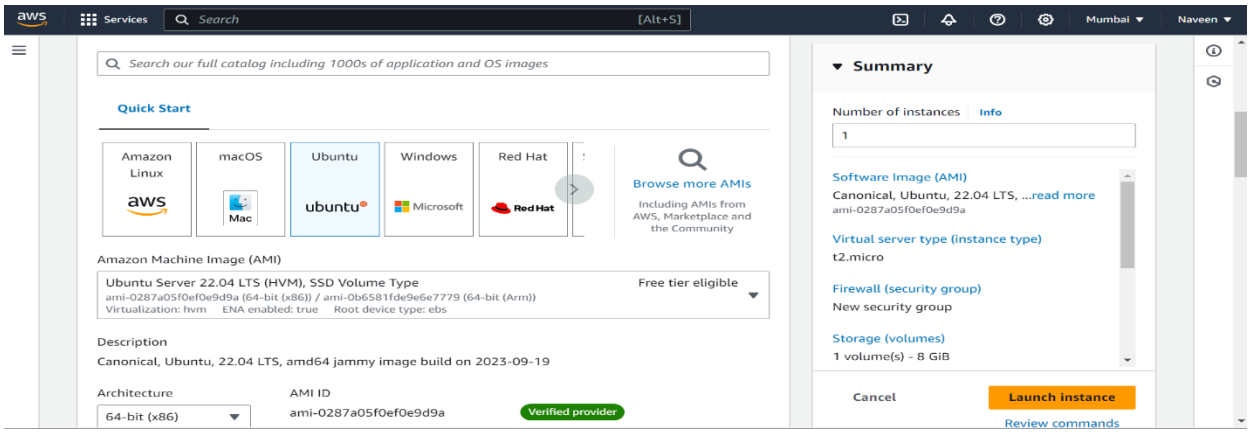
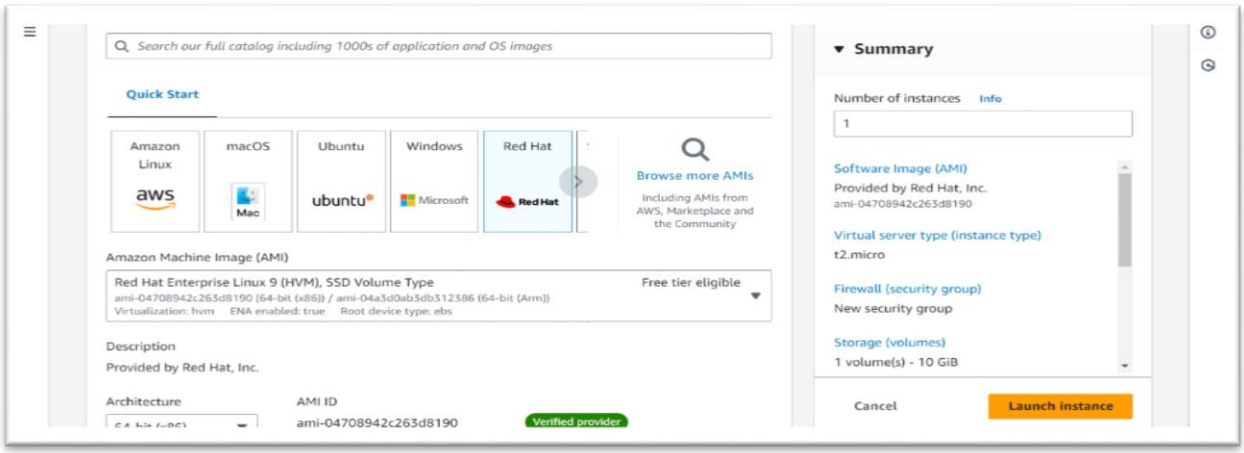
Tasks to Be Performed: (Introduction to EC2,EBS,EFS)

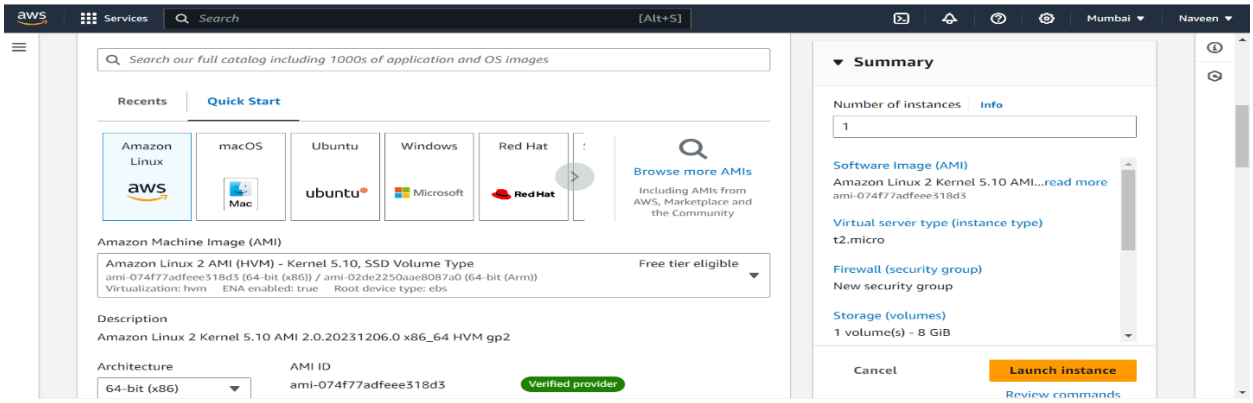
Create an EFS and Connect to 3 different EC2 instance. Make sure that all instances have different operating systems. For instance, Ubuntu, Red Hat Linux and Amazon Linux 2

Steps:

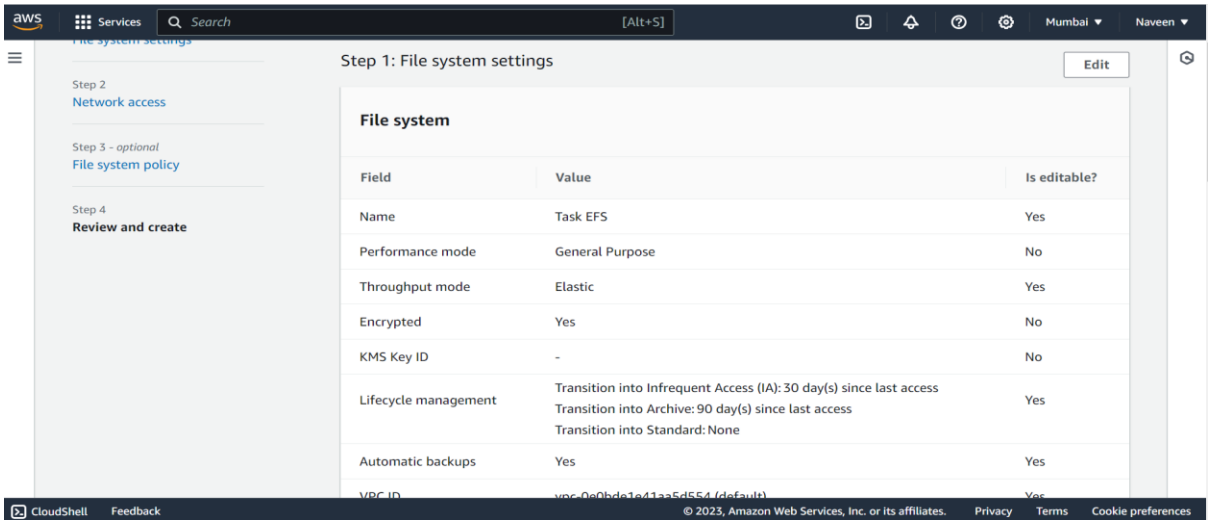
- Create 3 EC2 instance with different operating system (Instance operating system are Ubuntu, Red Hat Linux and Amazon Linux 2)



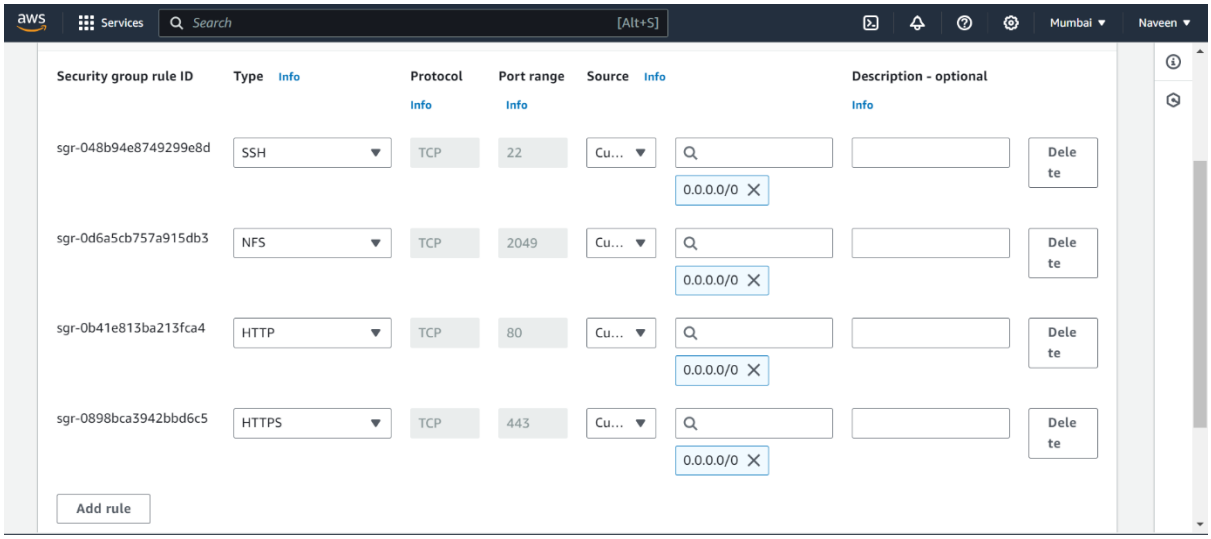




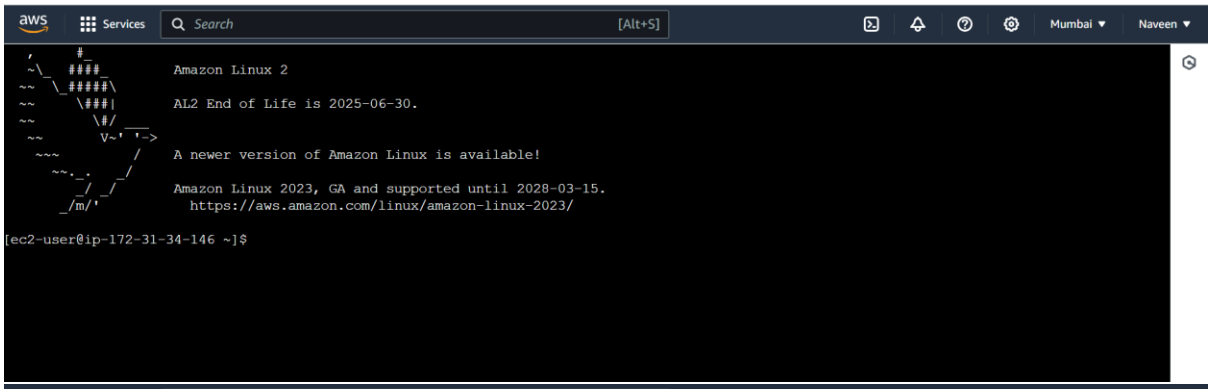
- Create a EFS (elastic file system)



