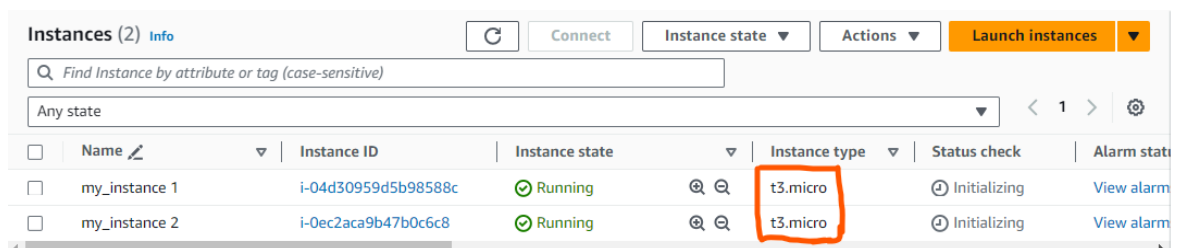


Assigning single volume to multiple instances:-

Theory:-

- t2.micro and all t2 series doesn't support multi attach support volumes, because it uses **Xen hypervisor**.
- t3.micro , t3.small and all t3 series uses **nitro hypervisor**.
- That's why, for performing this practical we are using t3 series instances.

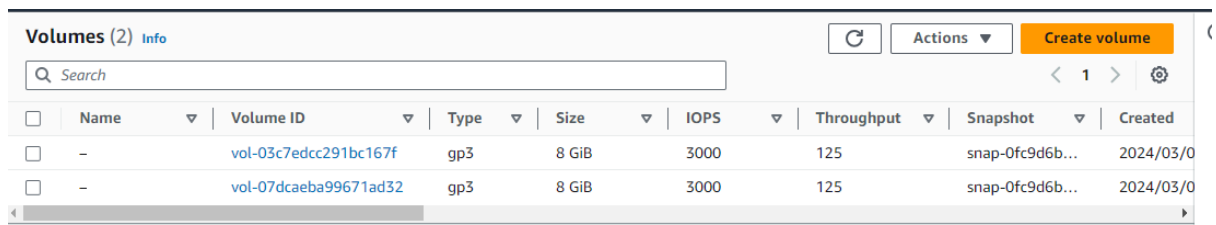
1. Create two t3.micro instances



The screenshot shows the AWS Management Console 'Instances' page. Two instances are listed: 'my_instance 1' and 'my_instance 2'. Both are in a 'Running' state. The 'Instance type' column for both instances shows 't3.micro', which is highlighted with a red box. The 'Status check' column shows 'Initializing' for both.

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status
<input type="checkbox"/>	my_instance 1	i-04d30959d5b98588c	Running	t3.micro	Initializing	View alarm
<input type="checkbox"/>	my_instance 2	i-0ec2aca9b47b0c6c8	Running	t3.micro	Initializing	View alarm

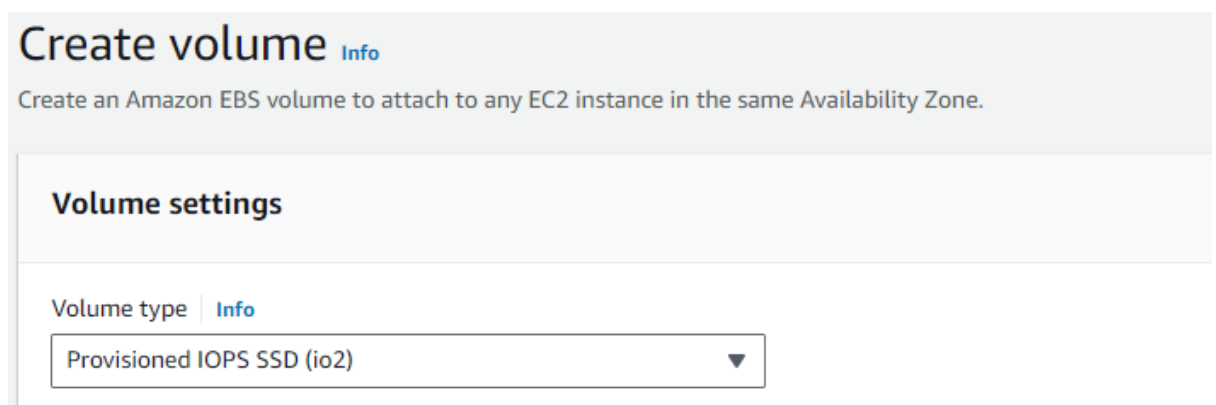
2. Create a new SSD(io2) volume (**this volume supports multi attach**)
(Click on create volume option)



The screenshot shows the AWS Management Console 'Volumes' page. Two volumes are listed, both of type 'gp3'. The 'Volume type' column shows 'gp3' for both volumes.

