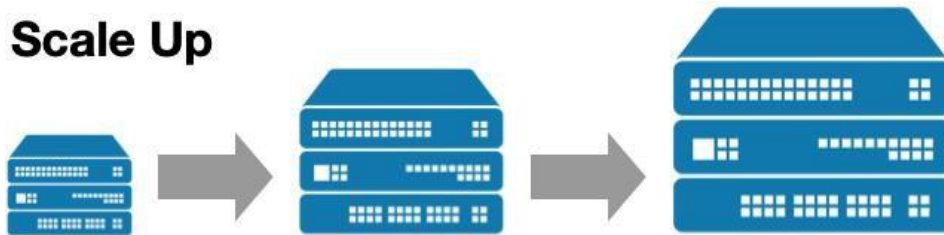


Scale Up and Scale Down

Scale Up

- This is also called as vertical scaling. Scale-up is a simple method of increasing your computing capacity by adding additional resources such as a central processing unit (CPU), random-access memory (RAM) and Hard Disc Drive (HDD) to on-premises servers or improving the performance of your disk by changing it to a faster one.



- Create one Linux EC2 Machine
- Select the Instance



- To Change the CPU & RAM we need to stop the instance



- Now try to Change the Instance type
- Increase the HDD Size



- Select your Volume



- Change size to 10
- Click on modify
- Click on Yes

Scale Down

- It is opposite to Scale up. To Scale down the CPU & RAM we can use the same process to change the two components to our EC2 Machines.
- **Note: You can expand the root and user volumes once in a 6-hour period & we can't reduce the HDD after increase**

Scale Out and Scale In:

- It is also called as Horizontal Scaling. Auto Scaling Feature is Scale out & Scale In.

Scale Out



Elastic Block Store – Linux

- One EC2 Machine can have multiple Volumes also & Additional volume is known as Elastic Block Store (EBS)
- Creating Linux EC2 Machine using the multiple Volumes
- Go to Add Storage
- Click on Add New Volume
- Check Delete on Termination
- Launch the Instance
- Check Volumes



- Mount the volume
- Connect Linux EC2 machine using putty
- **Check disk space usage**
`df -hT`
- **Check available disk device**
`lsblk`

Note down the name of the added ebs volume (xvdb)

- **Information about device**

```
sudo file -s /dev/xvdb
```

- **Create file system on the volume**

```
sudo mkfs -t ext4 /dev/xvdb
```

- **Create Directory**

```
mkdir test
```

- **Mount the Volume**

```
sudo mount /dev/xvdb test
```

- **Change directory**

```
cd test
```

- **Create files**

```
sudo touch file1 file2 file3
```

- **Check the files**

```
ls
```

- **Check disk space usage**

```
df -hT
```

- **Change directory**

```
cd
```

- **Unmount the EBS volume**

```
sudo umount test
```

- **Detach Volume**

Actions



Detach Volume

- Click on Detach
- Create another Linux ec2 machine with root volume in same availability zone in which we have our EBS volume
- Attach Volume
- Select the Volume which we want to attach with EC2 Machine

Actions



Attach Volume

- Select the instance
- Click on attach volume
- Now connect the second ec2 machine using putty

- **Check disk space usage**
`df -hT`
- **Check available disk device**
`Lsblk`
- Note down the name of the added ebs volume (xvdf)
- **Information about device**
`sudo file -s /dev/xvdf`
- **Create directory**
`mkdir training`
- **Mount the Volume**
`sudo mount /dev/xvdf training`
- **Change directory**
`cd training`
- **Check the files**
`ls`

Elastic Block Store – Windows

- Create Windows EC2 Machine with EBS Volume
- Check the volumes



- Connect the instance using remote desktop connection
- Click on start button
- Open server manager
- Click on files and storage services
- Click on disks
- Select the disk & right click

- Click on bring online
- Click on yes
- Right click on the disk
- Click on initialize
- Click on yes
- Right click on the disk
- Click on new volume
- Click on next (Multiple Times)
- Click on create
- Now check the windows system
- Open D Drive & create one file
- Unmount the volume from ec2 machine
- Go to Server manager
- Click on files and storage services
- Click on disks
- Right click on EBS disk
- Click on Take Offline
- Click on Yes
- Detach the volume
- Select the volume



- Click on Detach

- Create windows ec2 machine in the same availability zone in which we have our EBS volume

- Attach the EBS volume with instance



- Select the instance
- Click on attach volume
- Connect the new windows ec2 machine using Remote desktop connection
- Open server manager
- Click on file and storage services
- Click on disks
- Our ebs disk is showing as offline. Make that disk online
- Select the ebs disk
- Right click on ebs disk & click on being online
- Click on Yes
- Now check this PC
- Open D Drive