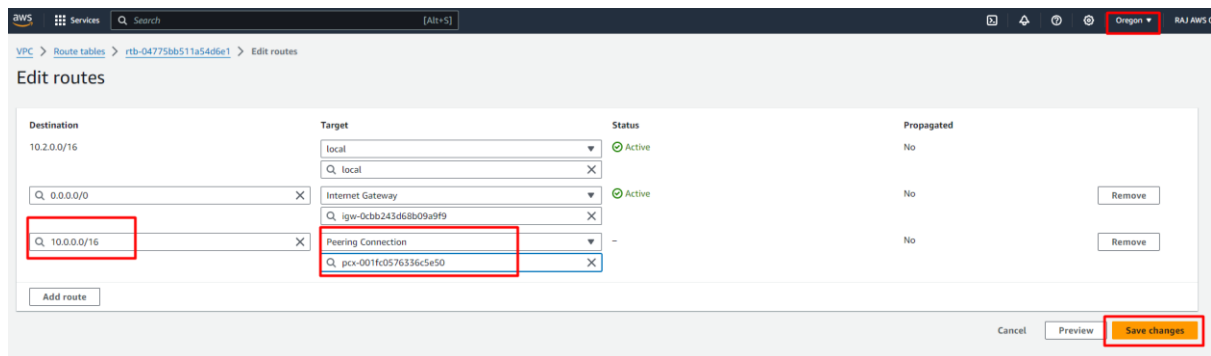
Are you sure you want to accept this VPC peering connection request? (pcx-001fc0576336c5e50)

Requester VPC vpc-03b50348a3c09d6a9 Accepter CIDRs - Requester owner ID 211125722329 (This account)	Accepter VPC vpc-00f4ebe35f00374f4 / VPC Oregon Requester Region Mumbai (ap-south-1) Accepter owner ID 211125722329 (This account)	Requester CIDRs 10.0.0.0/16 Accepter Region Oregon (us-west-2)
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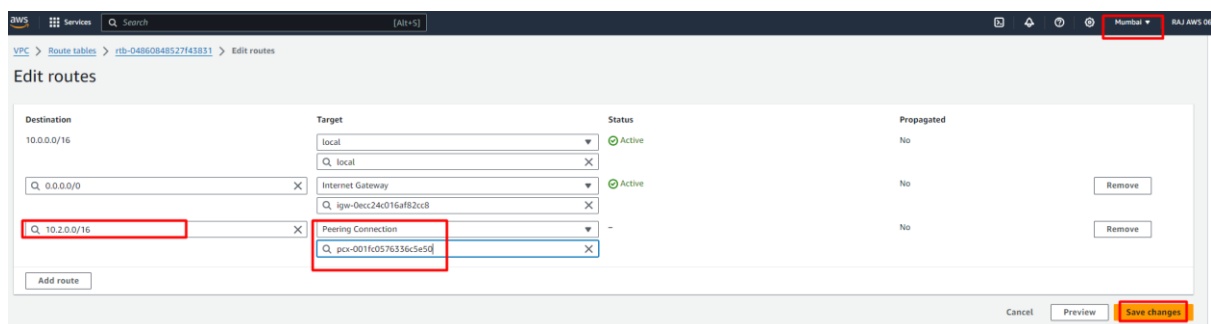
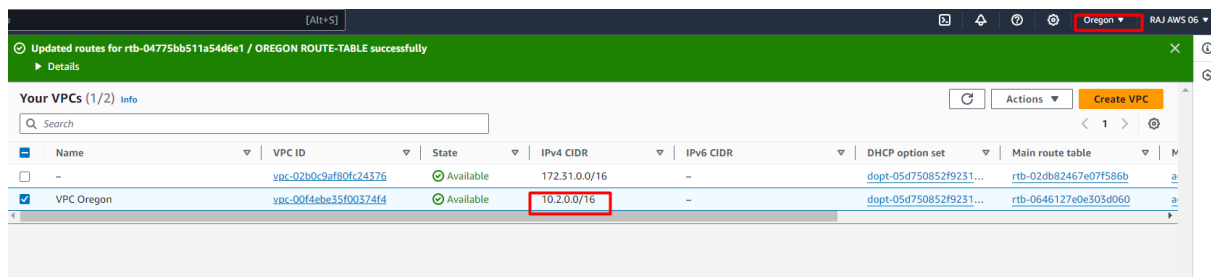
Cancel **Accept request**

STEP 8 : Modify Route Table of VPC :

- Now we will modify Route table of Each VPC Region Route Table
- We will copy the MUMBAI-VPC CIDR
- And Paste the CIDR in the OREGON ROUTE-TABLE
- And add the target VPC peering which we have create



- We will copy the MUMBAI-VPC CIDR
- And Paste the CIDR in the OREGON ROUTE-TABLE
- And add the target VPC peering which we have create