- Edit Inbound security rules by adding NFS port 2049



- Connect to all Three EC2 instance
- Update the EC2 and Install NFS client
- Create a directory and EFS click attach and Mount your instance and add the Directory name
- Check the EFS have mounted by running a common **df –h**
- Create a file in any one of the instance by Enter into the directory
- Enter into other two directory. The files with are created in the first instance will reflect in the other two instance


aws
Services
Search
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Mumbai
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Amazon Linux 2
AL2 End of Life is 2025-06-30.
A newer version of Amazon Linux is available!
Amazon Linux 2023, GA and supported until 2028-03-15.
https://aws.amazon.com/linux/amazon-linux-2023/
[ec2-user@ip-172-31-34-146 ~]$

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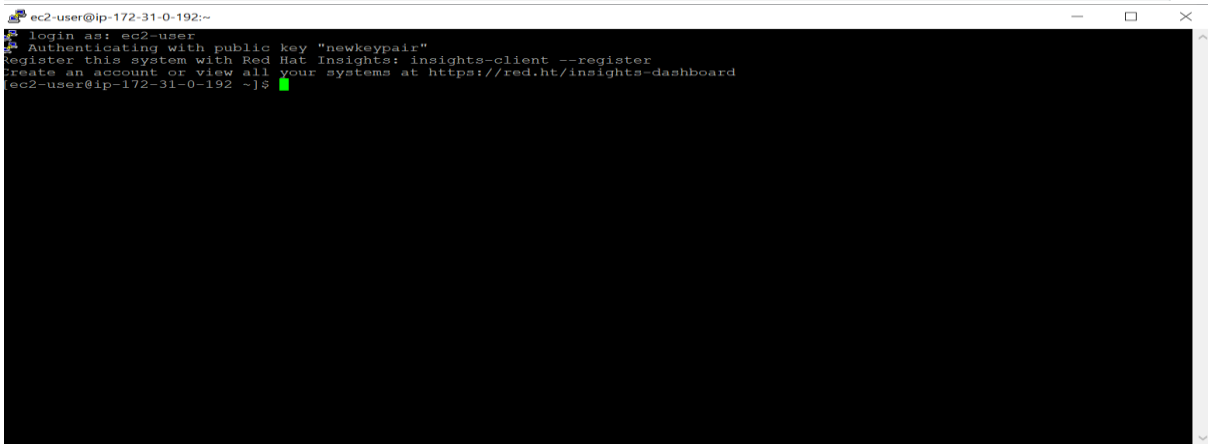
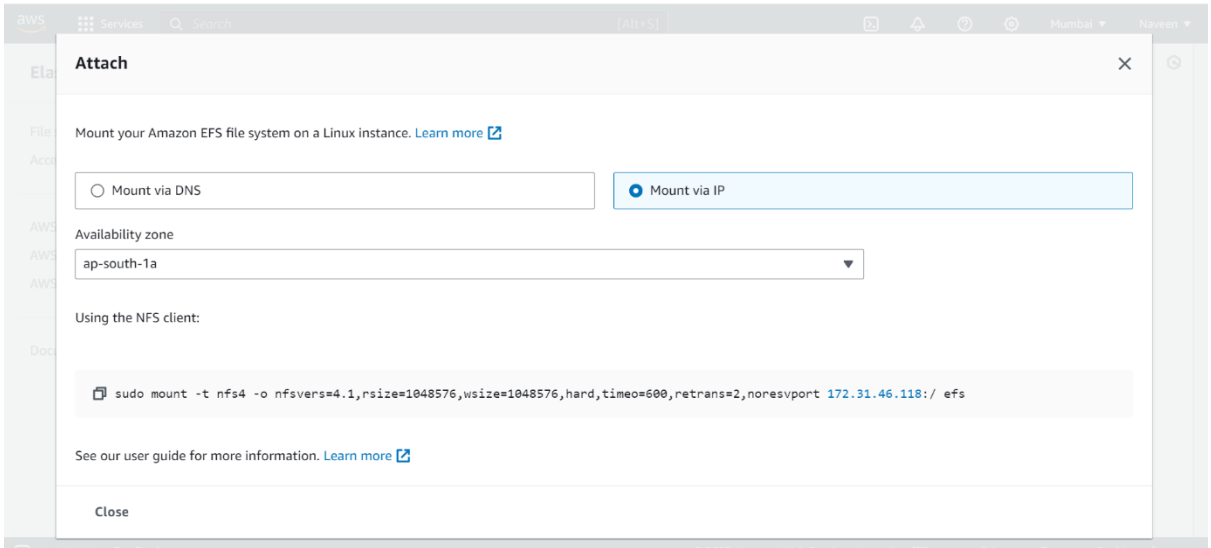
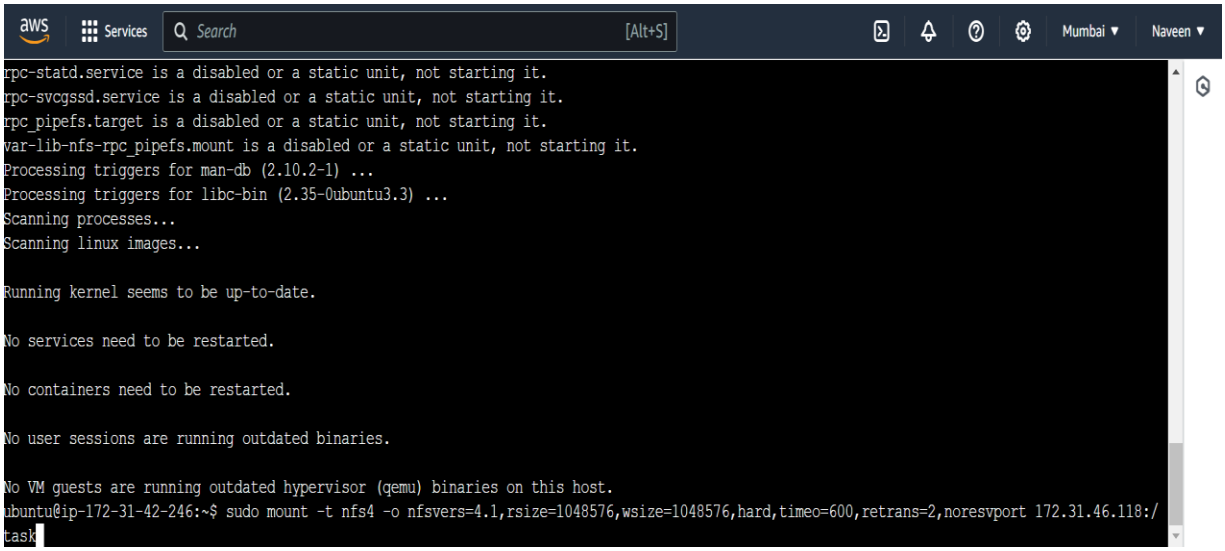
Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status
The list of available updates is more than a week old.
To check for new updates run: sudo apt update
The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
ubuntu@ip-172-31-42-246:~$


ec2-user@ip-172-31-0-192:~
login as: ec2-user
Authenticating with public key "newkeypair"
Register this system with Red Hat Insights: insights-client --register
Create an account or view all your systems at https://red.ht/insights-dashboard
[ec2-user@ip-172-31-0-192 ~]$


Attach
Mount your Amazon EFS file system on a Linux instance. Learn more
Mount via DNS
Mount via IP
Availability zone
ap-south-1a
Using the NFS client:
sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,retrans=2,noresvport 172.31.46.118:/ efs
See our user guide for more information. Learn more
Close


aws
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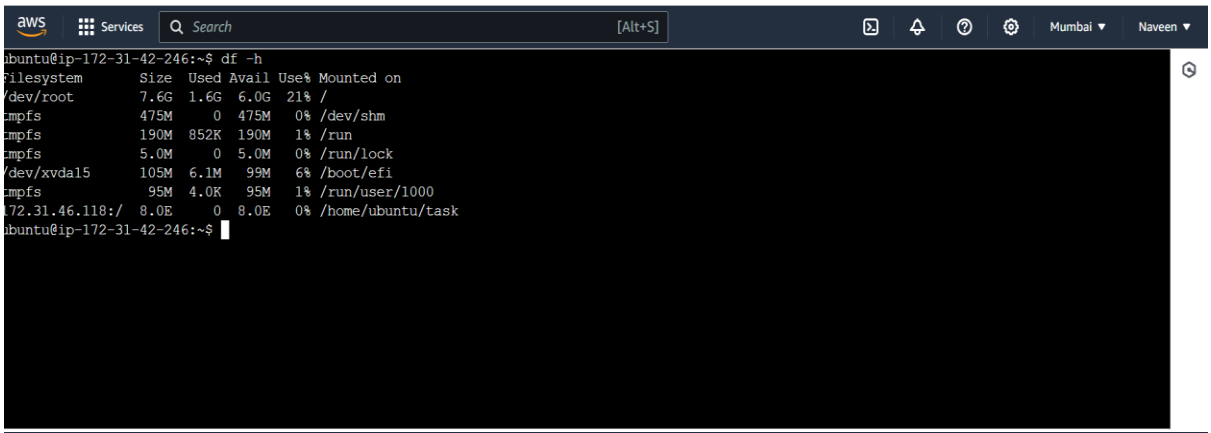
rpc-statd.service is a disabled or a static unit, not starting it.
rpc-svcgssd.service is a disabled or a static unit, not starting it.
rpc_pipefs.target is a disabled or a static unit, not starting it.
var-lib-nfs-rpc_pipefs.mount is a disabled or a static unit, not starting it.
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for libc-bin (2.35-0ubuntu3.3) ...
Scanning processes...
Scanning linux images...
Running kernel seems to be up-to-date.
No services need to be restarted.
No containers need to be restarted.
No user sessions are running outdated binaries.
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-42-246:~$ sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,retrans=2,noresvport 172.31.46.118:/
task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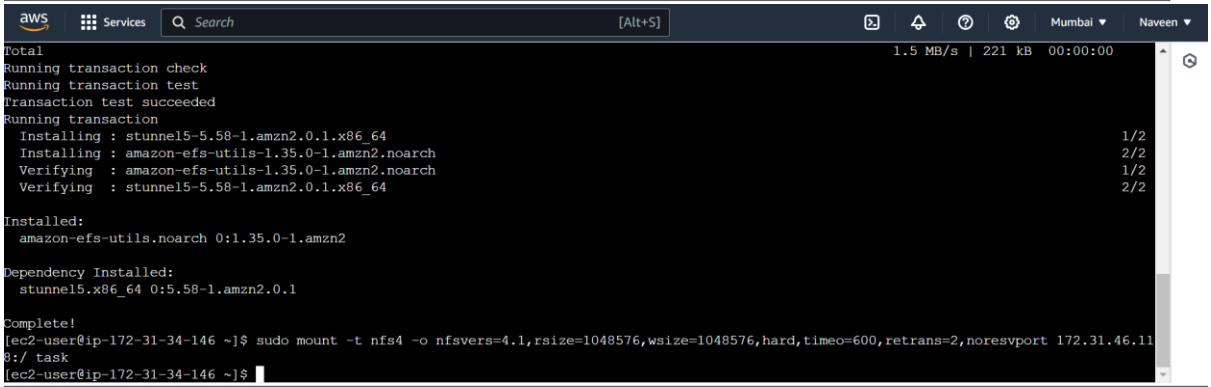
ubuntu@ip-172-31-42-246:~$ df -h
Filesystem Size Used Avail Use% Mounted on
/dev/root 7.6G 1.6G 6.0G 21% /
tmpfs 475M 0 475M 0% /dev/shm
tmpfs 190M 852K 190M 1% /run
tmpfs 5.0M 0 5.0M 0% /run/lock
/dev/xvda15 105M 6.1M 99M 6% /boot/efi
tmpfs 95M 4.0K 95M 1% /run/user/1000
172.31.46.118:/ 8.0E 0 8.0E 0% /home/ubuntu/task
ubuntu@ip-172-31-42-246:~$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Total 1.5 MB/s | 221 kB 00:00:00
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
Installing : stunnel5-5.58-1.amzn2.0.1.x86_64 1/2
Installing : amazon-efs-utils-1.35.0-1.amzn2.noarch 2/2
Verifying : amazon-efs-utils-1.35.0-1.amzn2.noarch 1/2
Verifying : stunnel5-5.58-1.amzn2.0.1.x86_64 2/2
Installed:
amazon-efs-utils.noarch 0:1.35.0-1.amzn2
Dependency Installed:
stunnel5.x86_64 0:5.58-1.amzn2.0.1
Complete!
[ec2-user@ip-172-31-34-146 ~]$ sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,retrans=2,noresvport 172.31.46.11
8:/ task
[ec2-user@ip-172-31-34-146 ~]$

