CREATE THREE VPCs IN THREE DIFFERENT REGIONS AND CONNECT THE VPCs USING TRANSIT GATEWAY

➢ What is Amazon VPC?

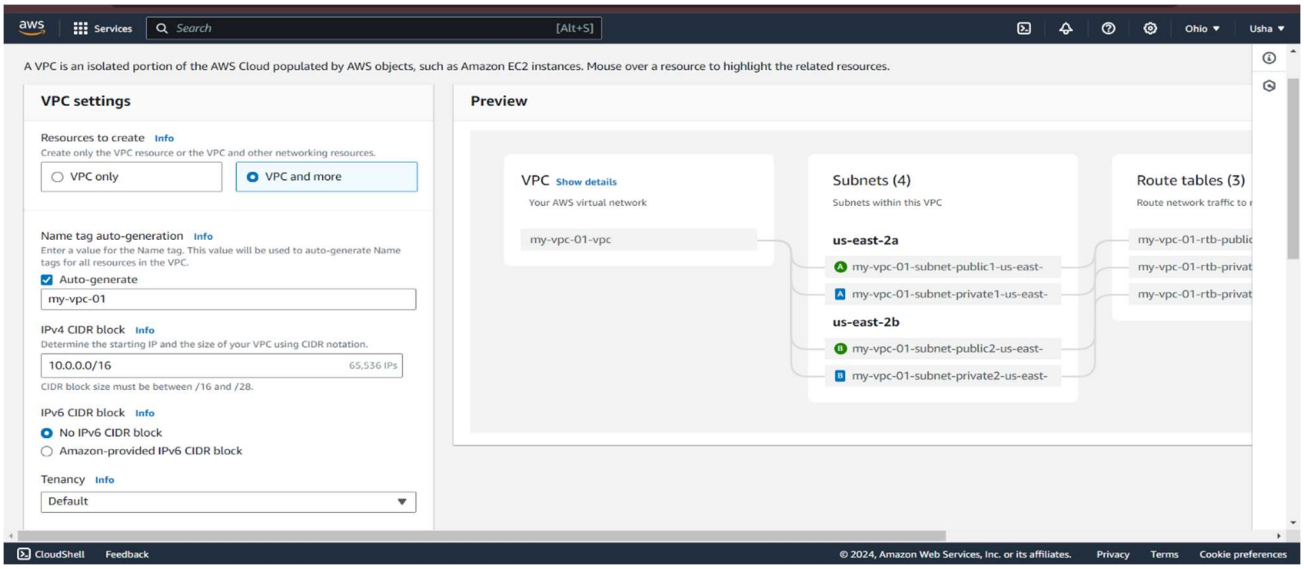
With Amazon Virtual Private Cloud (Amazon VPC), you can launch AWS resources in a logically isolated virtual network that you've defined. This virtual network closely resembles a traditional network that you'd operate in your own data centre, with the benefits of using the scalable infrastructure of AWS.

➢ What is Transit Gateway?

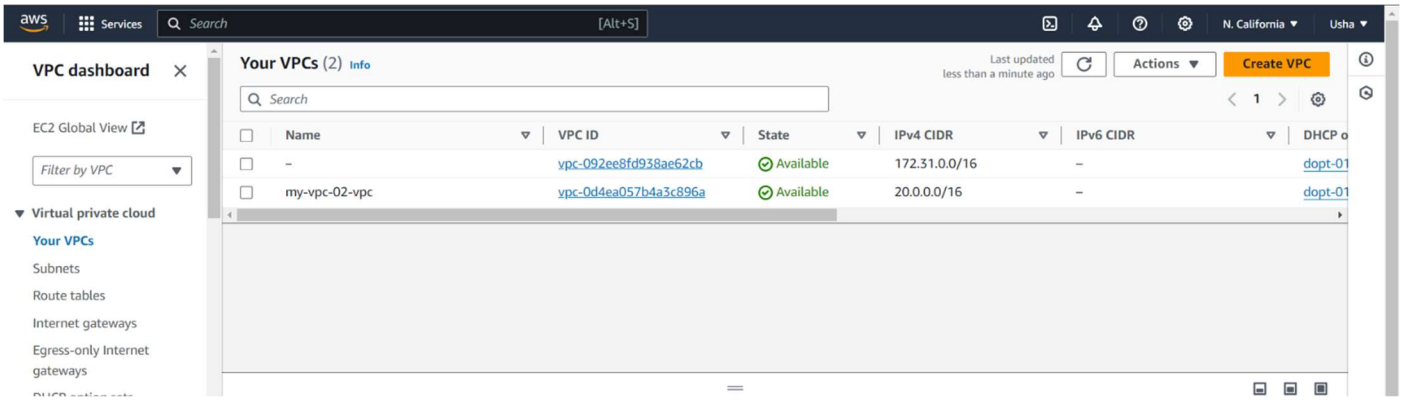
A transit gateway is a network transit hub that you can use to interconnect your virtual private clouds (VPCs) and on-premises networks. As your cloud infrastructure expands globally, inter-region peering connects transit gateways together using the AWS global infrastructure.

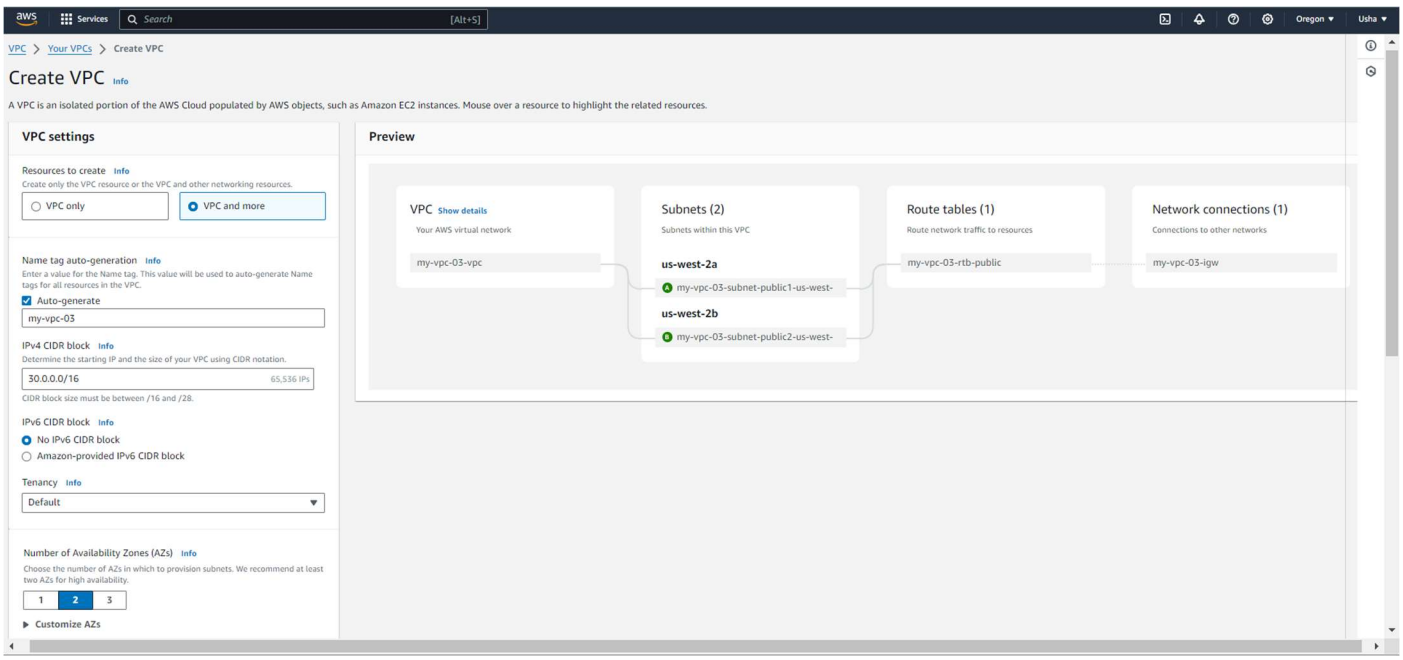
➢ Create VPCs in THREE DIFFERENT REGIONS (Ohio California Oregon):