STEP 9 : Check VPC peering is Working properly

- Create a Ec2 insatnce In each Region with the Respceted VPC

MUMBAI REGION

- While creating a Ec2 Instance
- We will use AMI as Linux 2023
- We will create a New SG

SSH 0.0.0.0

HTTP 0.0.0.0

All ICMP 0.0.0.0

The image shows two screenshots from the AWS Management Console. The left screenshot shows the 'Network settings' for a new EC2 instance. It highlights the 'VPC' dropdown set to 'vpc-03b50348a3c09d6a9 (MUMBAI VPC)' and the 'Subnet' dropdown set to 'subnet-0c84c5a886b714646 (MUMBAI SUBNET A)'. A red arrow points to the 'Auto-assign public IP' dropdown, which is set to 'Enable'. The right screenshot shows the 'Create security group' page. It highlights the 'Security group name' field set to 'MUMBAI REGION SG'. Below, it shows three inbound security group rules: Rule 1 (TCP, 22, 0.0.0.0/0), Rule 2 (TCP, 80, 0.0.0.0/0), and Rule 3 (ICMP, All, Multiple sources). Rule 3 is highlighted with a red box.

Network settings

VPC - required | Info

vpc-03b50348a3c09d6a9 (MUMBAI VPC)
10.0.0.0/16

Subnet | Info

subnet-0c84c5a886b714646 MUMBAI SUBNET A
VPC: vpc-03b50348a3c09d6a9 Owner: 211125722329
Availability Zone: ap-south-1a IP addresses available: 251 CIDR: 10.0.250.0/24

Auto-assign public IP | Info

Enable

Additional charges apply when outside of free tier allowance

Firewall (security groups) | Info

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

Create security group | Select existing security group

Security group name - required

MUMBAI REGION SG

This security group will be added to all network interfaces. The name can't be edited after the security group is created. Max length is 255 characters. Valid characters: a-z, A-Z, 0-9, spaces, and _-./!@#%&'()*~+-=|:;{}[]^`~. The tilde character (~) is not allowed at the end of the name.

Description - required | Info

MUMBAI REGION SG

Create security group | Select existing security group

Security group name - required

MUMBAI REGION SG

Description - required | Info

MUMBAI REGION SG

Inbound Security Group Rules

Security group rule 1 (TCP, 22, 0.0.0.0/0) Remove

Type	Protocol	Port range
ssh	TCP	22

Source type | Info

Anywhere

Source | Info

Q. Add CIDR, prefix list or security

0.0.0.0/0 X

Description - optional | Info

e.g. SSH for admin desktop

Security group rule 2 (TCP, 80, 0.0.0.0/0) Remove

Type	Protocol	Port range
HTTP	TCP	80

Source type | Info

Custom

Source | Info

Q. Add CIDR, prefix list or security

0.0.0.0/0 X

Description - optional | Info

e.g. SSH for admin desktop

Security group rule 3 (ICMP, All, Multiple sources) Remove

Type	Protocol	Port range
All ICMP - IPv4	ICMP	All

Source type | Info

Custom

Source | Info

Q. Add CIDR, prefix list or security

0.0.0.0/0 X

Description - optional | Info

e.g. SSH for admin desktop

- We Enable ICMP Port because this will enable Ping traffic to Communicate with each other

OREGON REGION

- While creating a Ec2 Instance
- We will use AMI as Linux 2023
- We will create a New SG

SSH 0.0.0.0

HTTP 0.0.0.0

All ICMP 0.0.0.0

Network settings Info

VPC - required Info
vpc-00f4ebe35f00374f4 (VPC Oregon)
10.2.0.0/16

Subnet Info
subnet-0a530bd3fba1977b7 OREGON-VPC-SUBNET-A
VPC: vpc-00f4ebe35f00374f4 Owner: 211125722329 Availability Zone: us-west-2a
Addresses available: 251 CIDR: 10.2.250.0/24

Auto-assign public IP Info
Enable

Firewall (security groups) Info
A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

Create security group Select existing security group

Security group name - required
OREGOAN-INSTANCE-SG
This security group will be added to all network interfaces. The name can't be edited after the security group is created. Max length is 255 characters. Valid characters: a-z, A-Z, 0-9, spaces, and _-./!#\$%&'()*+&:[]{}*~

Description - required Info
OREGOAN ISTANCE SG

Inbound Security Group Rules

Security group rule 1 (TCP, 22, 0.0.0.0/0) Remove

Type	Protocol	Port range
ssh	TCP	22

Source type Source Description - optional

Anywhere Add CIDR, prefix list or security 0.0.0.0/0 X e.g. SSH for admin desktop

Security group rule 2 (TCP, 80, 0.0.0.0/0) Remove

Type	Protocol	Port range
HTTP	TCP	80

Source type Source Description - optional

Anywhere Add CIDR, prefix list or security 0.0.0.0/0 X e.g. SSH for admin desktop