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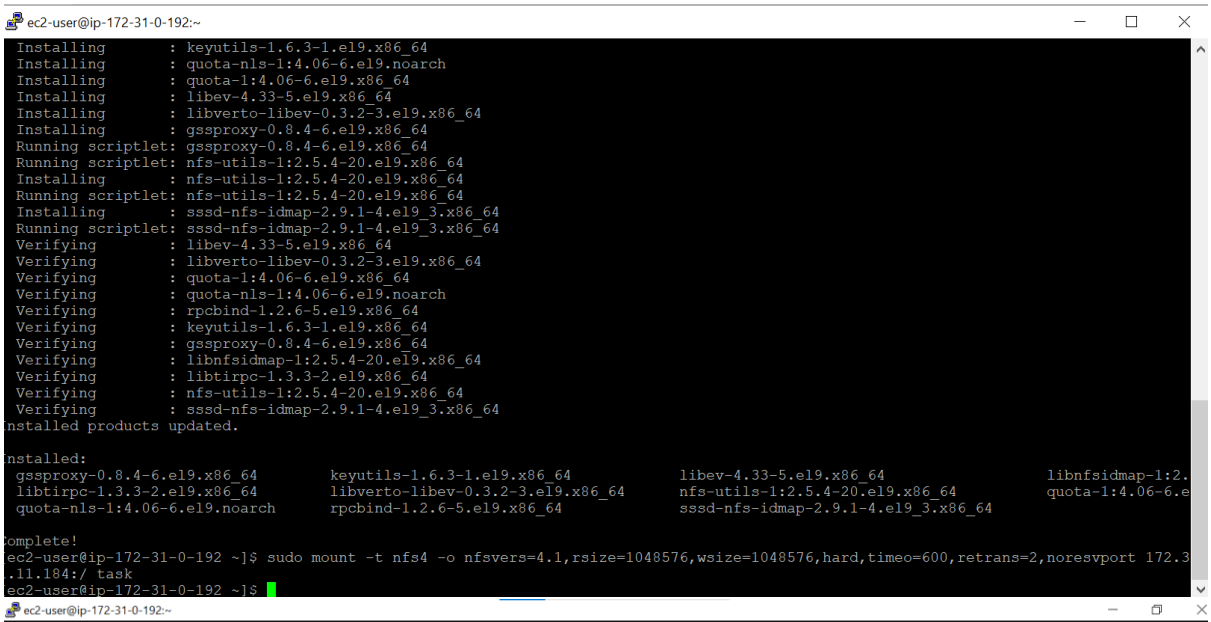
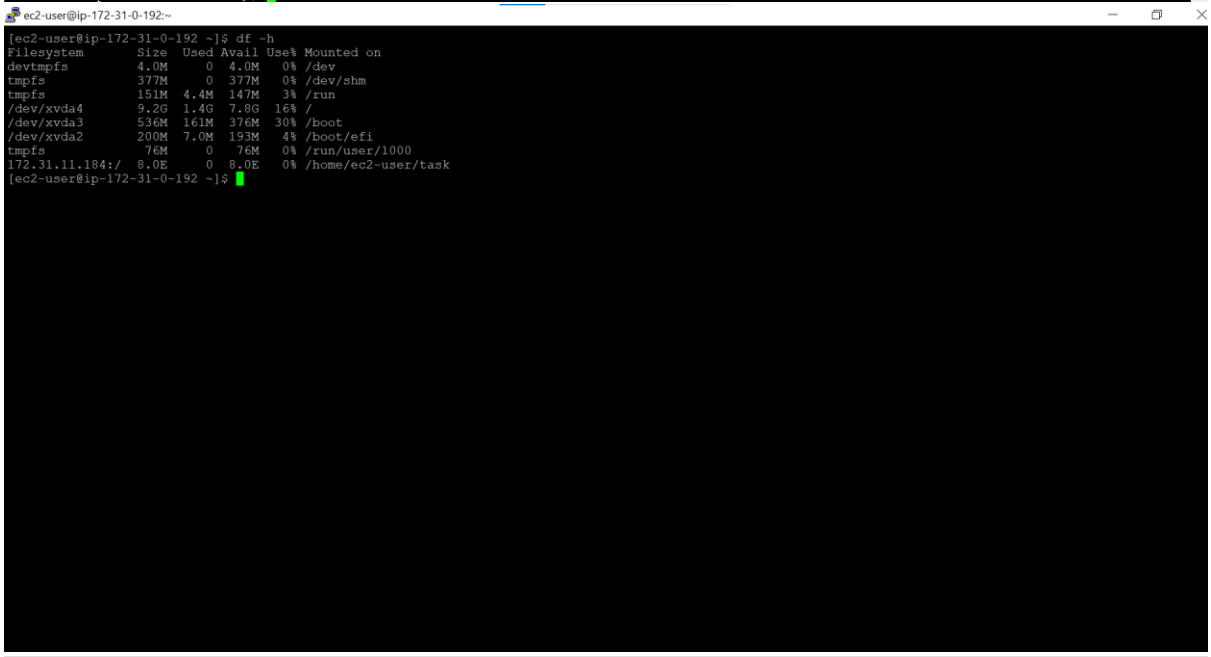
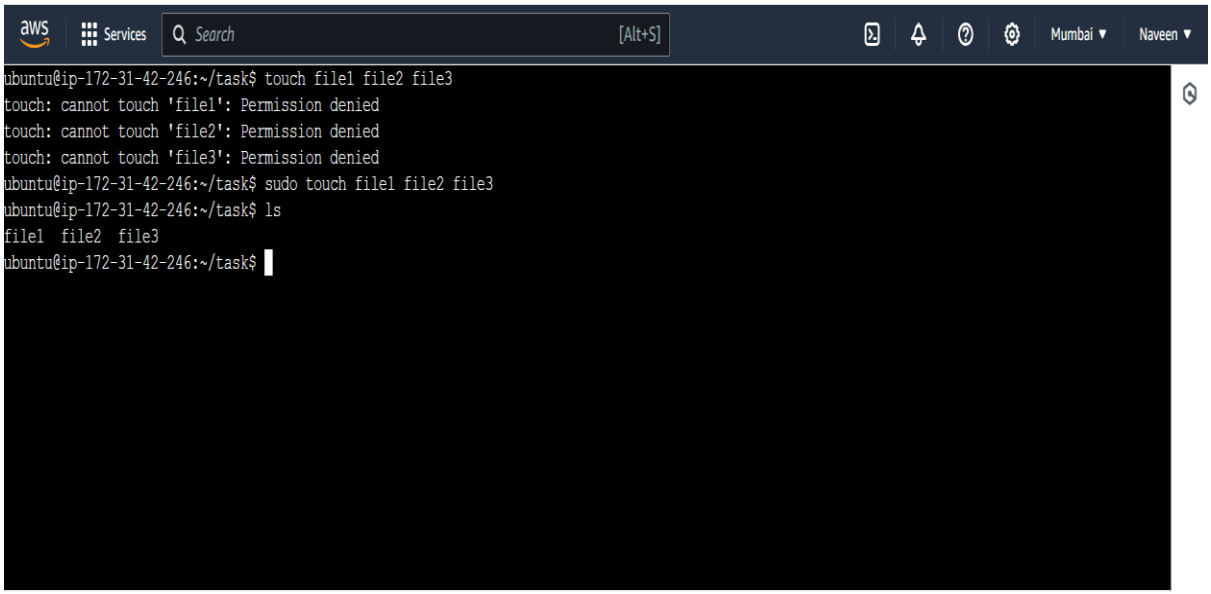
[ec2-user@ip-172-31-34-146 ~]$ df -h
Filesystem Size Used Avail Use% Mounted on
devtmpfs 468M 0 468M 0% /dev
tmpfs 477M 0 477M 0% /dev/shm
tmpfs 477M 412K 476M 1% /run
tmpfs 477M 0 477M 0% /sys/fs/cgroup
/dev/xvda1 8.0G 1.7G 6.4G 21% /
tmpfs 96M 0 96M 0% /run/user/1000
172.31.46.118:/ 8.0E 0 8.0E 0% /home/ec2-user/task
[ec2-user@ip-172-31-34-146 ~]$