1. Log in to your AWS account & select Ohio region & do search for VPC in the search box.
2. Click on create VPC & select VPC AND MORE, go down click on create VPC.
3. After that choose CALIFORNIA & OREGON and create VPCs in those regions.
4. Follow the steps mentioned in below snapshots.



5. Below snapshots shows the VPCs that are created in CALIFORNIA & OREGON.



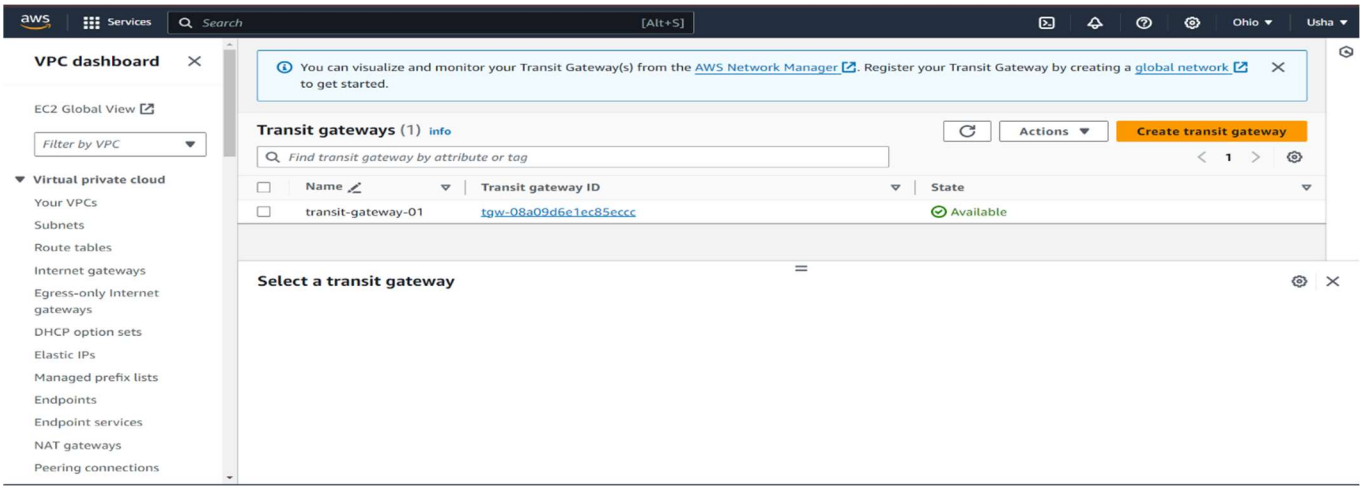


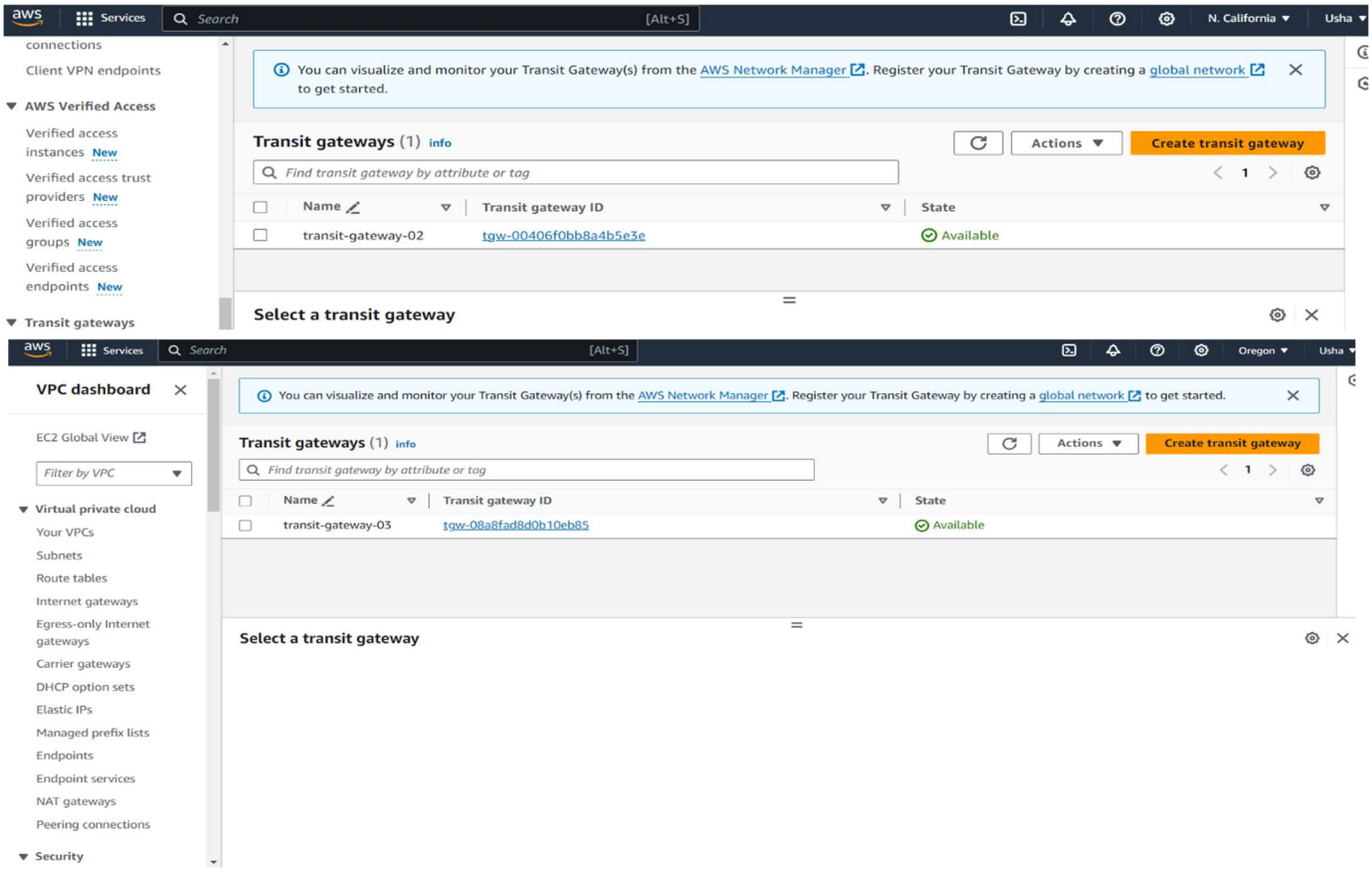
➢ Create Transit Gateway in three regions:

