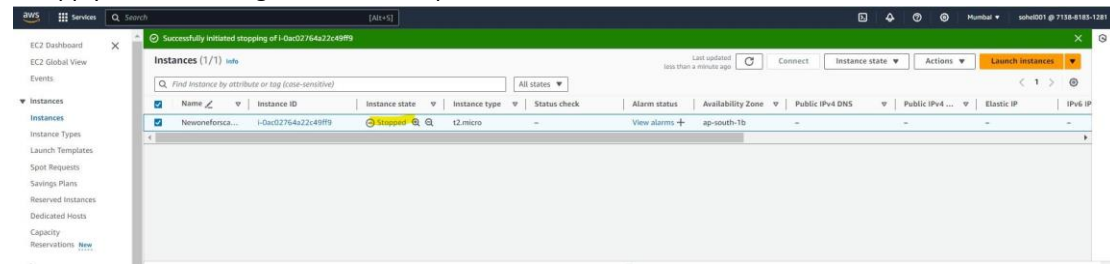


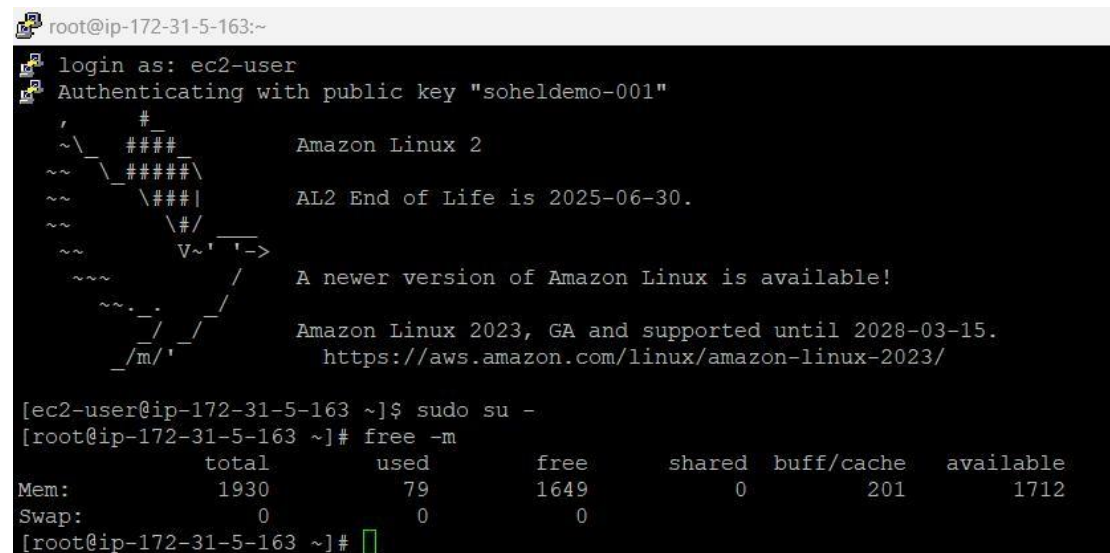
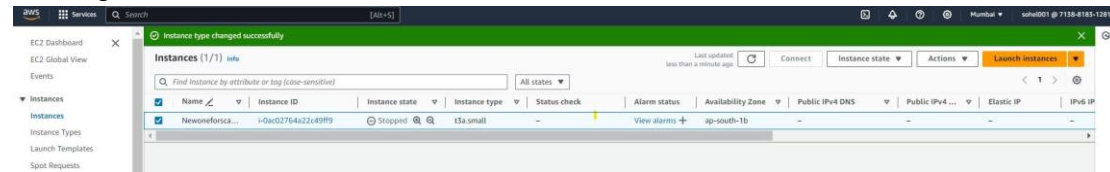
AWS EC2 Vertical scaling practical