ec2-user@ip-172-31-0-192:~
Installing : keyutils-1.6.3-1.el9.x86_64
Installing : quota-nls-1:4.06-6.el9.noarch
Installing : quota-1:4.06-6.el9.x86_64
Installing : libev-4.33-5.el9.x86_64
Installing : libverto-libev-0.3.2-3.el9.x86_64
Installing : gssproxy-0.8.4-6.el9.x86_64
Running scriptlet: gssproxy-0.8.4-6.el9.x86_64
Running scriptlet: nfs-utils-1:2.5.4-20.el9.x86_64
Installing : nfs-utils-1:2.5.4-20.el9.x86_64
Running scriptlet: nfs-utils-1:2.5.4-20.el9.x86_64
Installing : sssd-nfs-idmap-2.9.1-4.el9_3.x86_64
Running scriptlet: sssd-nfs-idmap-2.9.1-4.el9_3.x86_64
Verifying : libev-4.33-5.el9.x86_64
Verifying : libverto-libev-0.3.2-3.el9.x86_64
Verifying : quota-1:4.06-6.el9.x86_64
Verifying : quota-nls-1:4.06-6.el9.noarch
Verifying : rpcbind-1.2.6-5.el9.x86_64
Verifying : keyutils-1.6.3-1.el9.x86_64
Verifying : gssproxy-0.8.4-6.el9.x86_64
Verifying : libnfsidmap-1:2.5.4-20.el9.x86_64
Verifying : libtirpc-1.3.3-2.el9.x86_64
Verifying : nfs-utils-1:2.5.4-20.el9.x86_64
Verifying : sssd-nfs-idmap-2.9.1-4.el9_3.x86_64
nstalled products updated.
nstalled:
gssproxy-0.8.4-6.el9.x86_64 keyutils-1.6.3-1.el9.x86_64 libev-4.33-5.el9.x86_64 libnfsidmap-1:2.
libtirpc-1.3.3-2.el9.x86_64 libverto-libev-0.3.2-3.el9.x86_64 nfs-utils-1:2.5.4-20.el9.x86_64 quota-1:4.06-6.e
quota-nls-1:4.06-6.el9.noarch rpcbind-1.2.6-5.el9.x86_64 sssd-nfs-idmap-2.9.1-4.el9_3.x86_64
omplete!
ec2-user@ip-172-31-0-192 ~]$ sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,retrans=2,noresvport 172.3
.11.184:/ task
ec2-user@ip-172-31-0-192 ~]$


ec2-user@ip-172-31-0-192:~
[ec2-user@ip-172-31-0-192 ~]$ df -h
Filesystem Size Used Avail Use% Mounted on
devtmpfs 4.0M 0 4.0M 0% /dev
tmpfs 377M 0 377M 0% /dev/shm
tmpfs 151M 4.4M 147M 3% /run
/dev/xvda4 9.2G 1.4G 7.8G 16% /
/dev/xvda3 536M 161M 376M 30% /boot
/dev/xvda2 200M 7.0M 193M 4% /boot/efi
tmpfs 76M 0 76M 0% /run/user/1000
172.31.11.184:/ 8.0E 0 8.0E 0% /home/ec2-user/task
[ec2-user@ip-172-31-0-192 ~]$


aws
Services
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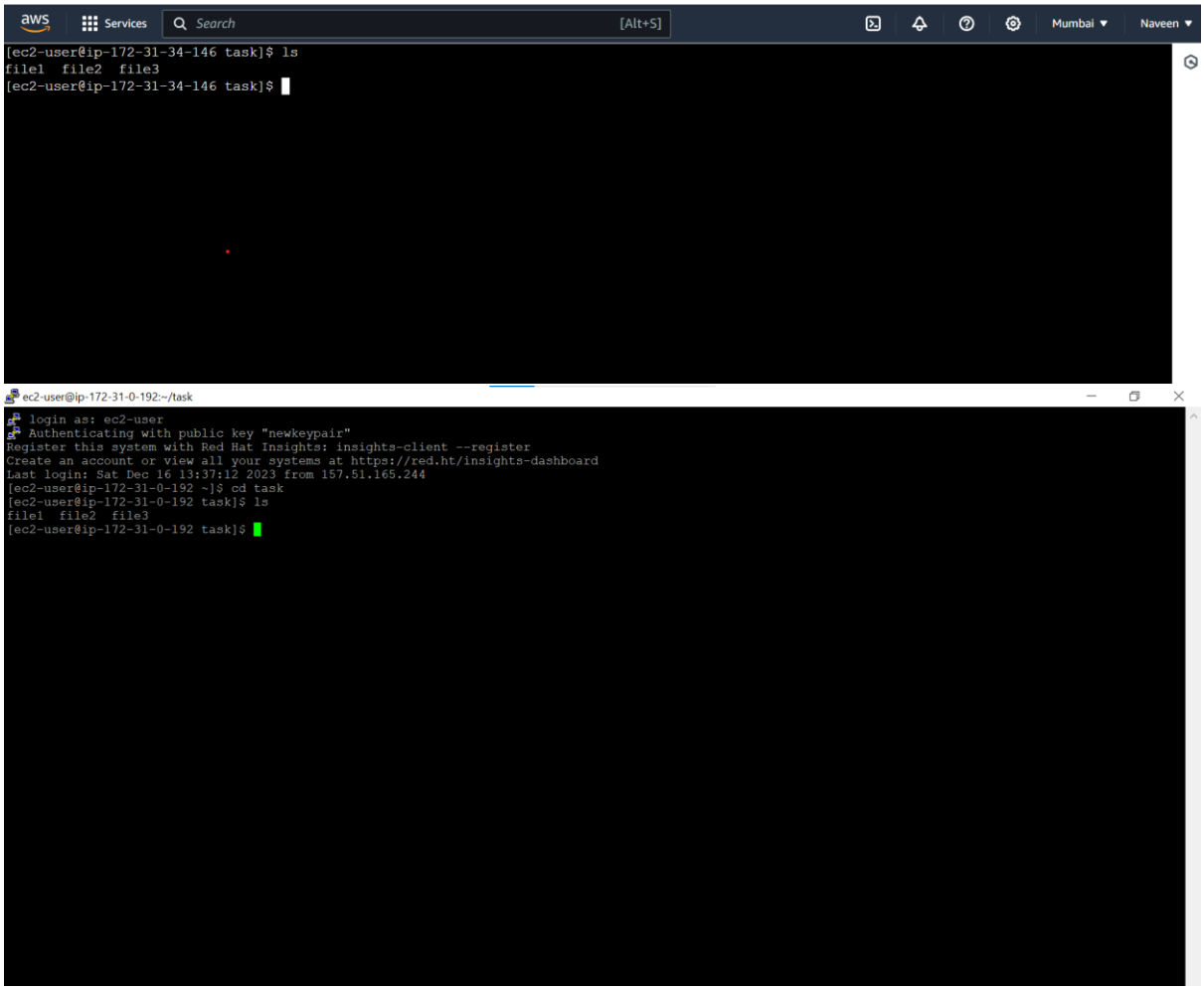
ubuntu@ip-172-31-42-246:~/task$ touch file1 file2 file3
touch: cannot touch 'file1': Permission denied
touch: cannot touch 'file2': Permission denied
touch: cannot touch 'file3': Permission denied
ubuntu@ip-172-31-42-246:~/task$ sudo touch file1 file2 file3
ubuntu@ip-172-31-42-246:~/task$ ls
file1 file2 file3
ubuntu@ip-172-31-42-246:~/task$


aws
Services
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[Alt+S]
Mumbai
Naveen
[ec2-user@ip-172-31-34-146 task]$ ls
file1 file2 file3
[ec2-user@ip-172-31-34-146 task]$
ec2-user@ip-172-31-0-192:~/task
login as: ec2-user
Authenticating with public key "newkeypair"
Register this system with Red Hat Insights: insights-client --register
Create an account or view all your systems at https://red.ht/insights-dashboard
Last login: Sat Dec 16 13:37:12 2023 from 157.51.165.244
[ec2-user@ip-172-31-0-192 ~]$ cd task
[ec2-user@ip-172-31-0-192 task]$ ls
file1 file2 file3
[ec2-user@ip-172-31-0-192 task]$

Problem Statement:

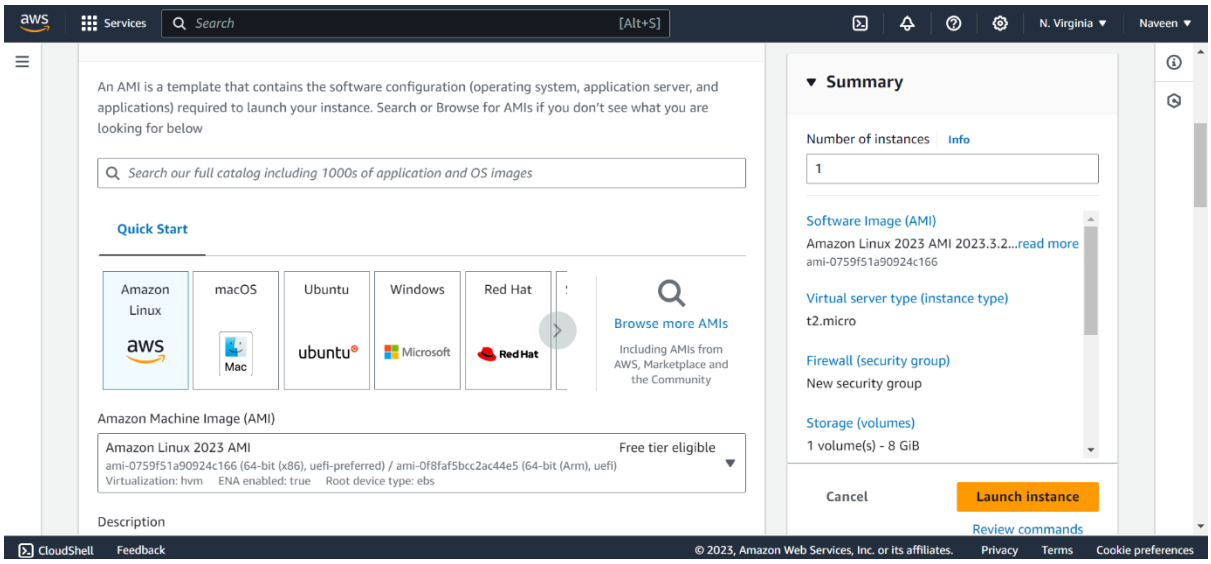
You work for XYZ Corporation. Your corporation is working on an application and they require secured web servers on Linux to launch the application.