1. Go to transit gateway and select “Create Transit Gateway”.

2. Now create transit gateway in another two regions also.

3. Snapshots of transit gateway are attached below.





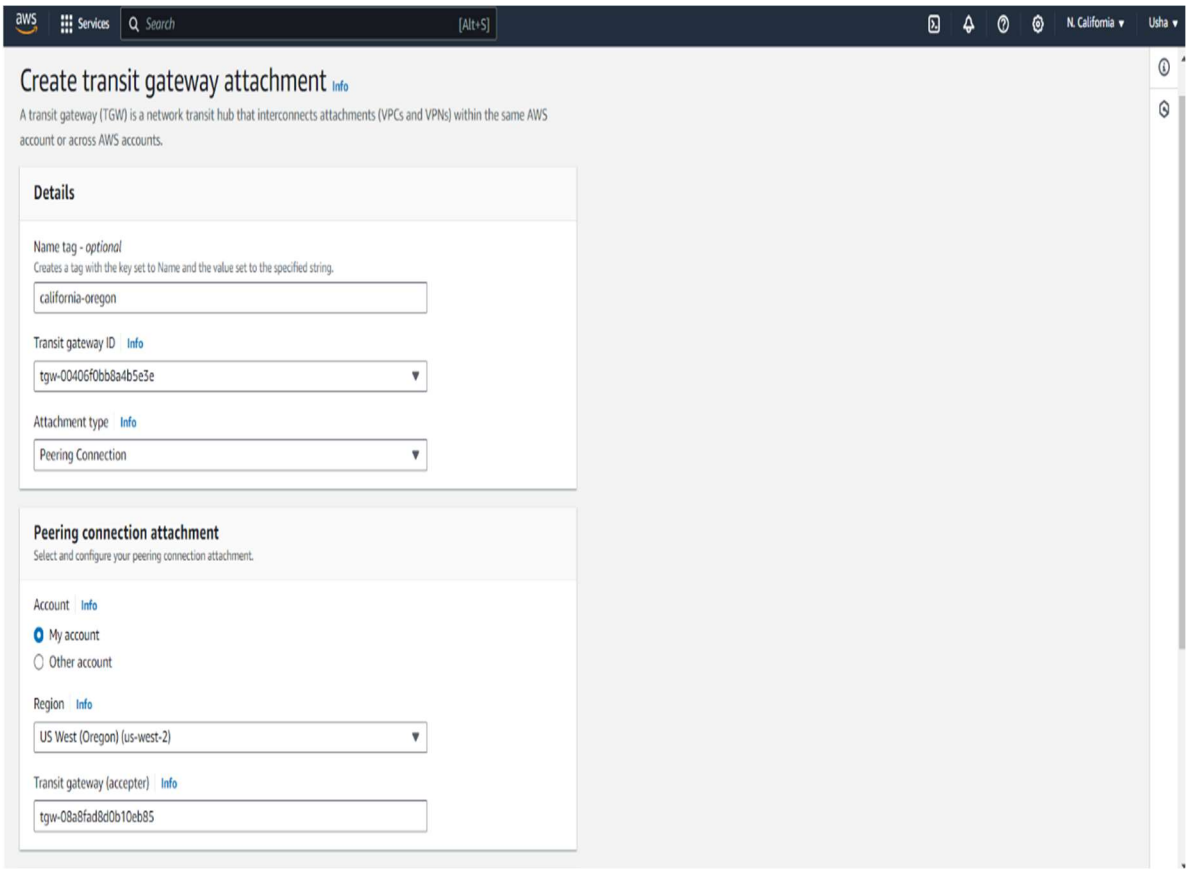
➢ Create Transit Gateway Attachment in THREE Regions:

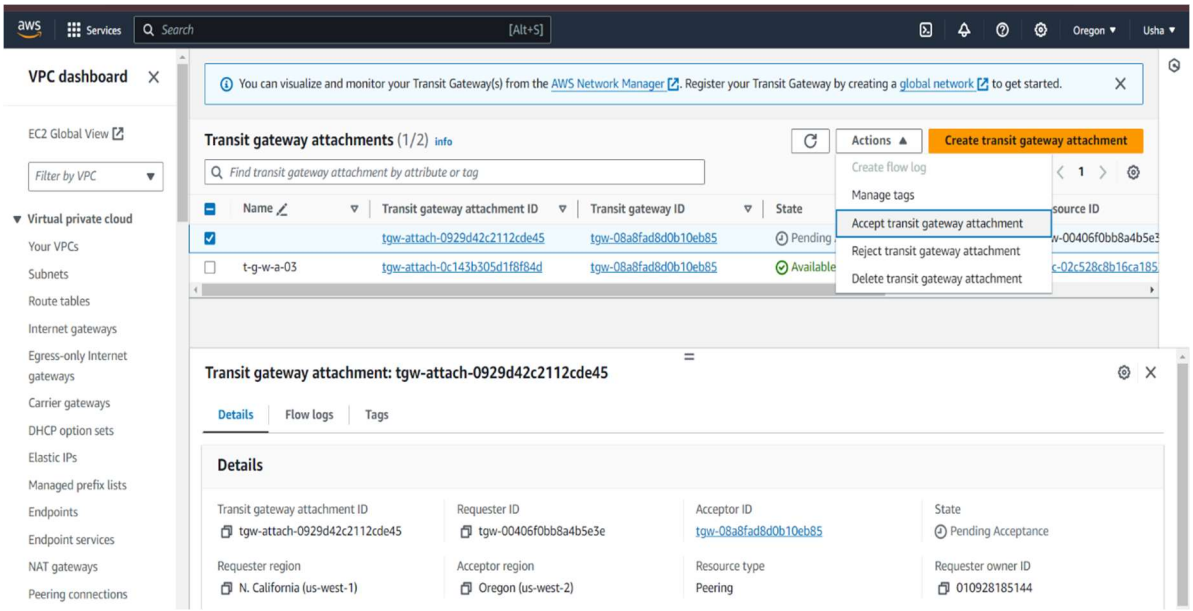
1. Go to transit gateway attachment & Create “Transit Gateway Attachment” & attach to transit gateway.

