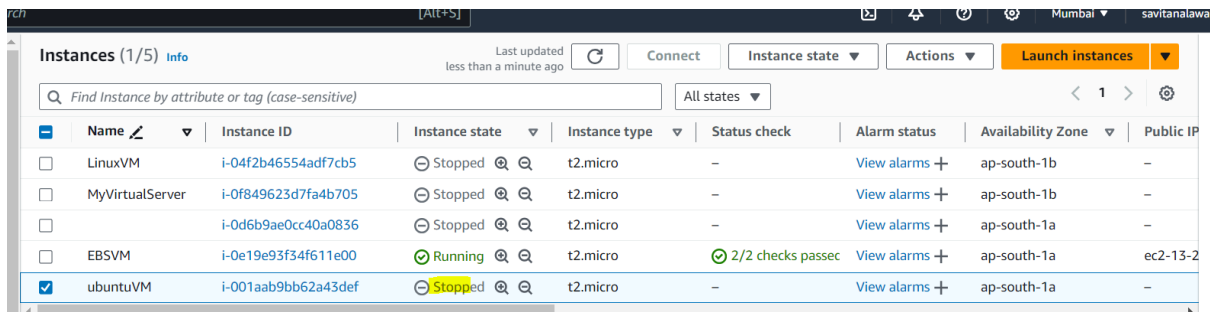


24th August Practical – Savita Nalawade

1. Vertical scaling

a) To apply vertical scaling we need to first stop instance

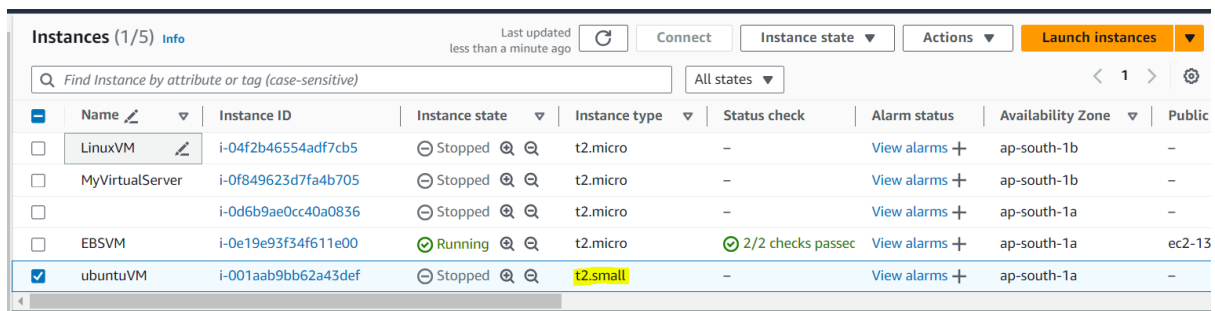


Instances (1/5) Info

Find Instance by attribute or tag (case-sensitive)

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
<input type="checkbox"/>	LinuxVM	i-04f2b46554adf7cb5	Stopped	t2.micro	-	View alarms +	ap-south-1b	-
<input type="checkbox"/>	MyVirtualServer	i-0f849623d7fa4b705	Stopped	t2.micro	-	View alarms +	ap-south-1b	-
<input type="checkbox"/>		i-0d6b9ae0cc40a0836	Stopped	t2.micro	-	View alarms +	ap-south-1a	-
<input type="checkbox"/>	EBSVM	i-0e19e93f34f611e00	Running	t2.micro	2/2 checks passed	View alarms +	ap-south-1a	ec2-13-2
<input checked="" type="checkbox"/>	ubuntuVM	i-001aab9bb62a43def	Stopped	t2.micro	-	View alarms +	ap-south-1a	-