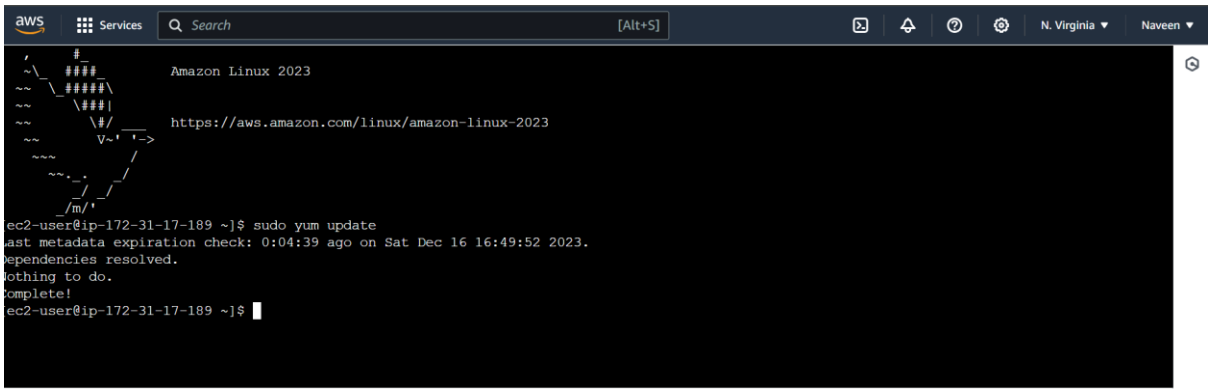
Tasks to be performed:

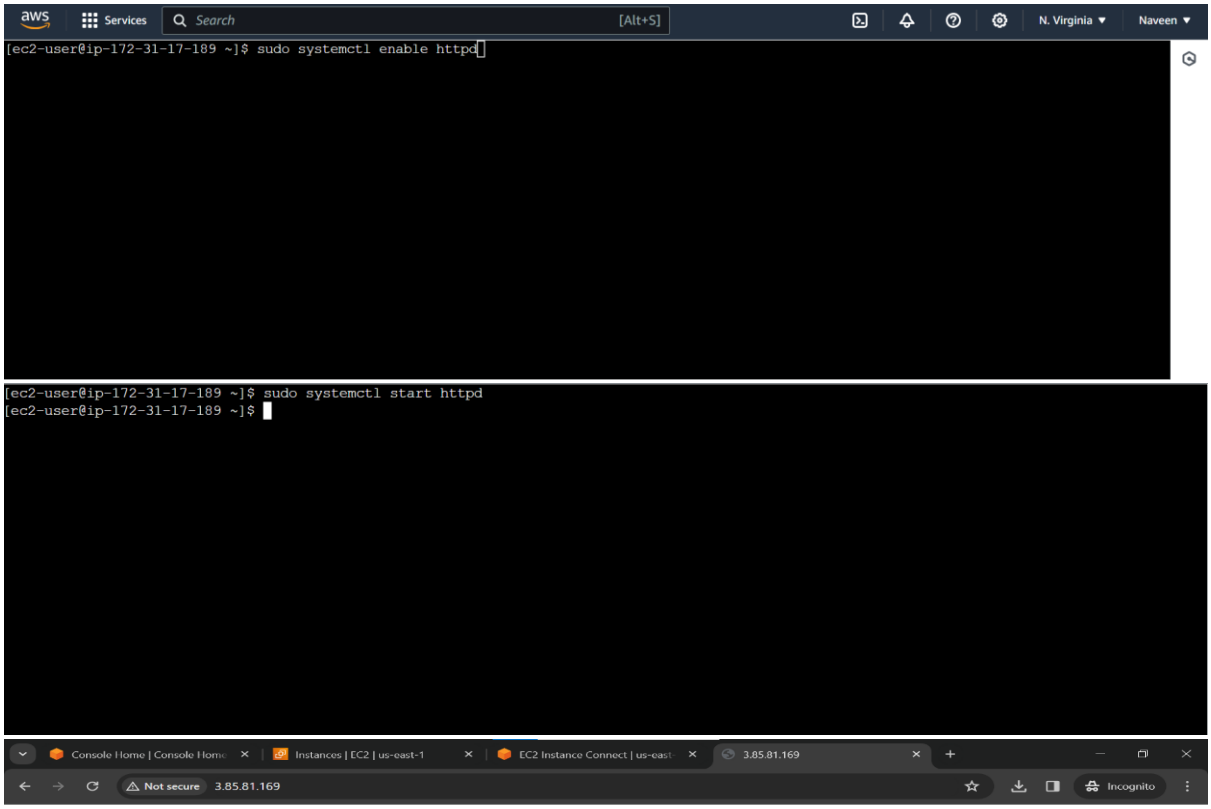
1. Create an instance in the US-East-1 (N. Virginia region with Linux OS and manage the requirement of web servers of your company using AMI
2. Replicate the instance in the US-west-2 (Oregon) region
3. Build two EBS volume and attach them to the instance in the US East-1 (n. Virginia region.
4. Delete one volume after detaching it and extend the size of the other volume.
5. Take backup of this EBS Volume.

Steps:

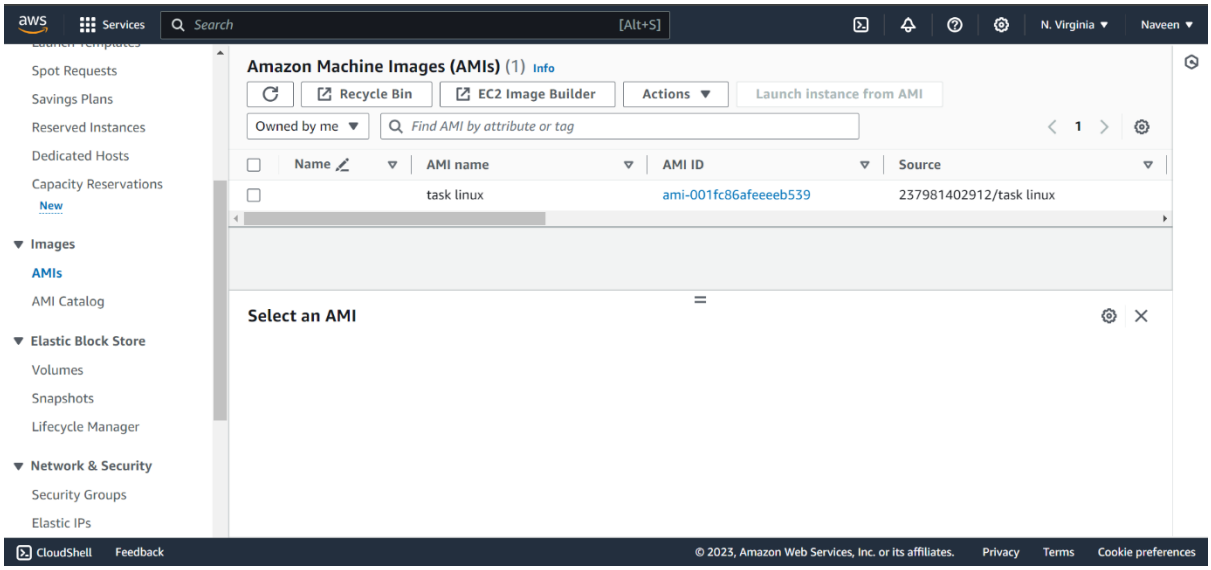
- Create a Linux instance in US-East-1 (N. Verginia) region and host a web server