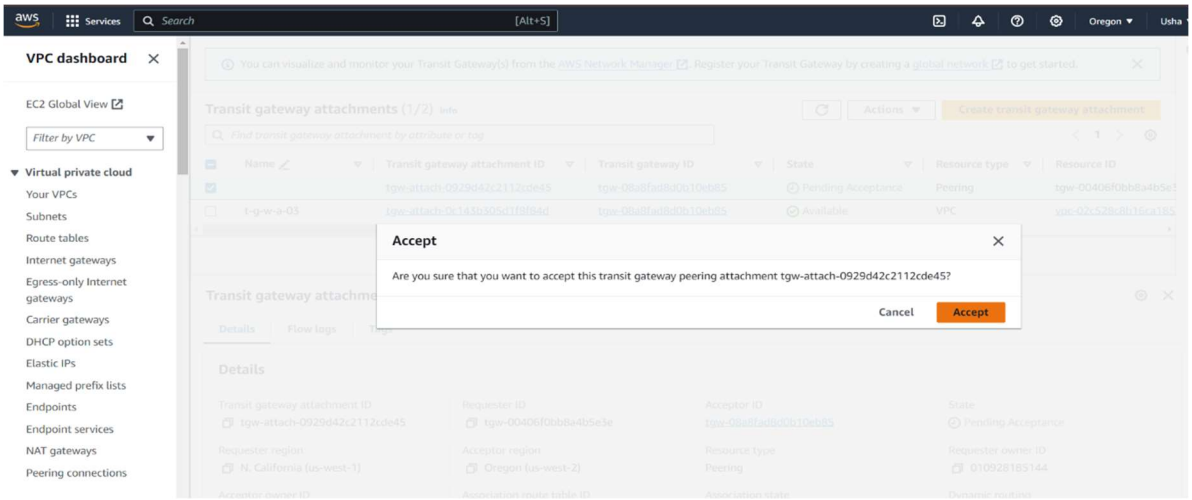
2. while creating transit gateway attachment for single region, select attachment type attach VPC & for two or more regions give PEERING CONNECTION.

3.After sending a request from one region to another region, you must accept the transit gateway attachment request then only it will be available.

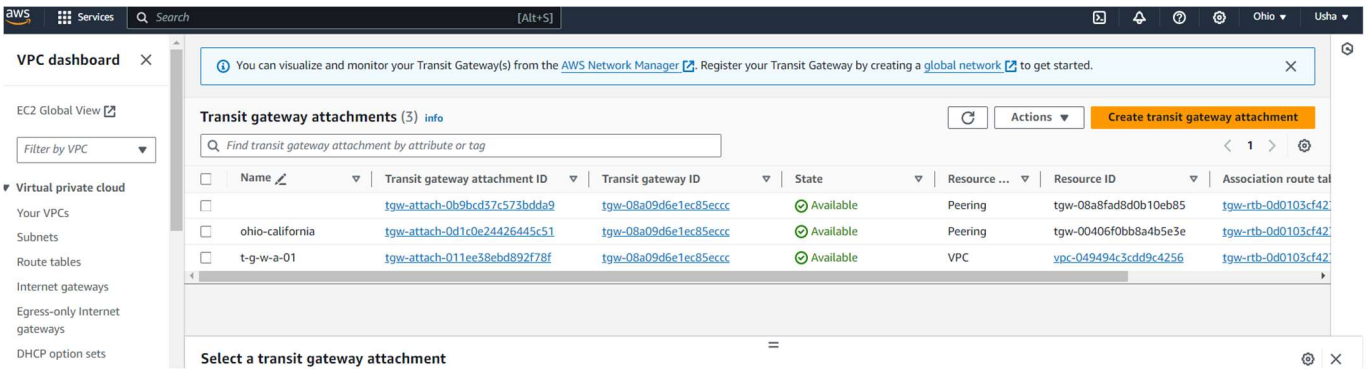
4. some snapshots attached below.

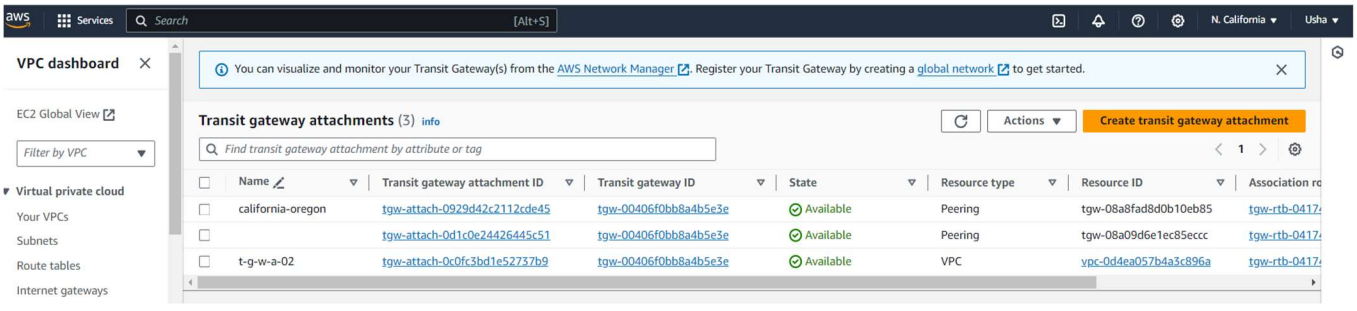


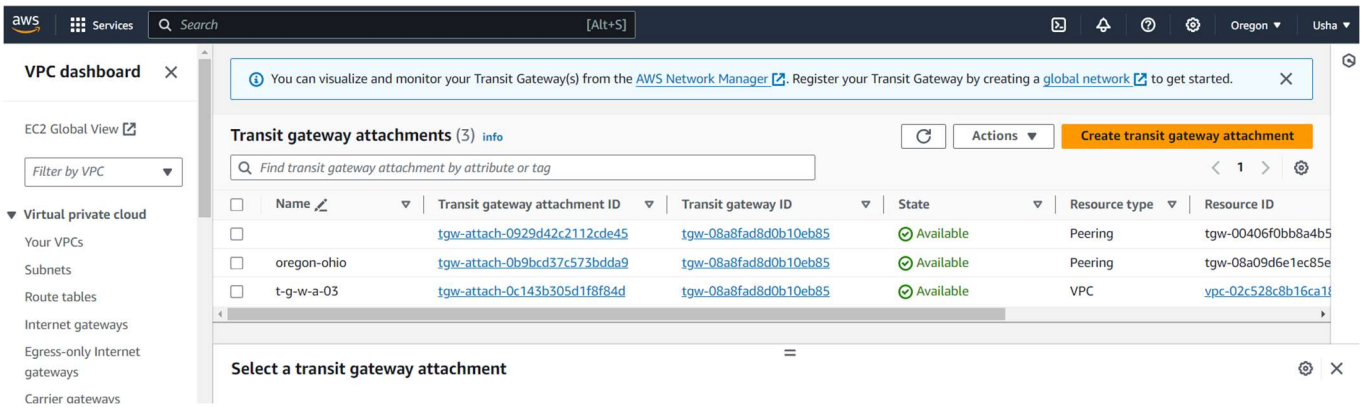




5. Below snapshots shows that transit gateway attachment from region – region. i.e., Ohio-California,California-Oregon,Oregon-Ohio.