Security group rule 3 (ICMP, All, 0.0.0.0/0) Remove

Type	Protocol	Port range
Custom ICMP - IPv4	All	All

Source type Source Description - optional

Anywhere Add CIDR, prefix list or security 0.0.0.0/0 X e.g. SSH for admin desktop

- We Enable ICMP Port because this will enable Ping traffic to Communicate with each other

STEP 10 : Checking Connectivity of Its VPC

- Now connect the MUMBAI-REGION-INSTANCE
- And also connect OREGON INSTATNCE
- Ping respected network of this connection

Mumbai region Instance

```
/m/'
[ec2-user@ip-10-0-250-244 ~]$ ping 15.206.75.146
PING 15.206.75.146 (15.206.75.146) 56(84) bytes of data.
64 bytes from 15.206.75.146: icmp_seq=1 ttl=126 time=0.299 ms
64 bytes from 15.206.75.146: icmp_seq=2 ttl=126 time=0.432 ms
64 bytes from 15.206.75.146: icmp_seq=3 ttl=126 time=0.493 ms
64 bytes from 15.206.75.146: icmp_seq=4 ttl=126 time=0.392 ms
64 bytes from 15.206.75.146: icmp_seq=5 ttl=126 time=0.443 ms
^C
--- 15.206.75.146 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4199ms
rtt min/avg/max/mdev = 0.299/0.411/0.493/0.064 ms
[ec2-user@ip-10-0-250-244 ~]$
```

i-02a1cc1bd7f47e2e9 (MUMBAI-REGION-INSTANCE)

PublicIPs: 15.206.75.146 PrivateIPs: 10.0.250.244

Oregon Region Insatnce

```
Each EC2 Command has found
[ec2-user@ip-10-2-250-118 ~]$ ping 34.220.81.240
PING 34.220.81.240 (34.220.81.240) 56(84) bytes of data.
64 bytes from 34.220.81.240: icmp_seq=1 ttl=126 time=0.554 ms
64 bytes from 34.220.81.240: icmp_seq=2 ttl=126 time=0.577 ms
64 bytes from 34.220.81.240: icmp_seq=3 ttl=126 time=0.677 ms
64 bytes from 34.220.81.240: icmp_seq=4 ttl=126 time=0.791 ms
^C
--- 34.220.81.240 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3127ms
rtt min/avg/max/mdev = 0.554/0.649/0.791/0.093 ms
[ec2-user@ip-10-2-250-118 ~]$
```

i-0c649dc6796334fb5 (OREGON INSTATNCE)

PublicIPs: 34.220.81.240 PrivateIPs: 10.2.250.118

- Hence both the Ec2 instance Are working Properly hence are VPC is working properly

STEP 11 : Checking the VPC peering is working

- Copy the Public/Private IP of **MUMBAI-REGION-INSTANCE** and ping IP on **OREGON INSTANTCE**

```
aws | Services | [?] | [?] | [?] | [?]  
[ec2-user@ip-10-2-250-118 ~]$ ping 15.206.75.146  
PING 15.206.75.146 (15.206.75.146) 56(84) bytes of data.  
64 bytes from 15.206.75.146: icmp_seq=1 ttl=112 time=218 ms  
64 bytes from 15.206.75.146: icmp_seq=2 ttl=112 time=218 ms  
64 bytes from 15.206.75.146: icmp_seq=3 ttl=112 time=218 ms  
^C  
--- 15.206.75.146 ping statistics ---  
4 packets transmitted, 3 received, 25% packet loss, time 3005ms  
rtt min/avg/max/mdev = 217.589/217.648/217.706/0.047 ms  
[ec2-user@ip-10-2-250-118 ~]$
```

i-0c649dc6796334fb5 (OREGON INSTANTCE)

PublicIPs: 34.220.81.240 PrivateIPs: 10.2.250.118

- Hence we have use Public IP of MUMBAI-REGION-INSTANTCE and its working properly in Oregon
- Copy the Public/Private IP of **OREGON Instance** and ping IP on **MUMBAI-REGION-INSTANCE**

```
[ec2-user@ip-10-0-250-244 ~]$ ping 34.220.81.240  
PING 34.220.81.240 (34.220.81.240) 56(84) bytes of data.  
64 bytes from 34.220.81.240: icmp_seq=1 ttl=111 time=218 ms  
64 bytes from 34.220.81.240: icmp_seq=2 ttl=111 time=218 ms  
64 bytes from 34.220.81.240: icmp_seq=3 ttl=111 time=218 ms  
^C  
--- 34.220.81.240 ping statistics ---  
3 packets transmitted, 3 received, 0% packet loss, time 2003ms  
rtt min/avg/max/mdev = 217.621/217.691/217.805/0.081 ms  
[ec2-user@ip-10-0-250-244 ~]$
```

i-02a1cc1bd7f47e2e9 (MUMBAI-REGION-INSTANCE)

PublicIPs: 15.206.75.146 PrivateIPs: 10.0.250.244

- Hence we have use Public IP of OREGON INSTANTCE and its working properly in Mumbai