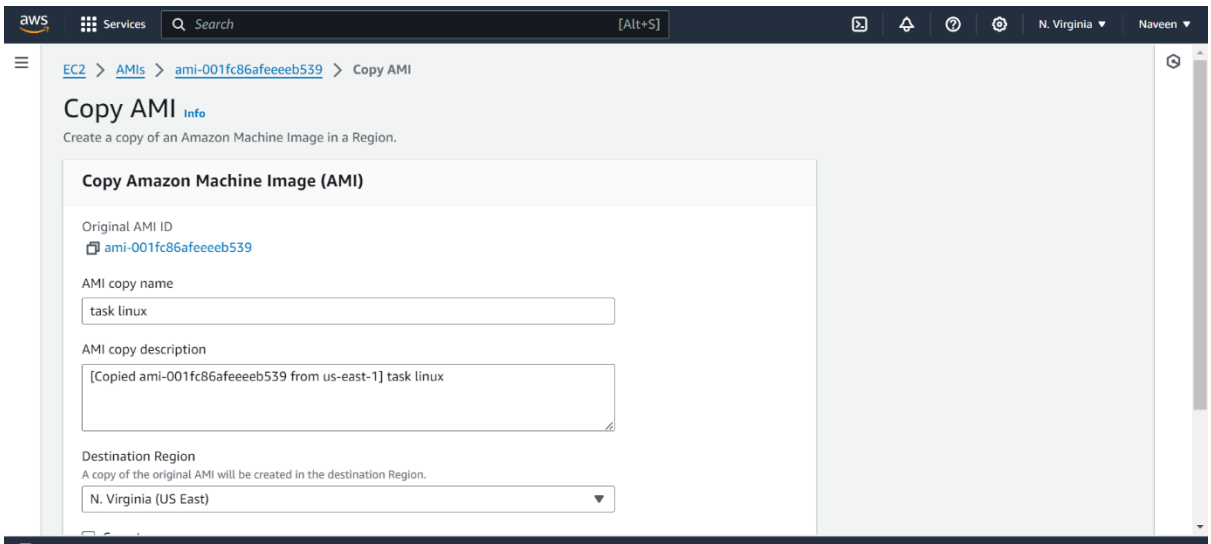


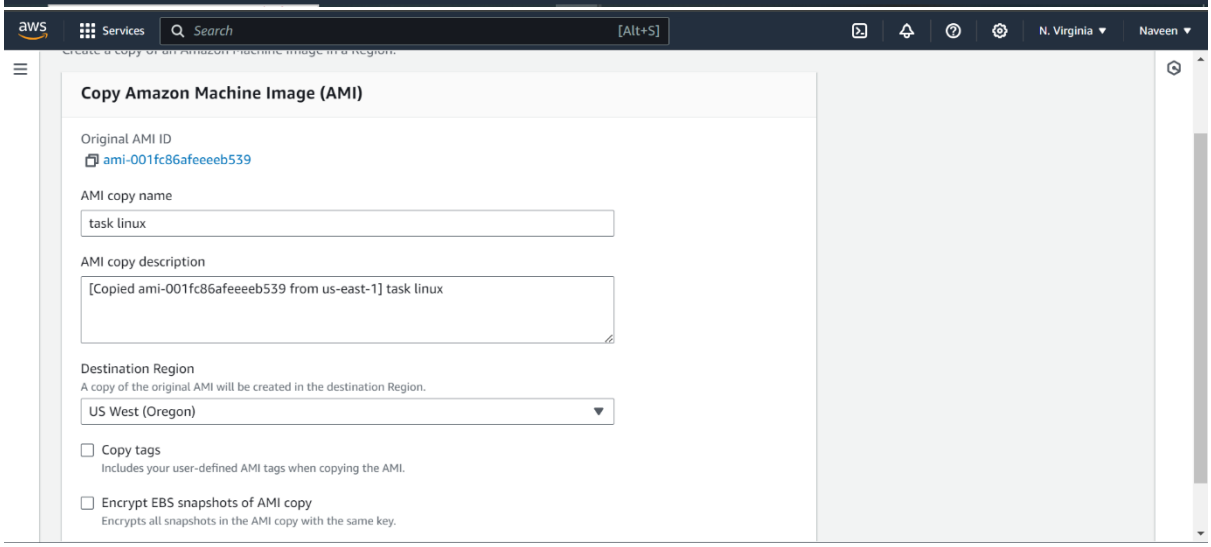


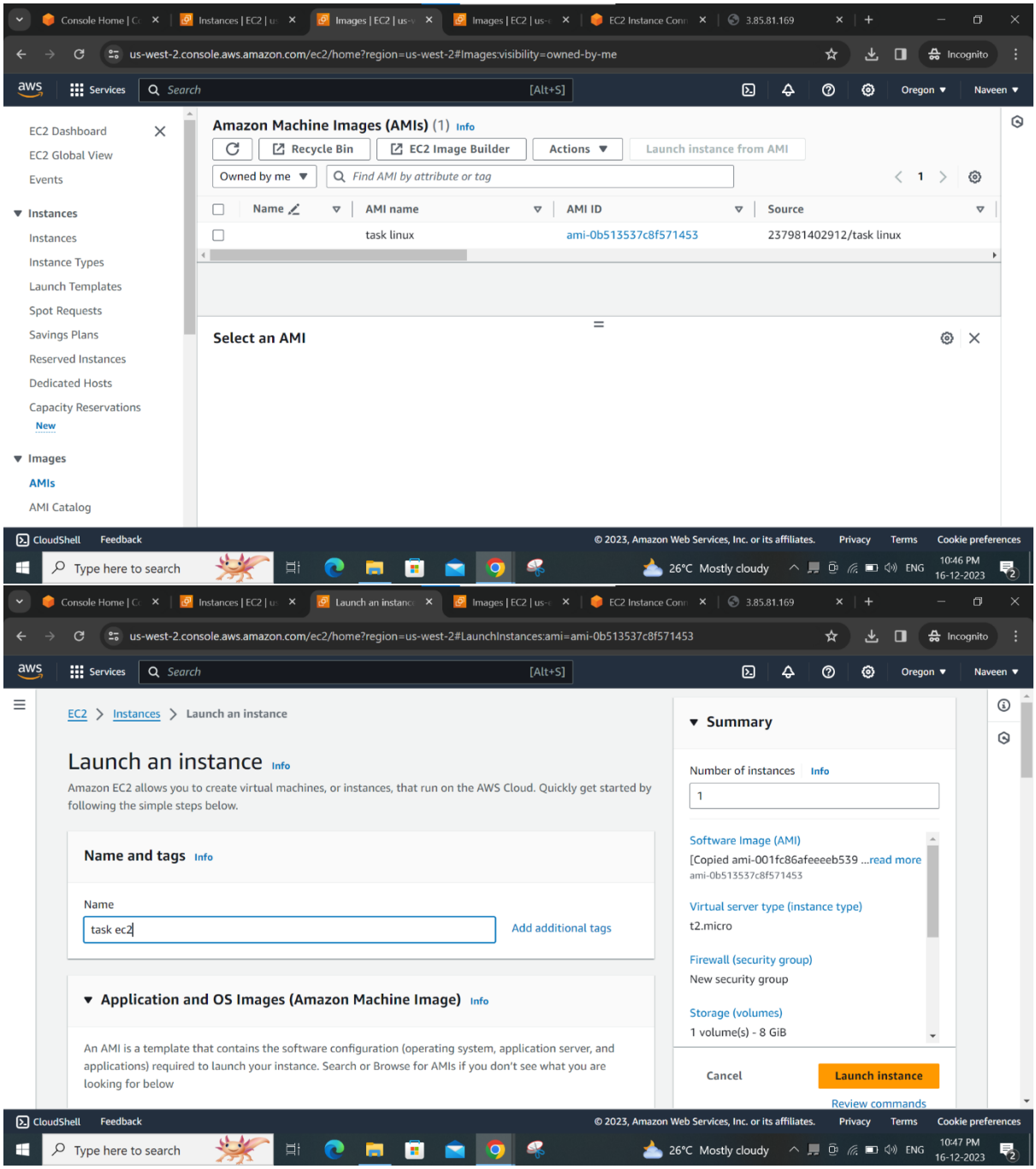


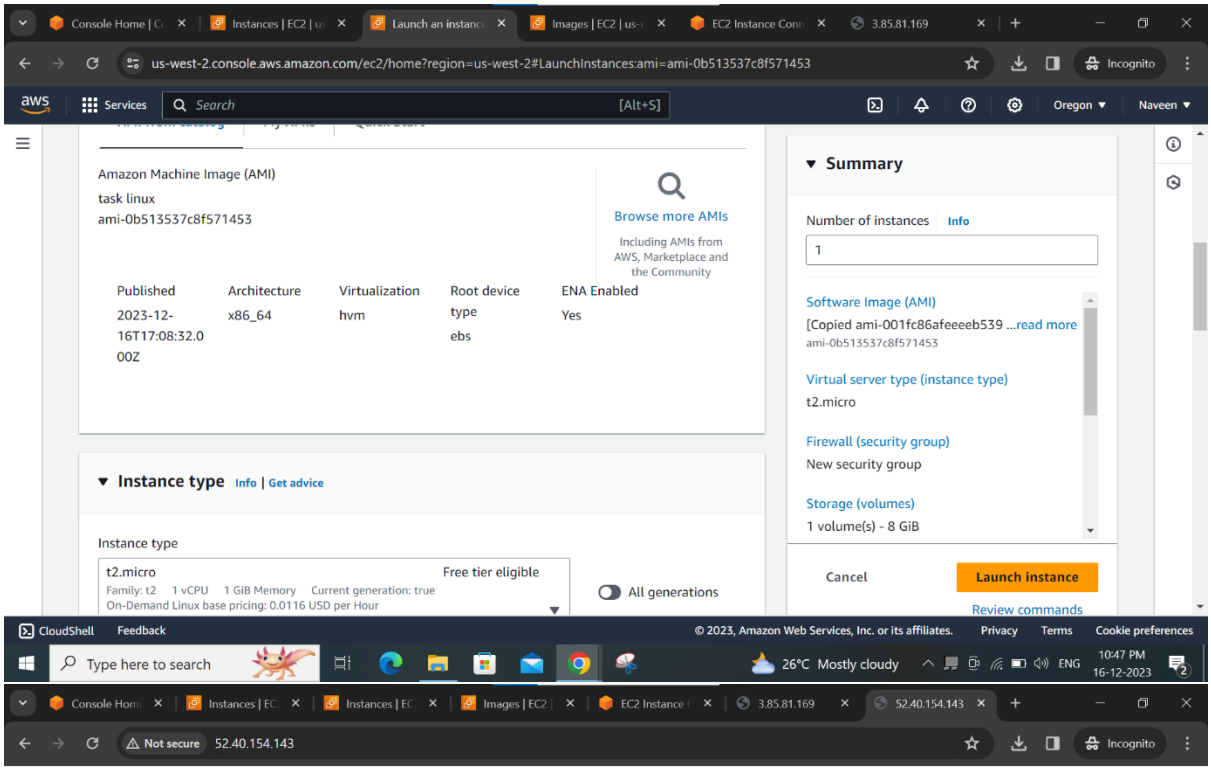
- Create a image in (N. Verginia) by selecting in action image and templates
- After creating the image we can a see the Instance image in AMI and select the AMI go to action copy AMI and select the destination region as US west (Oregon) and click copy AMI
- Go to AMI in Oregon regionand launch instance from AMI
- Create a instance in Oregon
- The Oregon instance will host a web server without any configuration or installing web server and the same application in web server in N. verginia will be reflected in Oregon instance


aws
Services
Search
[Alt+S]
N. Virginia
Naveen
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
New
Images
AMIs
AMI Catalog
Elastic Block Store
Volumes
Snapshots
Lifecycle Manager
Network & Security
Security Groups
Elastic IPs
Amazon Machine Images (AMIs) (1) Info
Recycle Bin
EC2 Image Builder
Actions
Launch instance from AMI
Owned by me
Find AMI by attribute or tag
1
Name
AMI name
AMI ID
Source
task linux
ami-001fc86afeeeeb539
237981402912/task linux
Select an AMI
CloudShell
Feedback
© 2023, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences


aws
Services
Search
[Alt+S]
N. Virginia
Naveen
EC2 > AMIs > ami-001fc86afeeeeb539 > Copy AMI
Copy AMI Info
Create a copy of an Amazon Machine Image in a Region.
Copy Amazon Machine Image (AMI)
Original AMI ID
ami-001fc86afeeeeb539
AMI copy name
task linux
AMI copy description
[Copied ami-001fc86afeeeeb539 from us-east-1] task linux
Destination Region
A copy of the original AMI will be created in the destination Region.
N. Virginia (US East)
CloudShell
Feedback
© 2023, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences


aws
Services
Search
[Alt+S]
N. Virginia
Naveen
Copy Amazon Machine Image (AMI)
Original AMI ID
ami-001fc86afeeeeb539
AMI copy name
task linux
AMI copy description
[Copied ami-001fc86afeeeeb539 from us-east-1] task linux
Destination Region
A copy of the original AMI will be created in the destination Region.
US West (Oregon)
Copy tags
Includes your user-defined AMI tags when copying the AMI.
Encrypt EBS snapshots of AMI copy
Encrypts all snapshots in the AMI copy with the same key.