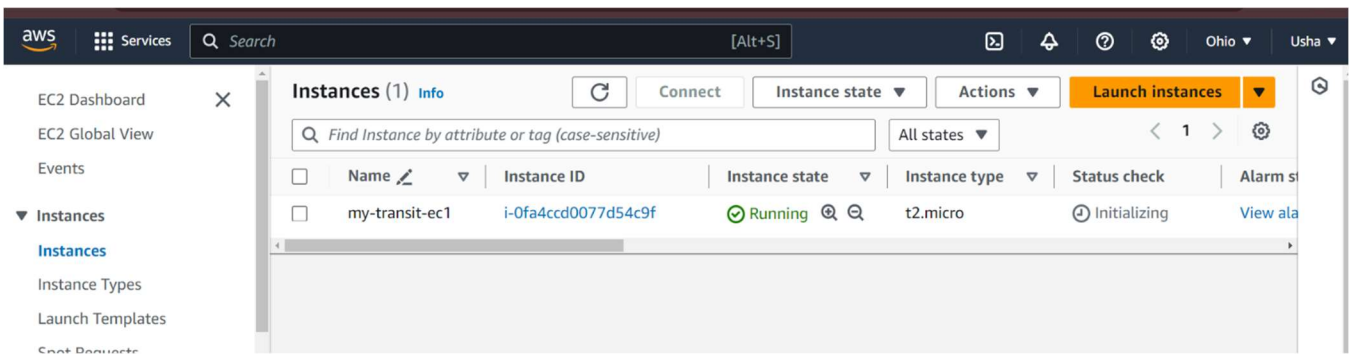


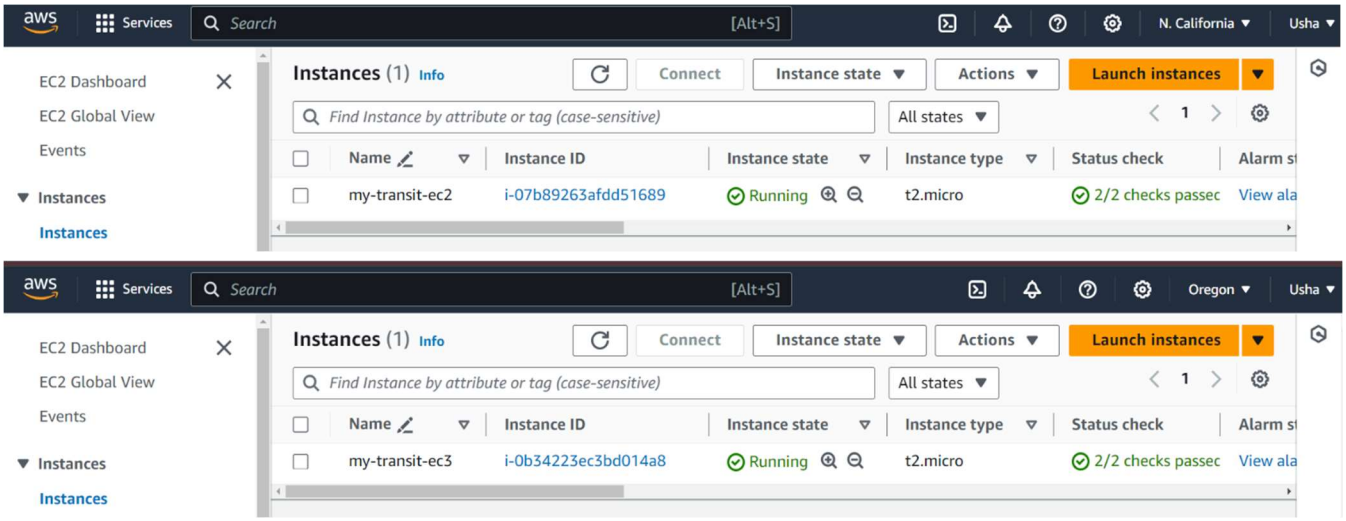
➢ Create EC2 instance:

1. create three EC2 Instance for three VPCs.

2. Go to instance –launch instance – create key pair—network(edit)—select security group – launch instance.

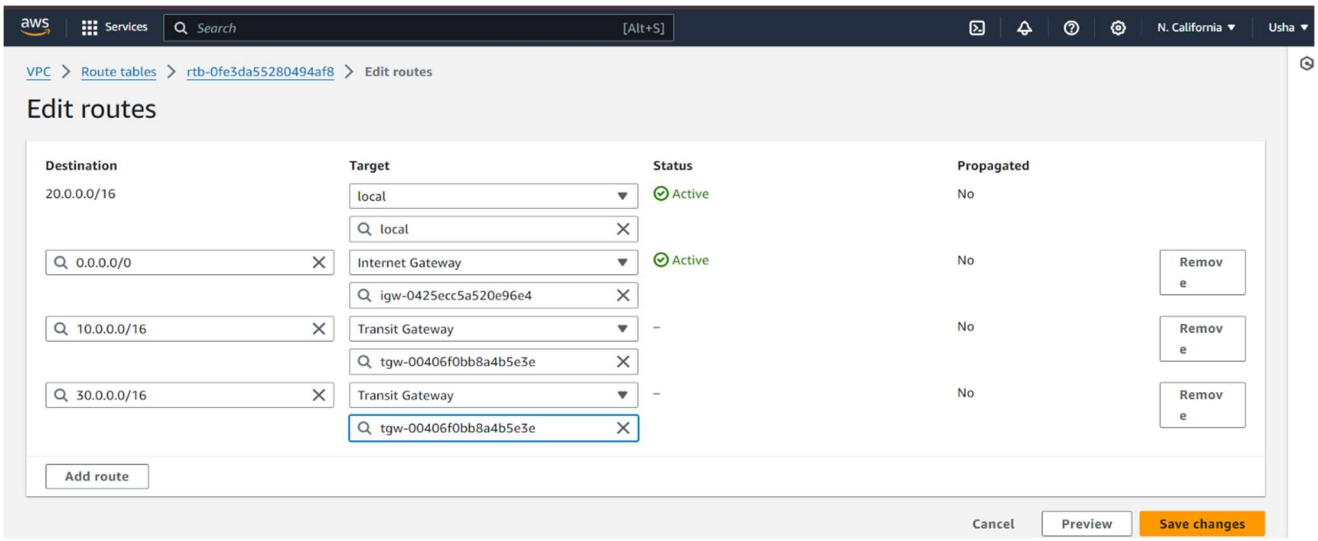
3. some EC2 snapshots are attached below.