	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created
<input type="checkbox"/>	-	vol-03c7edcc291bc167f	gp3	8 GiB	3000	125	snap-0fc9d6b...	2024/03/0
<input type="checkbox"/>	-	vol-07dcaeba99671ad32	gp3	8 GiB	3000	125	snap-0fc9d6b...	2024/03/0

3. Select the **volume type**
(In this case we are selected io2 which supports the multi attaching)



The screenshot shows the 'Create volume' form in the AWS Management Console. The 'Volume type' dropdown menu is open, showing 'Provisioned IOPS SSD (io2)' as the selected option.

Create volume [Info](#)

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

Volume settings

Volume type [Info](#)

Provisioned IOPS SSD (io2)

4. Specify the size of volume

Size (GiB) | Info

Min: 4 GiB, Max: 65536 GiB. The value must be an integer.

5. Select zone carefully because its Availability zone specific service

Availability Zone | Info

6. Scroll down and click on create volume option

Snapshot summary Info ↻

🕒 Click refresh to view backup information
The volume type that you select and the tags that you assign determine whether the volume will be backed up by any Data Lifecycle Manager policies.

Cancel Create volume

7. Volume created successfully

🟢 Successfully created volume vol-030c426bf016eb1af. ✕

Volumes (3) Info ↻ Actions Create volume

🔍 Search

<input type="checkbox"/>	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created
<input type="checkbox"/>	-	vol-030c426bf016eb1af	io2	10 GiB	3000	-	-	2024/03/0
<input type="checkbox"/>	-	vol-03c7edcc291bc167f	gp3	8 GiB	3000	125	snap-0fc9d6b...	2024/03/0
<input type="checkbox"/>	-	vol-07dcaeba99671ad32	gp3	8 GiB	3000	125	snap-0fc9d6b...	2024/03/0

8. Select the newly created volume and click on **attach volume** option

Volumes (1/3) Info ↻ Actions Create volume

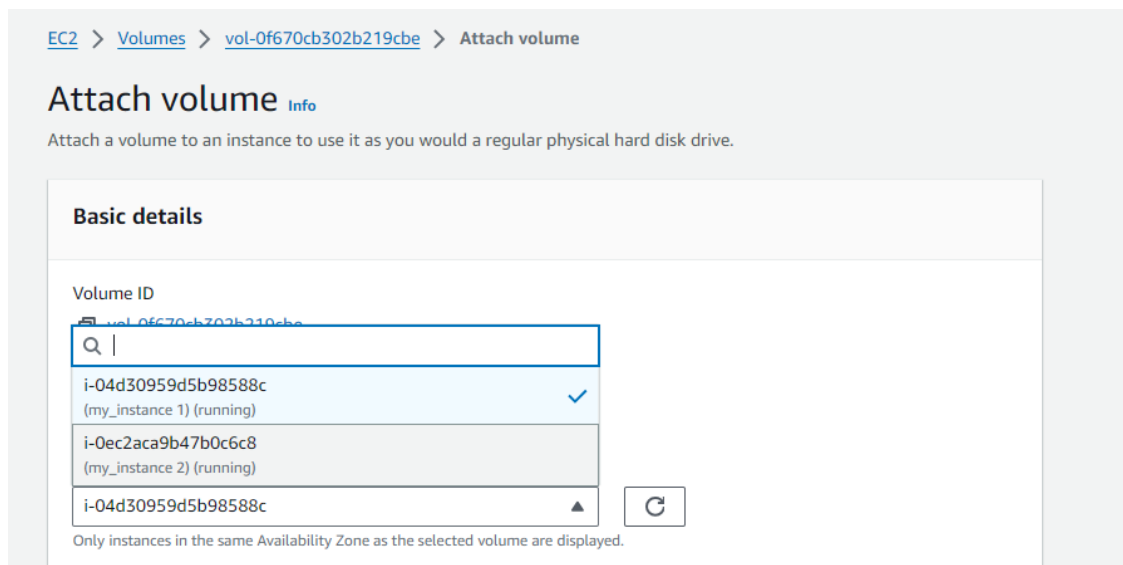
🔍 Search

<input type="checkbox"/>	-	vol-03c7edcc291bc167f	gp3	8 GiB	3000	125	
<input type="checkbox"/>	-	vol-07dcaeba99671ad32	gp3	8 GiB	3000	125	
<input checked="" type="checkbox"/>	new_volume	vol-0f670cb302b219cbe	io2	10 GiB	3000	-	