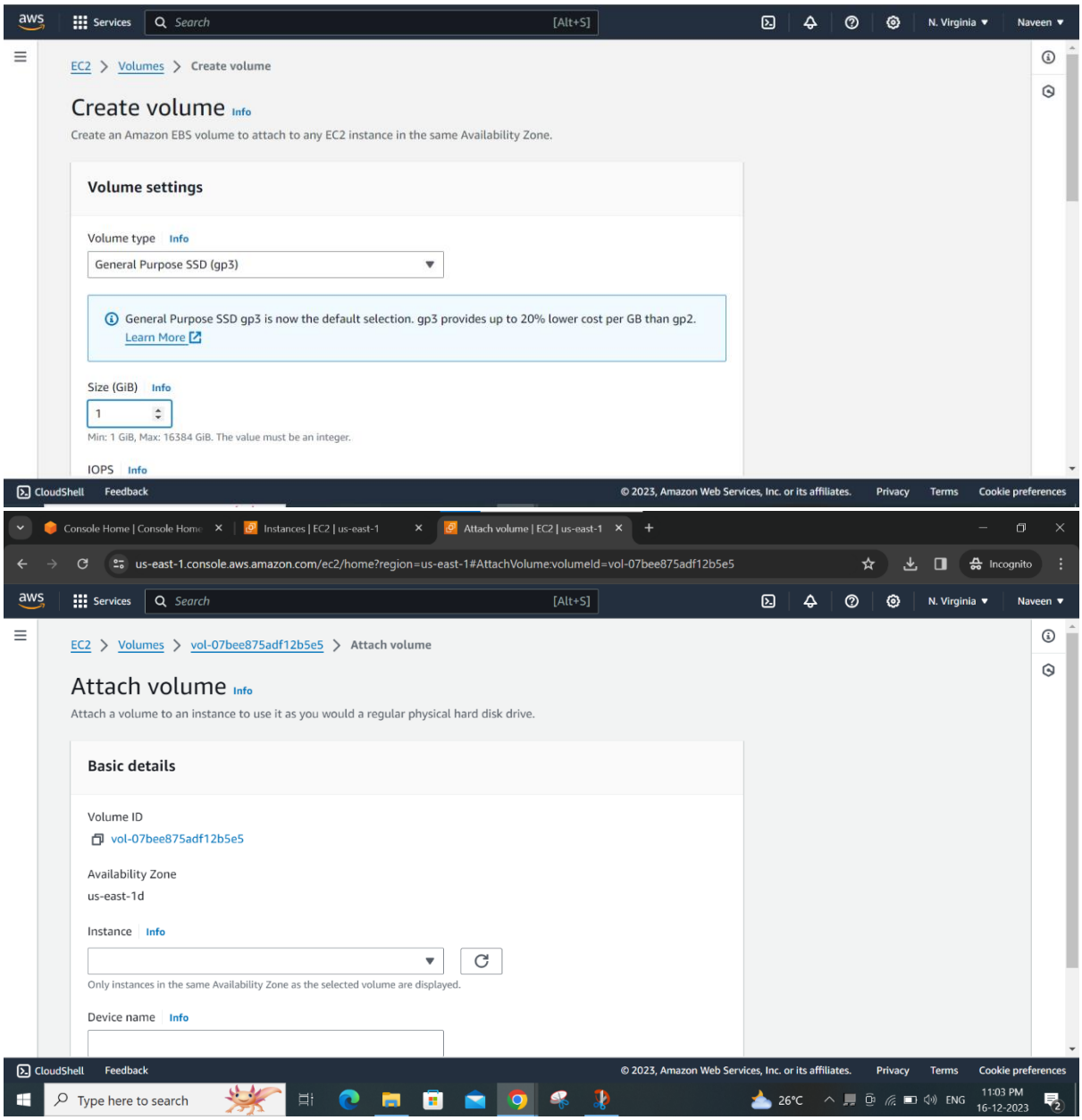

Console Home | C
Instances | EC2 | u
Images | EC2 | us-
Images | EC2 | us-
EC2 Instance Conn
3.85.81.169
us-west-2.console.aws.amazon.com/ec2/home?region=us-west-2#Images:visibility=owned-by-me
Incognito
aws
Services
Search
[Alt+S]
Oregon
Naveen
EC2 Dashboard
EC2 Global View
Events
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
New
Images
AMIs
AMI Catalog
Amazon Machine Images (AMIs) (1) Info
Recycle Bin
EC2 Image Builder
Actions
Launch instance from AMI
Owned by me
Find AMI by attribute or tag
1
Name
AMI name
AMI ID
Source
task linux
ami-0b513537c8f571453
237981402912/task linux
Select an AMI
CloudShell
Feedback
© 2023, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences
Type here to search
26°C Mostly cloudy
ENG
10:46 PM
16-12-2023
Launch an instanc
us-west-2.console.aws.amazon.com/ec2/home?region=us-west-2#LaunchInstances:ami=ami-0b513537c8f571453
EC2
Instances
Launch an instance
Launch an instance Info
Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.
Name and tags Info
Name
task ec2
Add additional tags
Application and OS Images (Amazon Machine Image) Info
An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below
Summary
Number of instances Info
1
Software Image (AMI)
[Copied ami-001fc86afeeeeb539 ...read more
ami-0b513537c8f571453
Virtual server type (instance type)
t2.micro
Firewall (security group)
New security group
Storage (volumes)
1 volume(s) - 8 GiB
Cancel
Launch instance
Review commands
10:47 PM

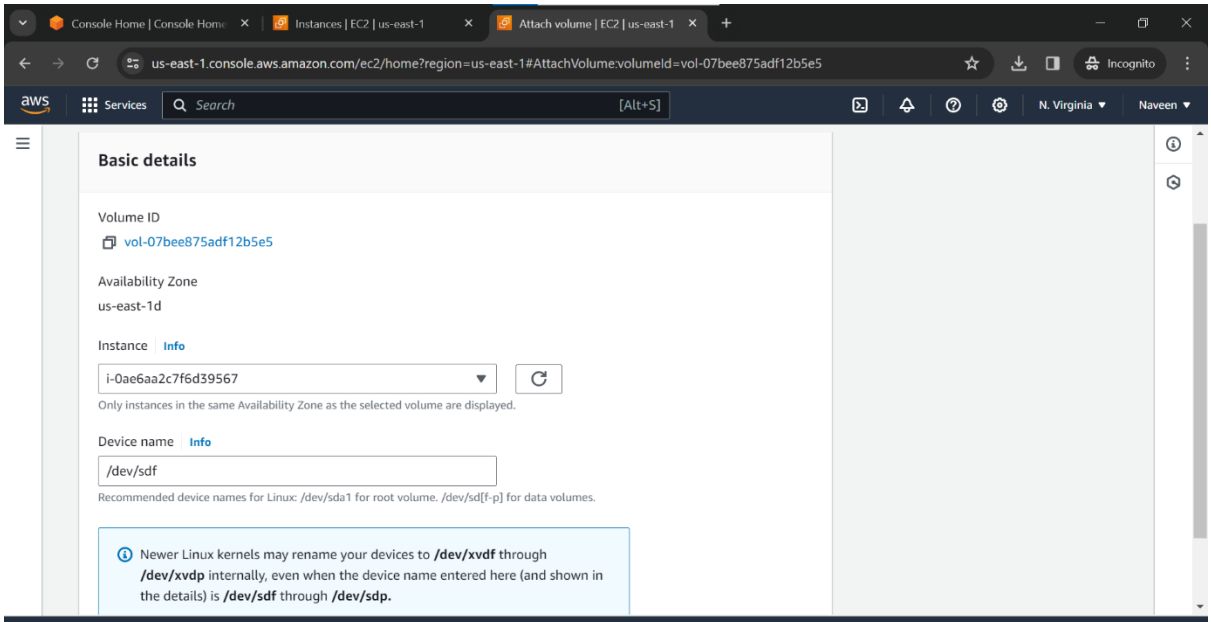


It works!

- Create a two EBS Volumes in (N. Virginia) same availability zone where EC2 instance in created
- After creating EBS Volume select the volume and go to action click attach and select the instance and attach the two volume
- Select the volume go to action and detach the volume and delete the volume
- Select the volume go to action and modify volume. (we can only increase the volume size we can't decrease the volume size)

- To take backup of the EBS volume we create a snapshot
- Select the volume go to action create snapshot
- We can see the snapshot of the volume




Console Home | Console Home
Instances | EC2 | us-east-1
Attach volume | EC2 | us-east-1
us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#AttachVolume:volumeId=vol-07bee875adf12b5e5
Incognito
aws
Services
Search
[Alt+S]
N. Virginia
Naveen
Basic details
Volume ID
vol-07bee875adf12b5e5
Availability Zone
us-east-1d
Instance Info
i-0ae6aa2c7f6d39567
Only instances in the same Availability Zone as the selected volume are displayed.
Device name Info
/dev/sdf
Recommended device names for Linux: /dev/sda1 for root volume. /dev/sd[f-p] for data volumes.
Newer Linux kernels may rename your devices to /dev/xvdf through /dev/xvdp internally, even when the device name entered here (and shown in the details) is /dev/sdf through /dev/sdp.
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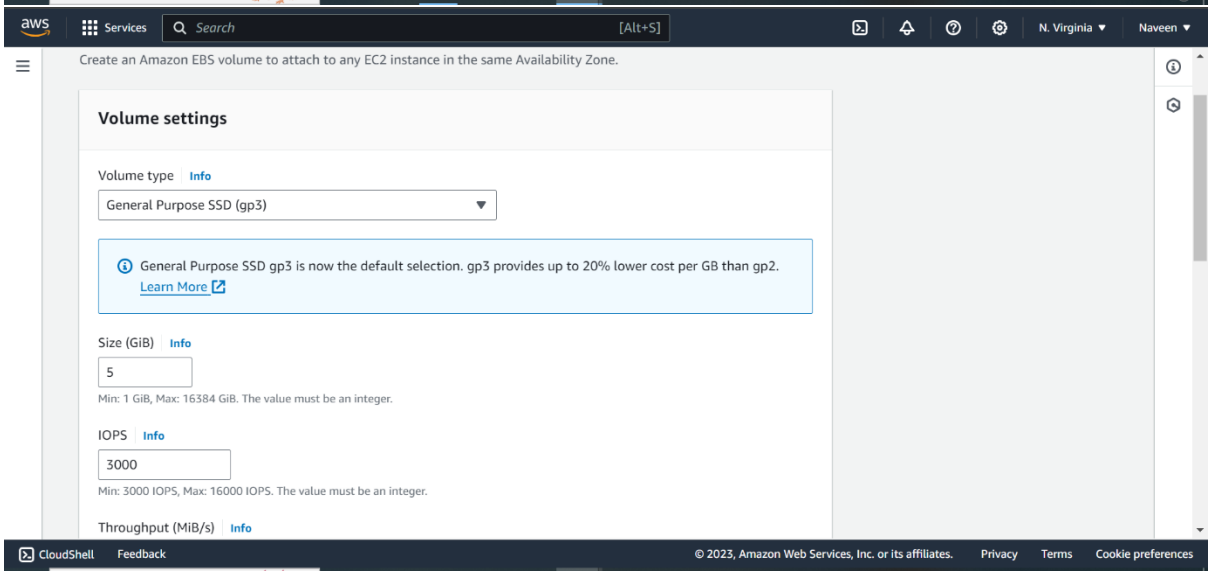
Type here to search
26°C Mostly cloudy
ENG
11:03 PM
16-12-2023