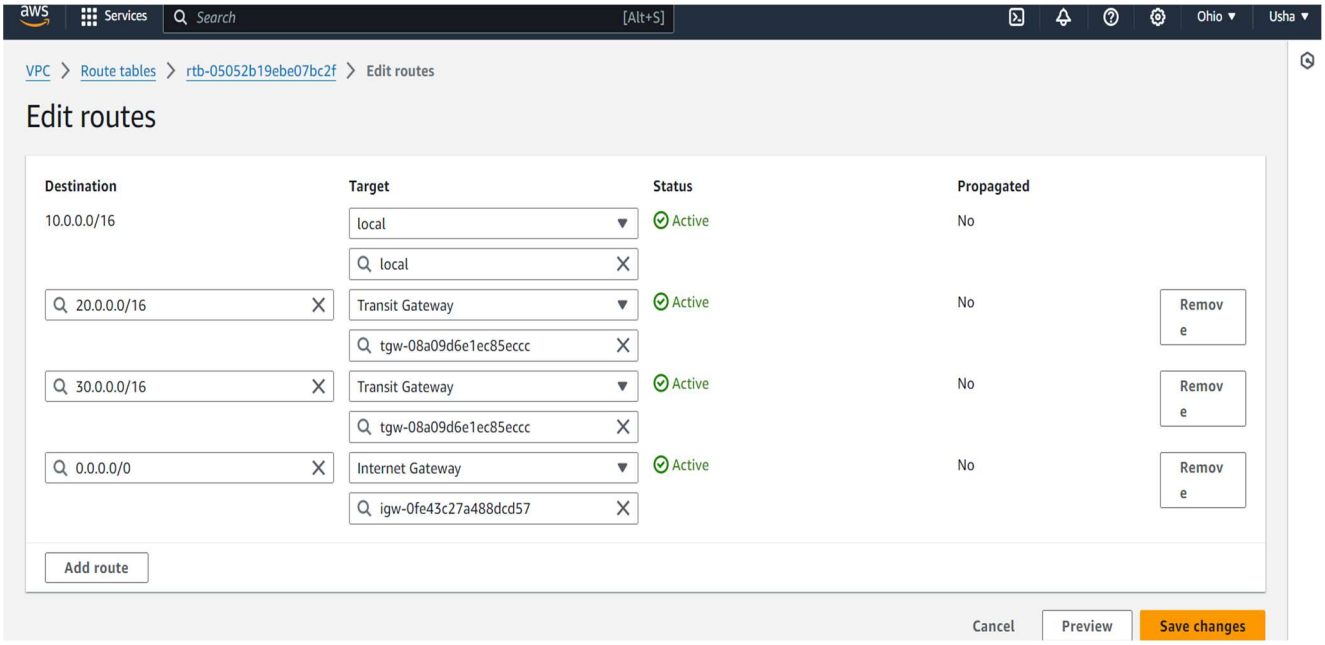


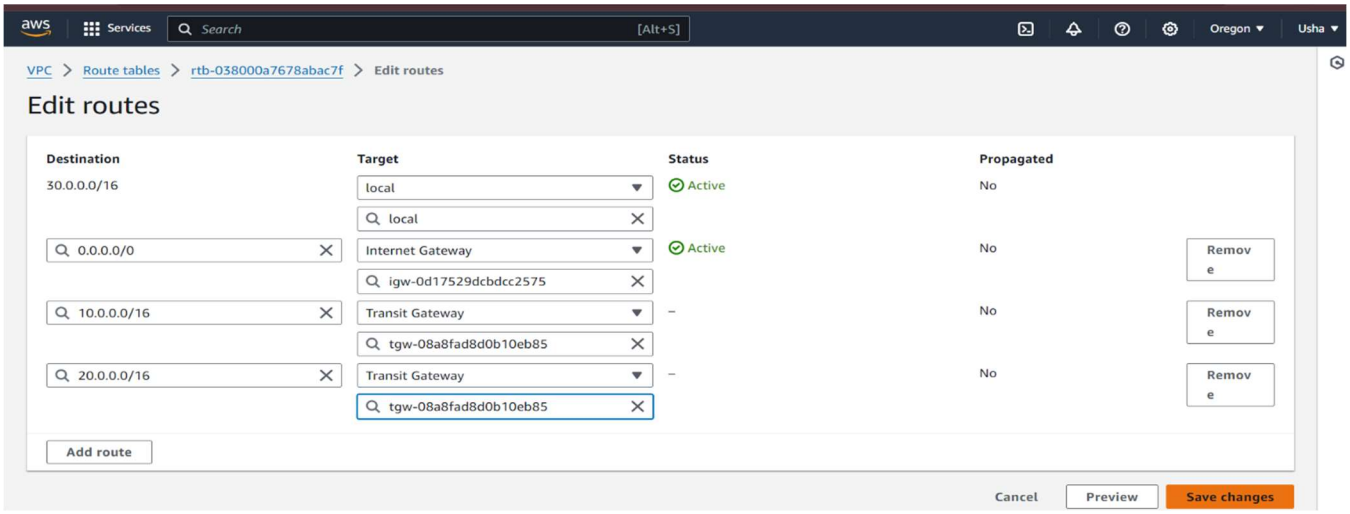


4. After creating EC2 Instances, go to route tables & edit the routes &save changes.

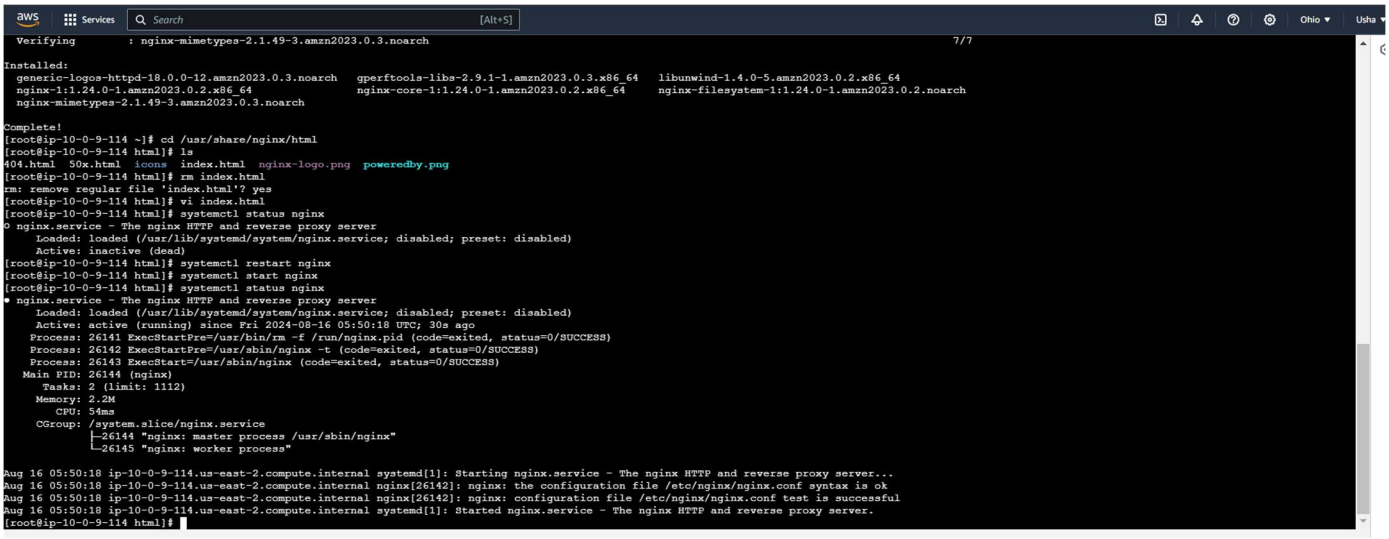
5. Some snapshots of route tables are given below.