1. Vertical scaling

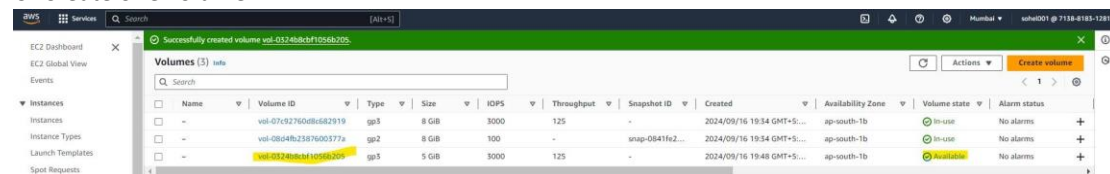
A. Apply vertical scaling we need to stop the instance



B. Change it to t2.small



C. Create one volume



D. Attach EBS volume to instance

Attach volume [Info](#)

Attach a volume to an instance to use it as you would a regular physical hard disk drive.

Basic details

Volume ID
vol-012ae0249c9aecabc

Availability Zone
ap-south-1b

Instance [Info](#)
i-0ac02764a22c49ff9

Only instances in the same Availability Zone as the selected volume are displayed.

Device name [Info](#)
/dev/sdc

Recommended device names for Linux: /dev/xvda for root volume, /dev/sd[1-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.

Cancel **Attach volume**

E. Successfully attached volume to the instance

Volumes (3) [Info](#)

Actions **Create volume**

	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot ID	Created	Availability Zone	Volume state	Alarm status
<input type="checkbox"/>	-	vol-07c9276d08c682919	gp3	8 GiB	3000	125	-	2024/09/16 19:34 GMT+5:30	ap-south-1b	in-use	No alarms
<input type="checkbox"/>	-	vol-0804fb2387600577a	gp2	8 GiB	100	-	snap-08419e2...	2024/09/16 19:34 GMT+5:30	ap-south-1b	in-use	No alarms
<input type="checkbox"/>	-	vol-012ae0249c9aecabc	gp3	5 GiB	3000	125	-	2024/09/16 19:53 GMT+5:30	ap-south-1b	in-use	No alarms

```
root@ip-172-31-5-163:~  
login as: ec2-user  
Authenticating with public key "soheldemo-001"  
Last login: Mon Sep 16 14:27:03 2024 from 152.57.2.140  
#  
~\##### Amazon Linux 2  
~~~\#####  
~~~\###| AL2 End of Life is 2025-06-30.  
~~~\#/   
~~~V~'-'>  
~~~  
~~~ A newer version of Amazon Linux is available!  
~~~-/-/  
~~~-/m/'-/-/ Amazon Linux 2023, GA and supported until 2028-03-15.  
                        https://aws.amazon.com/linux/amazon-linux-2023/  
  
[ec2-user@ip-172-31-5-163 ~]$ sudo su -  
Last login: Mon Sep 16 14:27:10 UTC 2024 on pts/0  
[root@ip-172-31-5-163 ~]# df -h  
Filesystem      Size  Used Avail Use% Mounted on  
devtmpfs        956M    0 956M   0% /dev  
tmpfs           966M    0 966M   0% /dev/shm  
tmpfs           966M  412K 965M   1% /run  
tmpfs           966M    0 966M   0% /sys/fs/cgroup  
/dev/nvme0n1p1  8.0G  1.8G  6.3G  23% /  
tmpfs           194M    0 194M   0% /run/user/1000  
[root@ip-172-31-5-163 ~]#
```

```

root@ip-172-31-46-93:~# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
loop0        7:0      0  25.2M  1 loop /snap/amazon-ssm-agent/7993
loop1        7:1      0  55.7M  1 loop /snap/core18/2829
loop2        7:2      0  38.8M  1 loop /snap/snapd/21759
xvda         202:0    0    8G   0 disk
├─xvda1      202:1    0    7G   0 part /
├─xvda14     202:14   0    4M   0 part
├─xvda15     202:15   0  106M  0 part /boot/efi
└─xvda16     259:0    0  913M  0 part /boot
xvdf         202:80    0    5G   0 disk
root@ip-172-31-46-93:~# file -s /dev/xvdf
/dev/xvdf: data
root@ip-172-31-46-93:~# mkfs -t ext4 /dev/xvdf
mke2fs 1.47.0 (5-Feb-2023)
Creating filesystem with 1310720 4k blocks and 327680 inodes
Filesystem UUID: 3f819d02-228e-4bbe-81b5-0f18c1ac7a85
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376, 294912, 819200, 884736

Allocating group tables: done
Writing inode tables: done
Creating journal (16384 blocks): done
Writing superblocks and filesystem accounting information: done