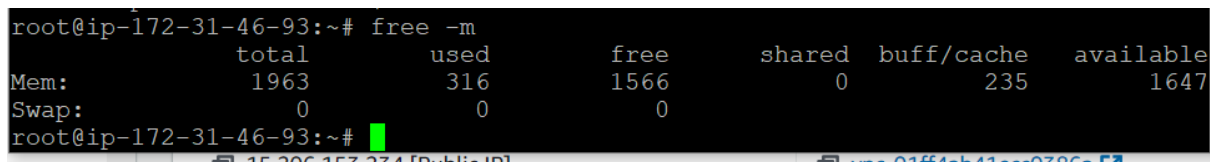
b) Change it to t2.small



Instances (1/5) Info

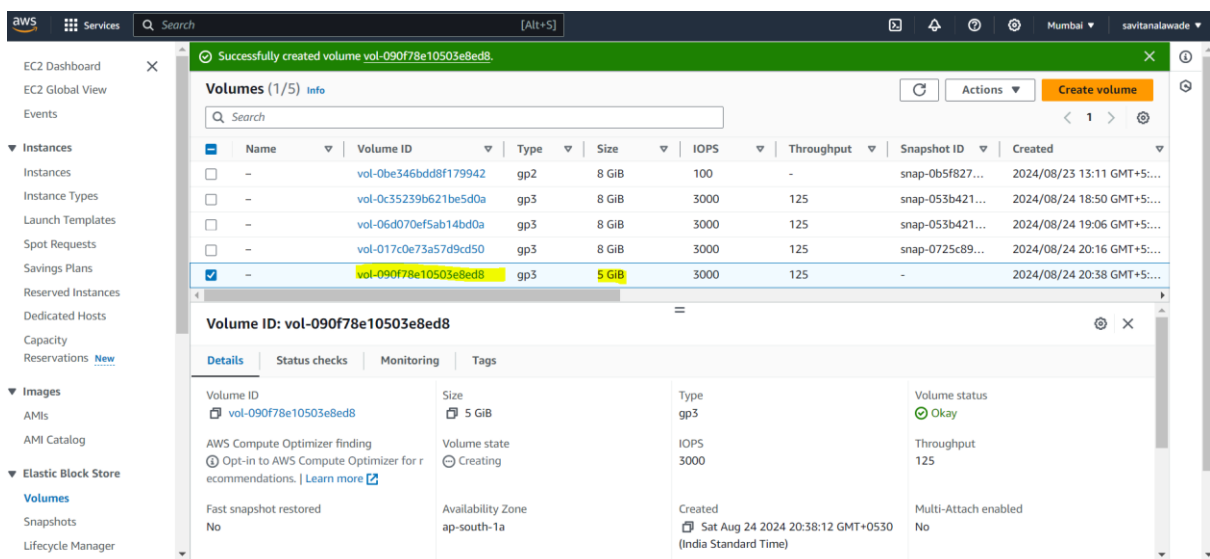
Find Instance by attribute or tag (case-sensitive)

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public
<input type="checkbox"/>	LinuxVM	i-04f2b46554adf7cb5	Stopped	t2.micro	-	View alarms +	ap-south-1b	-
<input type="checkbox"/>	MyVirtualServer	i-0f849623d7fa4b705	Stopped	t2.micro	-	View alarms +	ap-south-1b	-
<input type="checkbox"/>		i-0d6b9ae0cc40a0836	Stopped	t2.micro	-	View alarms +	ap-south-1a	-
<input type="checkbox"/>	EBSVM	i-0e19e93f34f611e00	Running	t2.micro	2/2 checks passed	View alarms +	ap-south-1a	ec2-13
<input checked="" type="checkbox"/>	ubuntuVM	i-001aab9bb62a43def	Stopped	t2.small	-	View alarms +	ap-south-1a	-



```
root@ip-172-31-46-93:~# free -m
              total        used        free      shared  buff/cache   available
Mem:           1963          316         1566           0          235         1647
Swap:              0              0              0
```

c) Created one volume



Successfully created volume vol-090f78e10503e8ed8.

Volumes (1/5) Info

Search

	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot ID	Created
<input type="checkbox"/>	-	vol-0be346bd8f179942	gp2	8 GiB	100	-	snap-0b5f827...	2024/08/23 13:11 GMT+5...
<input type="checkbox"/>	-	vol-0c35239621be5d0a	gp3	8 GiB	3000	125	snap-053b421...	2024/08/24 18:50 GMT+5...
<input type="checkbox"/>	-	vol-06d070ef5ab14bd0a	gp3	8 GiB	3000	125	snap-053b421...	2024/08/24 19:06 GMT+5...
<input type="checkbox"/>	-	vol-017c0e73a57d9cd50	gp3	8 GiB	3000	125	snap-0725c89...	2024/08/24 20:16 GMT+5...
<input checked="" type="checkbox"/>	-	vol-090f78e10503e8ed8	gp3	5 GiB	3000	125	-	2024/08/24 20:38 GMT+5...