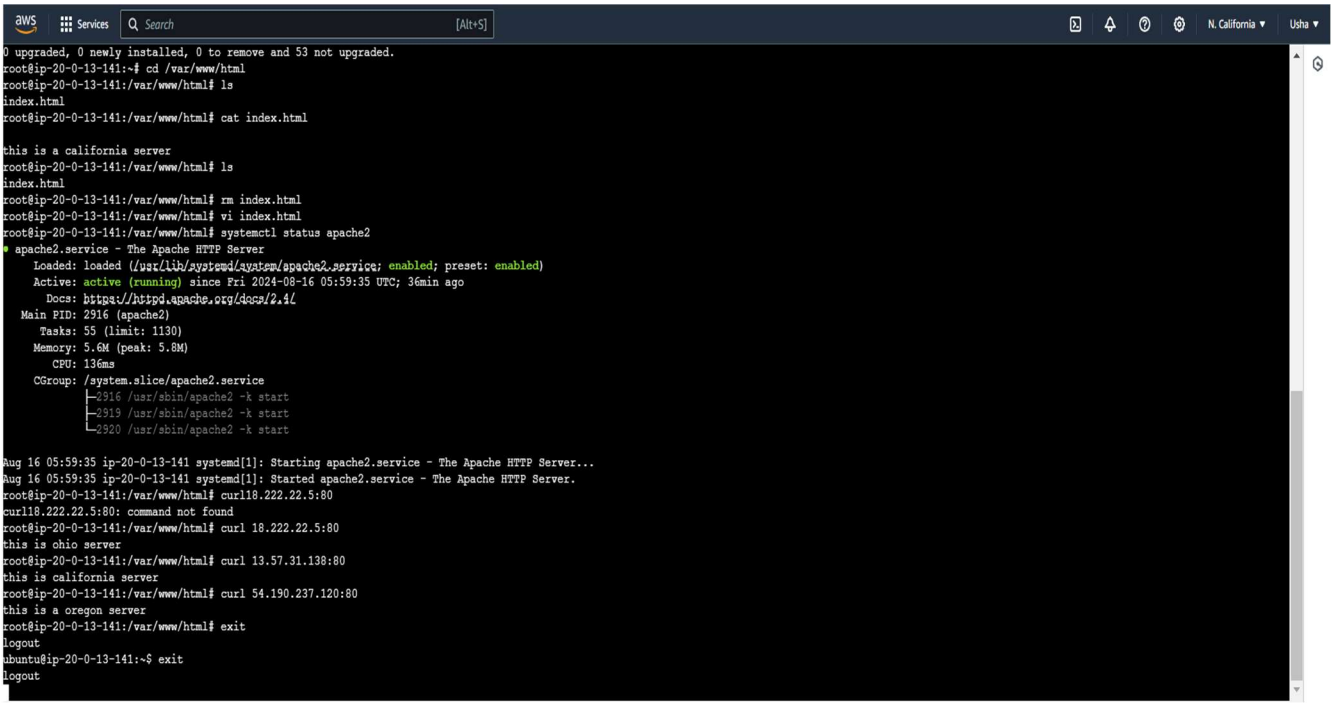


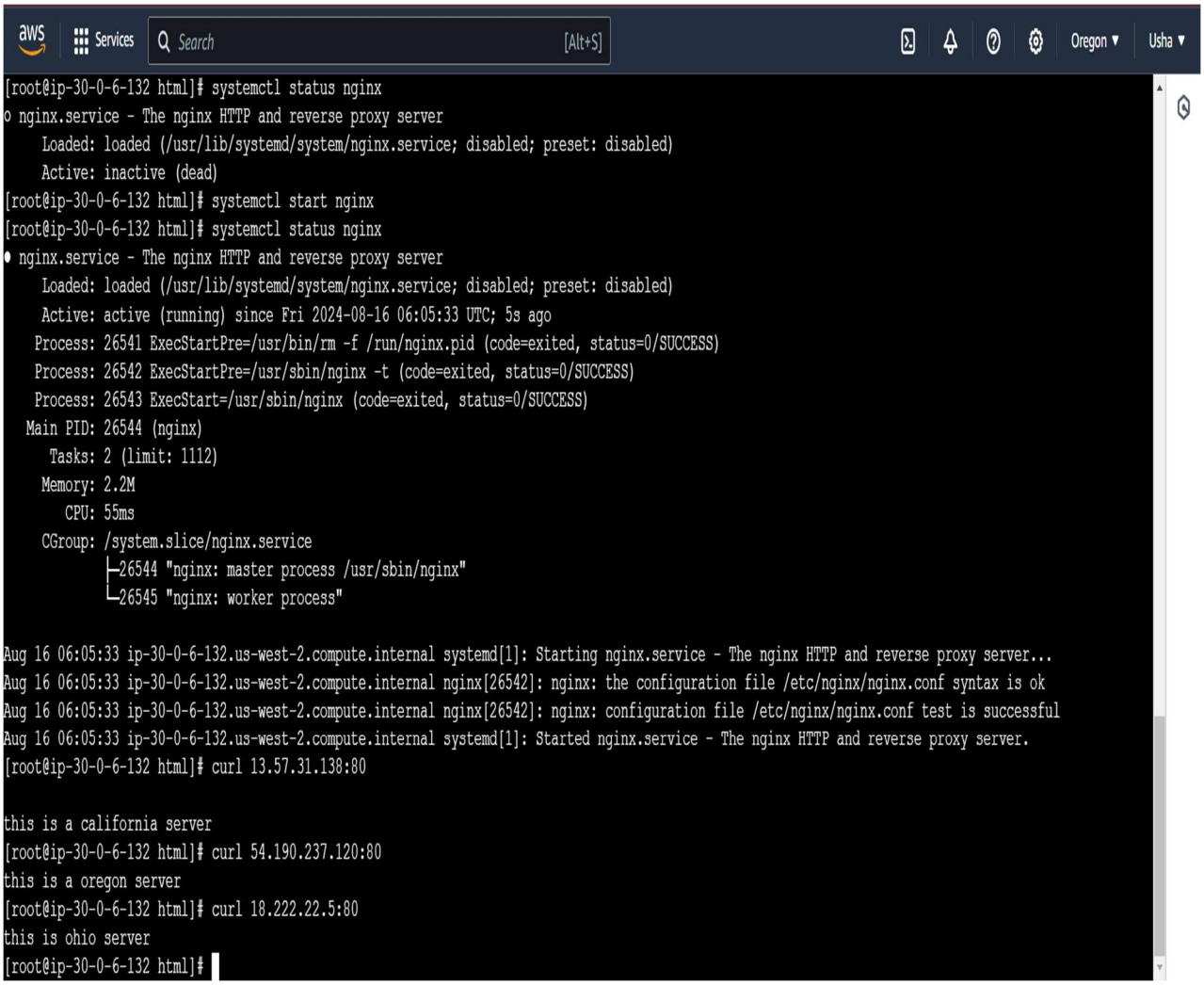


6. Goto the EC2 Instance click on connect – copy The SSH and paste it in git bash & connect.
7. Directly connect to the server through EC2 Instance.