Attach volume

Detach volume

9. Select the instance



10. Click on **Enable Multi-Attach** button....

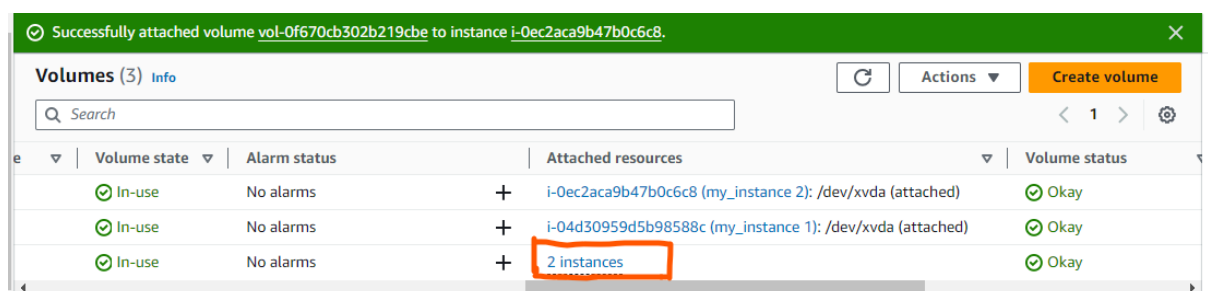
Amazon EBS Multi-Attach

☒ Enable Multi-Attach

i To enable Multi-Attach for Windows Server Failover Cluster (WSFC) please install the latest NVMe driver and configure SCSI persistent reservations according to the [documentation](#).

11. Scroll down and click on **attach volume** option

12. We successfully attached the new volume to one instance.....



13. Follow the same steps, and attach the volume to **another instance**....

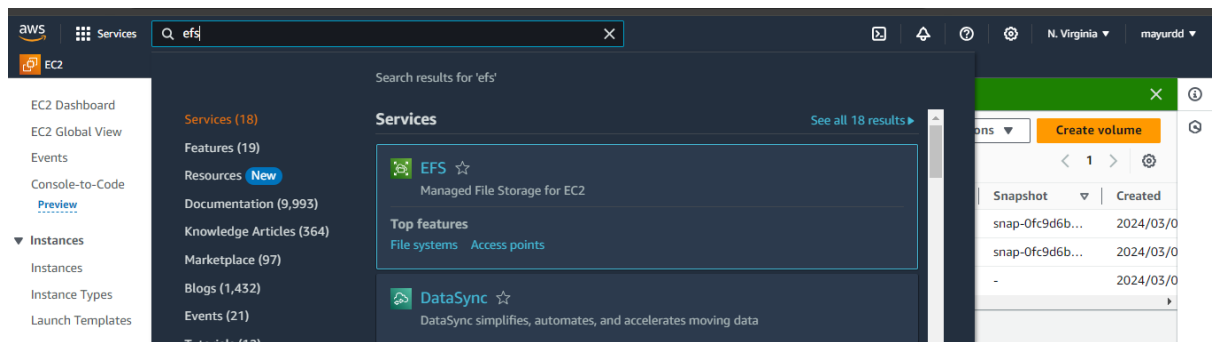
14. We are successfully able to attach one volume to **2 instances**....

EFS (Elastic file system)

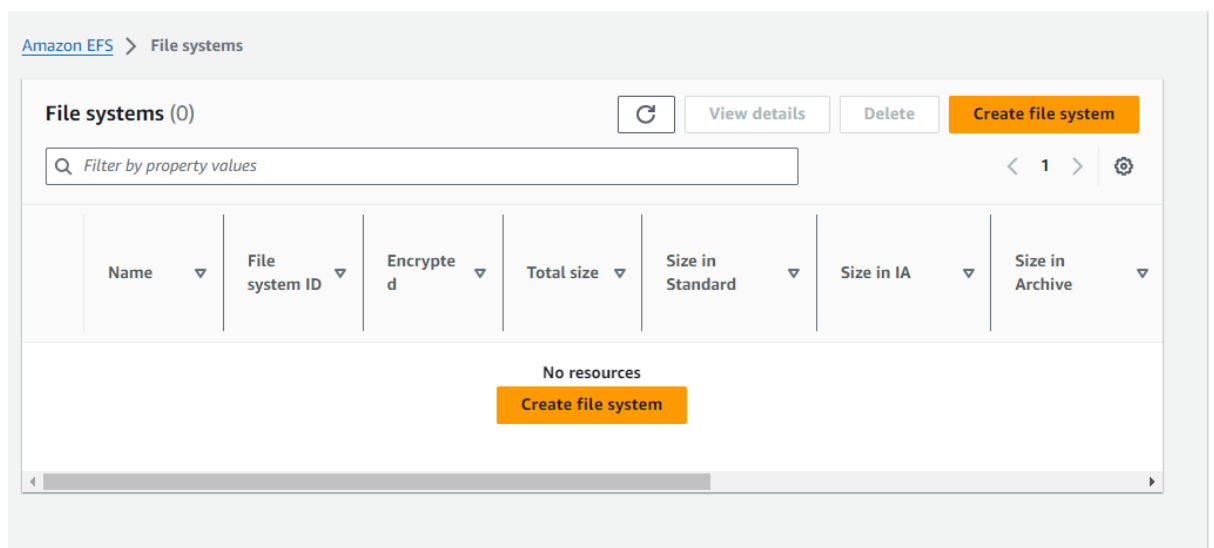
In AWS, EFS stands for Elastic File System. Imagine it as a digital filing cabinet in the cloud that multiple computers can access at the same time. It's easy to set up and grows automatically as you need more space for your files. You only pay for the storage you use, making it cost-effective. Think of it as a shared drive for your cloud applications.