Volume ID: vol-090f78e10503e8ed8

Details	Status checks	Monitoring	Tags
Volume ID vol-090f78e10503e8ed8	Size 5 GiB	Type gp3	Volume status Okay
AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations. Learn more	Volume state Creating	IOPS 3000	Throughput 125
Fast snapshot restored No	Availability Zone ap-south-1a	Created Sat Aug 24 2024 20:38:12 GMT+0530 (India Standard Time)	Multi-Attach enabled No

d) Attaching EBS volume to instance

aws

Services

Search

[Alt+S]

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-090f78e10503e8ed8

Availability Zone

ap-south-1a

Instance

Info

i-001aab9bb62a43def

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**.

e) Successfully attached volume to instance

aws

Services

Search

[Alt+S]

Mumbai

savitana

EC2 Dashboard

EC2 Global View

Events

Instances

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Capacity

Reservations

Images

AMIs

AMI Catalog

Elastic Block Store

Volumes

Successfully attached volume vol-090f78e10503e8ed8 to instance i-001aab9bb62a43def.

Volumes (5)

Info

Search

1

Actions

Create volume

	Type	Size	IOPS	Throughput	Snapshot ID	Created	Availability Zone	Volume state
79942	gp2	8 GiB	100	-	snap-0b5f827...	2024/08/23 13:11 GMT+5:...	ap-south-1b	In-use
e5d0a	gp3	8 GiB	3000	125	snap-053b421...	2024/08/24 18:50 GMT+5:...	ap-south-1a	In-use
4bd0a	gp3	8 GiB	3000	125	snap-053b421...	2024/08/24 19:06 GMT+5:...	ap-south-1a	In-use
9cd50	gp3	8 GiB	3000	125	snap-0725c89...	2024/08/24 20:16 GMT+5:...	ap-south-1a	In-use
e8ed8	gp3	5 GiB	3000	125	-	2024/08/24 20:38 GMT+5:...	ap-south-1a	In-use

Fault tolerance for all volumes in this Region

Snapshot summary

Last updated on Sat, Aug 24, 2024, 08:46:08 PM (GMT+05:30)

Recently backed up volumes / Total # volumes

0 / 5

Data Lifecycle Manager default policy for EBS Snapshots status

No default policy set up | Create policy

```

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 and attaching to instance

aws Services Search [Alt+S]

EC2 > Volumes > Create volume

Create volume [Info](#)

Create an Amazon EBS volume to attach to any EC2 instance in the same Availability Zone.

Volume settings

Volume type [Info](#)
Cold HDD (sc1) ▼

Size (GiB) [Info](#)
200 ▼
Min: 125 GiB, Max: 16384 GiB. The value must be an integer.

IOPS [Info](#)
Not applicable

Throughput (MiB/s) [Info](#)
3/16
Baseline: 12 MiB/s per TiB.

Availability Zone [Info](#)

Volumes (6) [Info](#) [Refresh](#) [Actions](#) [Create volume](#)

Search

	Type	Size	IOPS	Throughput	Snapshot ID	Created	Availability Zone	Volume state
dd8f179942	gp2	8 GiB	100	-	snap-0b5f827...	2024/08/23 13:11 GMT+5:...	ap-south-1b	In-use
b621be5d0a	gp3	8 GiB	3000	125	snap-053b421...	2024/08/24 18:50 GMT+5:...	ap-south-1a	In-use
f5ab14bd0a	gp3	8 GiB	3000	125	snap-053b421...	2024/08/24 19:06 GMT+5:...	ap-south-1a	In-use
3a57d9cd50	gp3	8 GiB	3000	125	snap-0725c89...	2024/08/24 20:16 GMT+5:...	ap-south-1a	In-use
10503e8ed8	gp3	5 GiB	3000	125	-	2024/08/24 20:38 GMT+5:...	ap-south-1a	In-use
44801965d	sc1	200 GiB	-	3/16	-	2024/08/24 21:40 GMT+5:...	ap-south-1a	Available

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
```

h) Formatting the newly 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 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:~# █

```