aws
Services
Search
[Alt+S]
Ohio
Usha
Verifying : nginx-mimetypes-2.1.49-3.amzn2023.0.3.noarch 7/7
Installed:
generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch
gperftools-libs-2.9.1-1.amzn2023.0.3.x86_64
libunwind-1.4.0-5.amzn2023.0.2.x86_64
nginx-1:1.24.0-1.amzn2023.0.2.x86_64
nginx-core-1:1.24.0-1.amzn2023.0.2.x86_64
nginx-filesystem-1:1.24.0-1.amzn2023.0.2.noarch
nginx-mimetypes-2.1.49-3.amzn2023.0.3.noarch
Complete!
[root@ip-10-0-9-114 ~]# cd /usr/share/nginx/html
[root@ip-10-0-9-114 html]# ls
404.html 50x.html icons index.html nginx-logo.png poweredby.png
[root@ip-10-0-9-114 html]# rm index.html
rm: remove regular file 'index.html'? yes
[root@ip-10-0-9-114 html]# vi index.html
[root@ip-10-0-9-114 html]# systemctl status nginx
○ 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-10-0-9-114 html]# systemctl restart nginx
[root@ip-10-0-9-114 html]# systemctl start nginx
[root@ip-10-0-9-114 html]# systemctl status nginx
● nginx.service - The nginx HTTP and reverse proxy server
Loaded: loaded (/usr/lib/systemd/system/nginx.service; disabled; preset: disabled)
Active: active (running) since Fri 2024-08-16 05:50:18 UTC; 30s ago
Process: 26141 ExecStartPre=/usr/bin/rm -f /run/nginx.pid (code=exited, status=0/SUCCESS)
Process: 26142 ExecStartPre=/usr/sbin/nginx -t (code=exited, status=0/SUCCESS)
Process: 26143 ExecStart=/usr/sbin/nginx (code=exited, status=0/SUCCESS)
Main PID: 26144 (nginx)
Tasks: 2 (limit: 1112)
Memory: 2.2M
CPU: 54ms
CGroup: /system.slice/nginx.service
├─26144 "nginx: master process /usr/sbin/nginx"
└─26145 "nginx: worker process"
Aug 16 05:50:18 ip-10-0-9-114.us-east-2.compute.internal systemd[1]: Starting nginx.service - The nginx HTTP and reverse proxy server...
Aug 16 05:50:18 ip-10-0-9-114.us-east-2.compute.internal nginx[26142]: nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
Aug 16 05:50:18 ip-10-0-9-114.us-east-2.compute.internal nginx[26142]: nginx: configuration file /etc/nginx/nginx.conf test is successful
Aug 16 05:50:18 ip-10-0-9-114.us-east-2.compute.internal systemd[1]: Started nginx.service - The nginx HTTP and reverse proxy server.
[root@ip-10-0-9-114 html]#

➢ OUTPUT:


aws
Services
Search
[Alt+S]
N. California
Usha
0 upgraded, 0 newly installed, 0 to remove and 53 not upgraded.
root@ip-20-0-13-141:~# cd /var/www/html
root@ip-20-0-13-141:/var/www/html# ls
index.html
root@ip-20-0-13-141:/var/www/html# cat index.html
this is a california server
root@ip-20-0-13-141:/var/www/html# ls
index.html
root@ip-20-0-13-141:/var/www/html# rm index.html
root@ip-20-0-13-141:/var/www/html# vi index.html
root@ip-20-0-13-141:/var/www/html# systemctl status apache2
● apache2.service - The Apache HTTP Server
Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
Active: active (running) since Fri 2024-08-16 05:59:35 UTC; 36min ago
Docs: https://httpd.apache.org/docs/2.4/
Main PID: 2916 (apache2)
Tasks: 55 (limit: 1130)
Memory: 5.6M (peak: 5.8M)
CPU: 136ms
CGroup: /system.slice/apache2.service
├─2916 /usr/sbin/apache2 -k start
├─2919 /usr/sbin/apache2 -k start
└─2920 /usr/sbin/apache2 -k start
Aug 16 05:59:35 ip-20-0-13-141 systemd[1]: Starting apache2.service - The Apache HTTP Server...
Aug 16 05:59:35 ip-20-0-13-141 systemd[1]: Started apache2.service - The Apache HTTP Server.
root@ip-20-0-13-141:/var/www/html# curl18.222.22.5:80
curl18.222.22.5:80: command not found
root@ip-20-0-13-141:/var/www/html# curl 18.222.22.5:80
this is ohio server
root@ip-20-0-13-141:/var/www/html# curl 13.57.31.138:80
this is california server
root@ip-20-0-13-141:/var/www/html# curl 54.190.237.120:80
this is a oregon server
root@ip-20-0-13-141:/var/www/html# exit
logout
ubuntu@ip-20-0-13-141:~$ exit
logout


aws
Services
Search
[Alt+S]
Oregon
Usha
[root@ip-30-0-6-132 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-30-0-6-132 html]# systemctl start nginx
[root@ip-30-0-6-132 html]# systemctl status nginx
● nginx.service - The nginx HTTP and reverse proxy server
Loaded: loaded (/usr/lib/systemd/system/nginx.service; disabled; preset: disabled)
Active: active (running) since Fri 2024-08-16 06:05:33 UTC; 5s ago
Process: 26541 ExecStartPre=/usr/bin/rm -f /run/nginx.pid (code=exited, status=0/SUCCESS)
Process: 26542 ExecStartPre=/usr/sbin/nginx -t (code=exited, status=0/SUCCESS)
Process: 26543 ExecStart=/usr/sbin/nginx (code=exited, status=0/SUCCESS)
Main PID: 26544 (nginx)
Tasks: 2 (limit: 1112)
Memory: 2.2M
CPU: 55ms
CGroup: /system.slice/nginx.service
├─26544 "nginx: master process /usr/sbin/nginx"
└─26545 "nginx: worker process"
Aug 16 06:05:33 ip-30-0-6-132.us-west-2.compute.internal systemd[1]: Starting nginx.service - The nginx HTTP and reverse proxy server...
Aug 16 06:05:33 ip-30-0-6-132.us-west-2.compute.internal nginx[26542]: nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
Aug 16 06:05:33 ip-30-0-6-132.us-west-2.compute.internal nginx[26542]: nginx: configuration file /etc/nginx/nginx.conf test is successful
Aug 16 06:05:33 ip-30-0-6-132.us-west-2.compute.internal systemd[1]: Started nginx.service - The nginx HTTP and reverse proxy server.
[root@ip-30-0-6-132 html]# curl 13.57.31.138:80
this is a california server
[root@ip-30-0-6-132 html]# curl 54.190.237.120:80
this is a oregon server
[root@ip-30-0-6-132 html]# curl 18.222.22.5:80
this is ohio server
[root@ip-30-0-6-132 html]#