aws
Services
Search
[Alt+S]
N. Virginia
Naveen
Create an Amazon EBS volume to attach to any EC2 instance in the same Availability Zone.
Volume settings
Volume type Info
General Purpose SSD (gp3)
General Purpose SSD gp3 is now the default selection. gp3 provides up to 20% lower cost per GB than gp2.
Learn More
Size (GiB) Info
5
Min: 1 GiB, Max: 16384 GiB. The value must be an integer.
IOPS Info
3000
Min: 3000 IOPS, Max: 16000 IOPS. The value must be an integer.
Throughput (MiB/s) Info
CloudShell
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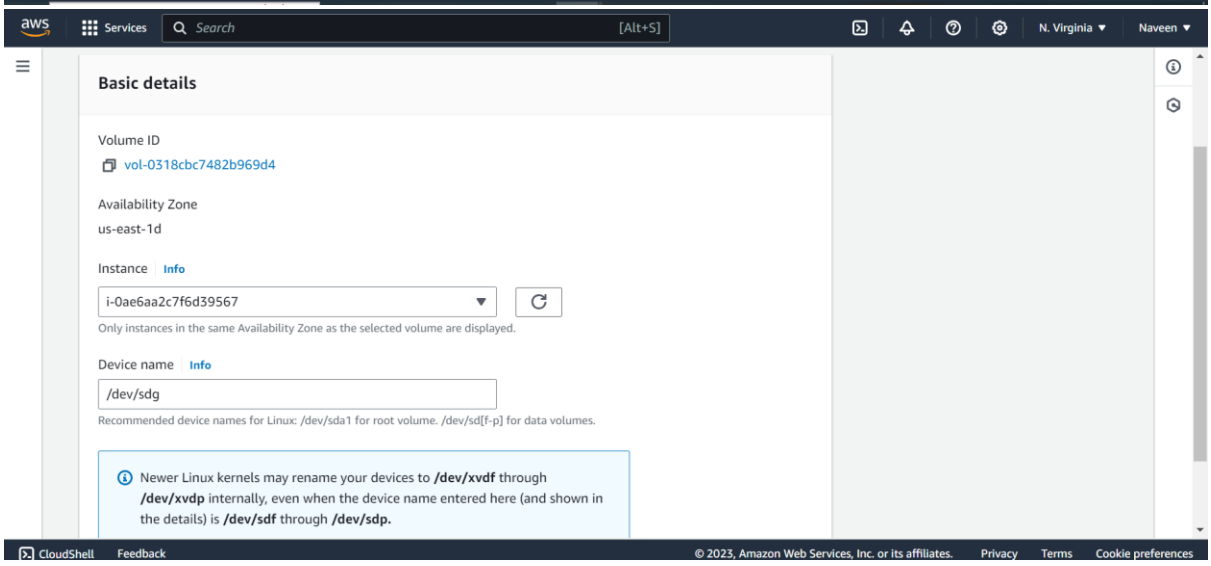
aws
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Basic details
Volume ID
vol-0318cbc7482b969d4
Availability Zone
us-east-1d
Instance Info
i-0ae6aa2c7f6d39567
Only instances in the same Availability Zone as the selected volume are displayed.
Device name Info
/dev/sdg
Recommended device names for Linux: /dev/sda1 for root volume. /dev/sd[f-p] for data volumes.
Newer Linux kernels may rename your devices to /dev/xvdf through /dev/xvdp internally, even when the device name entered here (and shown in the details) is /dev/sdf through /dev/sdp.
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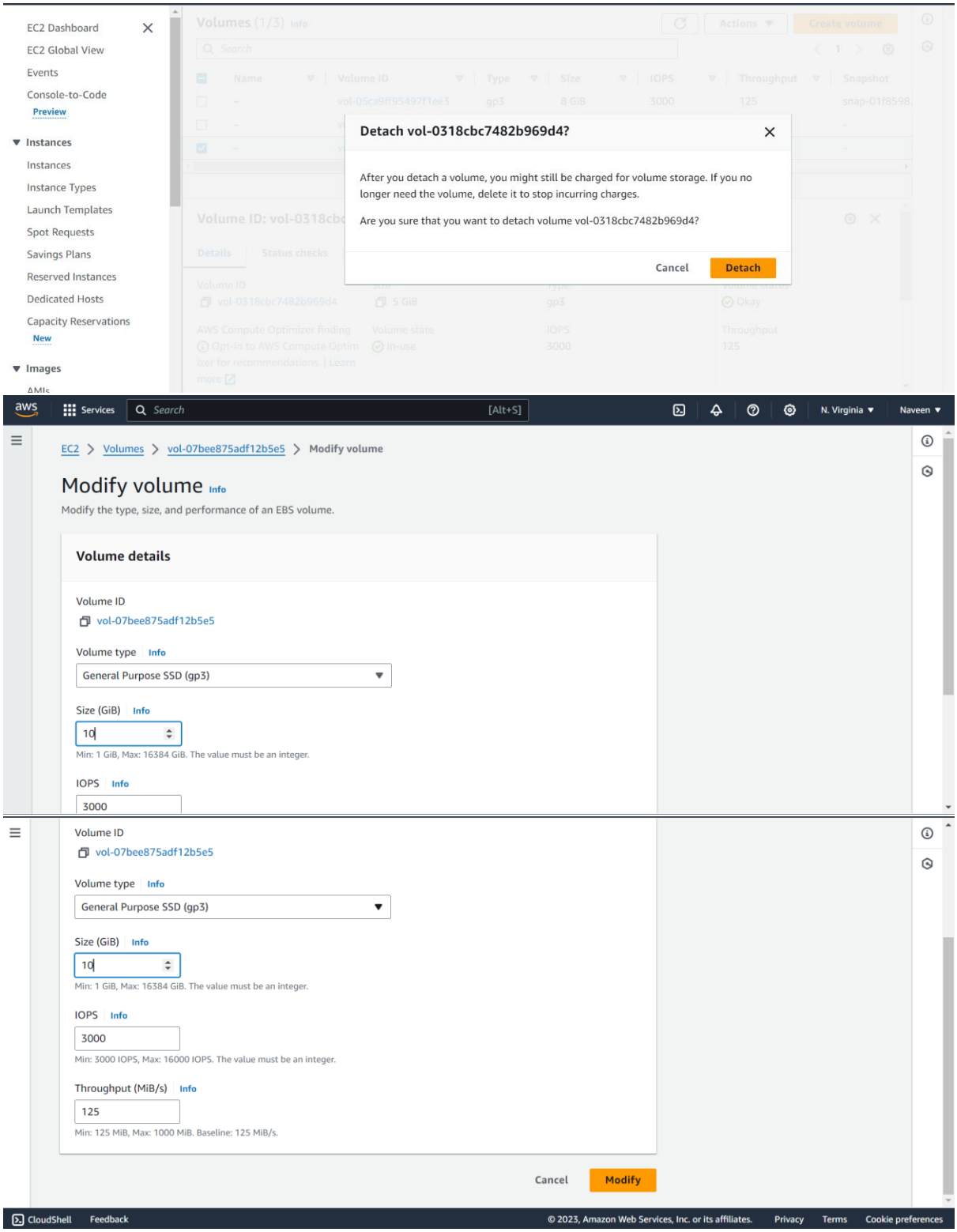
EC2 Dashboard
EC2 Global View
Events
Console-to-Code
Preview
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
New
Images
Volumes (1/3) Info
Actions
Create volume
Detach vol-0318cbc7482b969d4?
After you detach a volume, you might still be charged for volume storage. If you no longer need the volume, delete it to stop incurring charges.
Are you sure that you want to detach volume vol-0318cbc7482b969d4?
Cancel
Detach
aws
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EC2 > Volumes > vol-07bee875adf12b5e5 > Modify volume
Modify volume Info
Modify the type, size, and performance of an EBS volume.
Volume details
Volume ID
vol-07bee875adf12b5e5
Volume type Info
General Purpose SSD (gp3)
Size (GiB) Info
10
Min: 1 GiB, Max: 16384 GiB. The value must be an integer.
IOPS Info
3000
Min: 3000 IOPS, Max: 16000 IOPS. The value must be an integer.
Throughput (MiB/s) Info
125
Min: 125 MiB, Max: 1000 MiB. Baseline: 125 MiB/s.
Cancel
Modify
CloudShell
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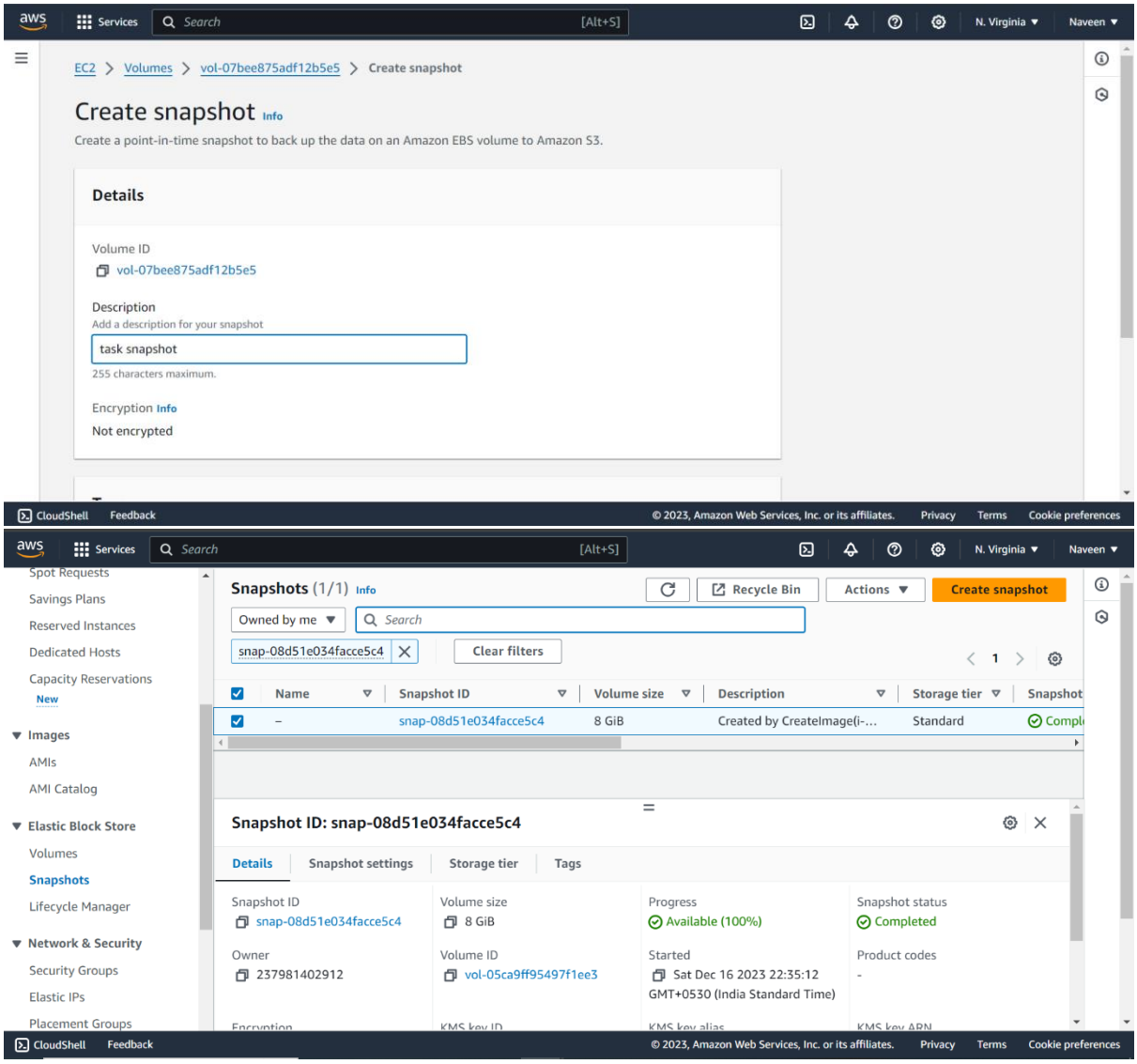
aws
Services
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Naveen
EC2 > Volumes > vol-07bee875adf12b5e5 > Create snapshot
Create snapshot Info
Create a point-in-time snapshot to back up the data on an Amazon EBS volume to Amazon S3.
Details
Volume ID
vol-07bee875adf12b5e5
Description
Add a description for your snapshot
task snapshot
255 characters maximum.
Encryption Info
Not encrypted
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Capacity Reservations
New
Images
AMIs
AMI Catalog
Elastic Block Store
Volumes
Snapshots
Lifecycle Manager
Network & Security
Security Groups
Elastic IPs
Placement Groups
Snapshots (1/1) Info
Recycle Bin
Actions
Create snapshot
Owned by me
Search
snap-08d51e034facce5c4
Clear filters
1
Name
Snapshot ID
Volume size
Description
Storage tier
Snapshot
–
snap-08d51e034facce5c4
8 GiB
Created by CreateImage(i-…
Standard
Compl
Snapshot ID: snap-08d51e034facce5c4
Details
Snapshot settings
Storage tier
Tags
Snapshot ID
snap-08d51e034facce5c4
Volume size
8 GiB
Progress
Available (100%)
Snapshot status
Completed
Owner
237981402912
Volume ID
vol-05ca9ff95497f1ee3
Started
Sat Dec 16 2023 22:35:12 GMT+0530 (India Standard Time)
Product codes
-
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