```

```

root@ip-172-31-46-93:~# mount /dev/xvdf /home/cpp
root@ip-172-31-46-93:~# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
loop0        7:0      0  25.2M  1 loop /snap/amazon-ssm-agent/7993
loop1        7:1      0  55.7M  1 loop /snap/core18/2829
loop2        7:2      0  38.8M  1 loop /snap/snapd/21759
xvda         202:0    0    8G   0 disk
├─xvda1      202:1    0    7G   0 part /
├─xvda14     202:14   0    4M   0 part
├─xvda15     202:15   0  106M  0 part /boot/efi
└─xvda16     259:0    0  913M  0 part /boot
xvdf         202:80    0    5G   0 disk /home/cpp
root@ip-172-31-46-93:~# █

```

F. Creating one more HDD EBS volume

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot ID	Created	Availability Zone	Volume state	Alarm status
-	vol-07c92760b682919	gp5	8 GiB	3000	125	-	2024/09/16 19:34 GMT+5:30	ap-south-1b	In-use	No alarms
-	vol-0b04bfc2387600377a	gp2	8 GiB	100	-	snap-0841fe2...	2024/09/16 19:34 GMT+5:30	ap-south-1b	In-use	No alarms
-	vol-012ae0249c98acabc	gp3	5 GiB	3000	125	-	2024/09/16 19:53 GMT+5:30	ap-south-1b	In-use	No alarms
-	vol-0b04726a7a4443741	gp5	200 GiB	3000	125	-	2024/09/16 20:10 GMT+5:30	ap-south-1b	Available	No alarms

G. Successfully added to the instance

```

root@ip-172-31-46-93:~# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
loop0        7:0      0  25.2M  1 loop /snap/amazon-ssm-agent/7993
loop1        7:1      0  55.7M  1 loop /snap/core18/2829
loop2        7:2      0  38.8M  1 loop /snap/snapd/21759
xvda         202:0    0    8G   0 disk
├─xvda1      202:1    0    7G   0 part /
├─xvda14     202:14   0    4M   0 part
├─xvda15     202:15   0  106M  0 part /boot/efi
└─xvda16     259:0    0  913M  0 part /boot
xvdf         202:80    0    5G   0 disk /home/cpp
xvdg         202:96    0  200G  0 disk
root@ip-172-31-46-93:~# █

```

H. Format the new added HDD

```
root@ip-172-31-46-93:~# mkfs -t ext4 /dev/xvdg
mke2fs 1.47.0 (5-Feb-2023)
Creating filesystem with 52428800 4k blocks and 13107200 inodes
Filesystem UUID: 482b016c-468a-445a-940e-cd266e82e636
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632, 2654208,
    4096000, 7962624, 11239424, 20480000, 23887872

Allocating group tables: done
Writing inode tables: done
```

I. Create directory and mount on it

```
root@ip-172-31-46-93:~# mkdir /home/python-app
root@ip-172-31-46-93:~# mount /dev/xvdg /home/python-app
root@ip-172-31-46-93:~# lsblk
```

NAME	MAJ:MIN	RM	SIZE	RO	TYPE	MOUNTPOINTS
loop0	7:0	0	25.2M	1	loop	/snap/amazon-ssm-agent/7993
loop1	7:1	0	55.7M	1	loop	/snap/core18/2829
loop2	7:2	0	38.8M	1	loop	/snap/snapd/21759
xvda	202:0	0	8G	0	disk	
├─xvda1	202:1	0	7G	0	part	/
├─xvda14	202:14	0	4M	0	part	
├─xvda15	202:15	0	106M	0	part	/boot/efi
└─xvda16	259:0	0	913M	0	part	/boot
xvdf	202:80	0	5G	0	disk	/home/cpp
xvdg	202:96	0	200G	0	disk	/home/python-app

```
root@ip-172-31-46-93:~#
```