(pay as you use)

1. Search EFS in search bar and click on it



2. Click on create file system



3. Specify name and click on create

Create file system

×

Create an EFS file system with recommended settings. [Learn more](#)

Name - optional
Name your file system.

Name can include letters, numbers, and +-=._:/ symbols, up to 256 characters.

Virtual Private Cloud (VPC)
Choose the VPC where you want EC2 instances to connect to your file system.

default

Cancel Customize Create

4. After creating EFS file system click on it....
5. Scroll down and click on **network tab** under network tab click on **Create mount Target** (note: remove all unwanted zones)

Metered size Monitoring Tags File system policy Access points **Network** Replication

Network

↻ Manage

Availability zone ▲	Mount target ID ▼	Subnet ID ▼	Mount target state ▼	IP address ▼	Network interface ID ▼	Security groups ▼
No resources						
Create mount target						

6. Select the preferred options and click on **Save** option

Network

Virtual Private Cloud (VPC)
Choose the VPC where you want EC2 instances to connect to your file system.

vpc-01a4a30d4e2c789b7
default

Mount targets
A mount target provides an NFSv4 endpoint at which you can mount an Amazon EFS file system. We recommend creating one mount target per Availability Zone. [Learn more](#)

Availability zone	Subnet ID	IP address	Security groups	
us-east-1c	subnet-01e25c6167c...	Automatic	Choose security groups	Remove

sg-050ee5c4887bb4577
launch-wizard-14

Add mount target

Cancel Save

Note:- this is availability zone specific service as a reason we required our instances and EFS volumes in same zone.....
Also select the same security group which is given to the instance....

7. File system created successfully now click on attach option

Success!
Submitted all mount target changes successfully for file system (fs-00202a062e7f34f51)

Amazon EFS > File systems > fs-00202a062e7f34f51

my_file_system (fs-00202a062e7f34f51)

Delete Attach

General Edit

8. Copy the path of efs volumes.....

Attach

Mount your Amazon EFS file system on a Linux instance. [Learn more](#)

☐ Mount via DNS ☒ Mount via IP

Availability zone
us-east-1c

Using the NFS client:

```
sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsz=1048576,hard,timeo=600,retrans=2,noresvport 172.31.14.185:/ efs
```

See our user guide for more information. [Learn more](#)

Close

9. Connect to the instance and edit `/etc/fstab` file for **permanent mounting**....

```
#
UUID=81e4e009-191b-464c-8cc3-22de217d1136 / xfs
UUID=EA7D-FA7D /boot/efi vfat defaults,noatime,
172.31.14.105:/ /mnt nfs4 defaults 0 0
~
~
```

10. We successfully able to access the efs file system through our instance.....

```
[root@ip-172-31-6-123 ec2-user]# mount -a
[root@ip-172-31-6-123 ec2-user]# df -hT
```

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
devtmpfs	devtmpfs	4.0M	0	4.0M	0%	/dev
tmpfs	tmpfs	453M	0	453M	0%	/dev/shm
tmpfs	tmpfs	182M	440K	181M	1%	/run
/dev/nvme0n1p1	xfs	8.0G	1.6G	6.4G	20%	/
tmpfs	tmpfs	453M	0	453M	0%	/tmp
/dev/nvme0n1p128	vfat	10M	1.3M	8.7M	13%	/boot/efi
tmpfs	tmpfs	91M	0	91M	0%	/run/user/1000
172.31.14.105:/	nfs4	8.0E	0	8.0E	0%	/mnt

```
[root@ip-172-31-6-123 ec2-user]#
```