Module 2: EC2 and EFS Assignment

Tasks To Be Performed:

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

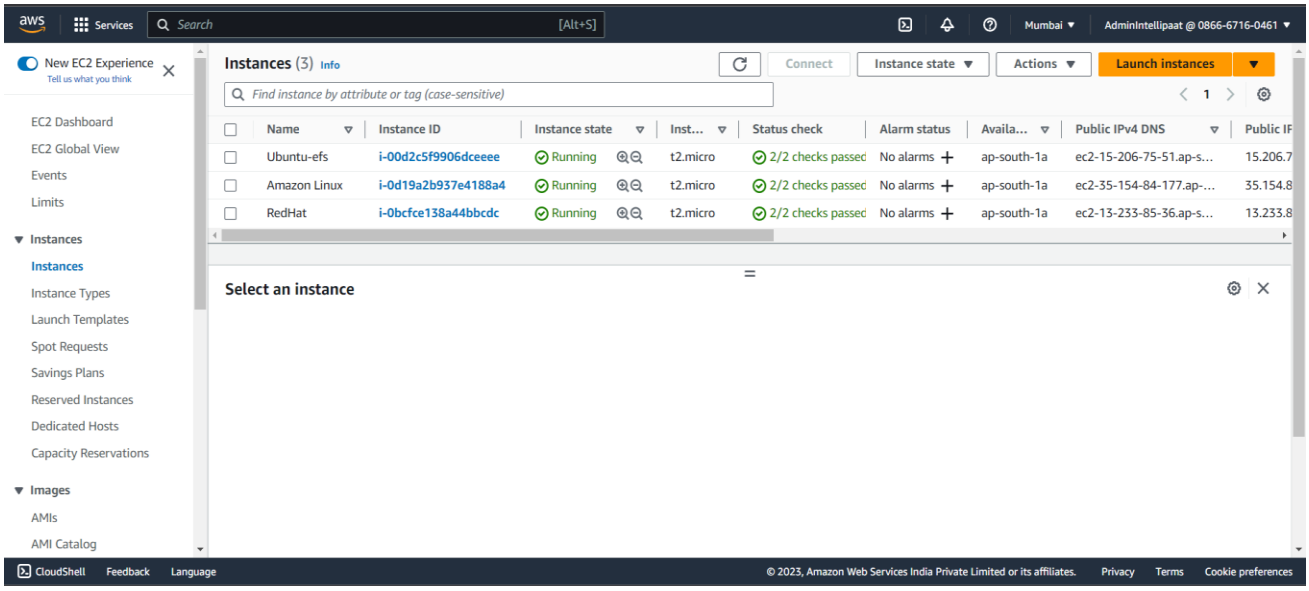
Solution

EFS (Elastic file system) is a file-level storage service that provides a shared elastic file system with virtually limitless scalability. EFS is a highly available storage system that can be used by multiple servers at the same time.

Steps for creation of EFS

Go to management console→ Search EFS→ Create File System→Put Name, Select the VPC, Storage class (here we will get 2 options A. Standard (we can store data redundantly across multi-AZ), B. One zone (here we can store data redundantly in the single zone only))→CREATE.

Now create 3 EC2 instances of different Operating systems, use the same Security Group (All traffic & anywhere) for all 3 instances, and also the EFS.



Steps for changing the Security Group in EFS, Go to EFS→ Select the EFS→ Network→ Manage→ Select the security group→ Save.

Now connect the UBUNTU instance and then update the machine, command for updating the machine is

$ sudo apt-get update

Now, we will install the NFS-COMMON to interact with the EFS from my Ubuntu Machine, command for installing nfs-common is

$ sudo apt-get install nfs-common -y

After this, we need to create a directory upon which we need to mount the EFS

$ sudo mkdir efs

Here we create the directory in the name 'efs' which must be the same as the name put in the command used to mount the EFS.

Steps for attaching the EFS

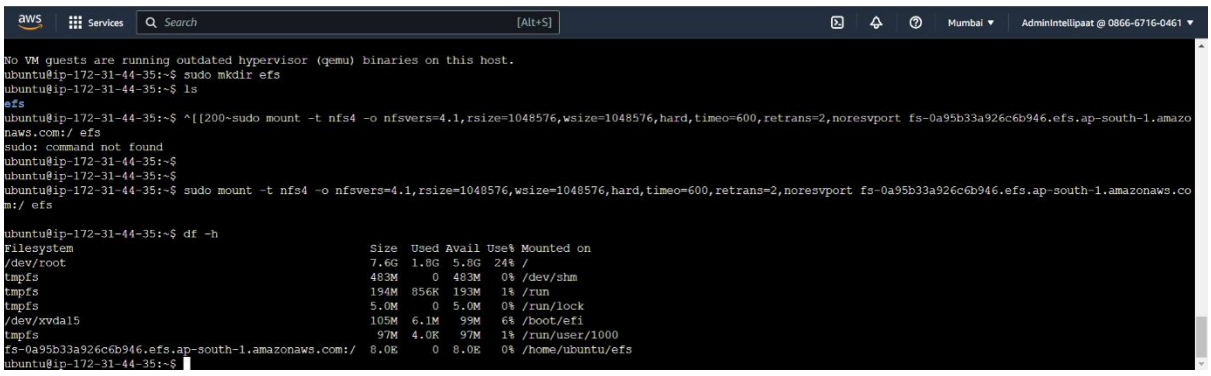
Go to EFS→ Attach (here we will get two options 1. Mount via DNS & 2. Mount via IP, we can use anyone to attach)→ after that we will again get two options 1. Using EFS mount helper & 2. NFS client, since we installed the NFS client on our machine so we will select the second option → Copy the command and paste it on our machine prompt.

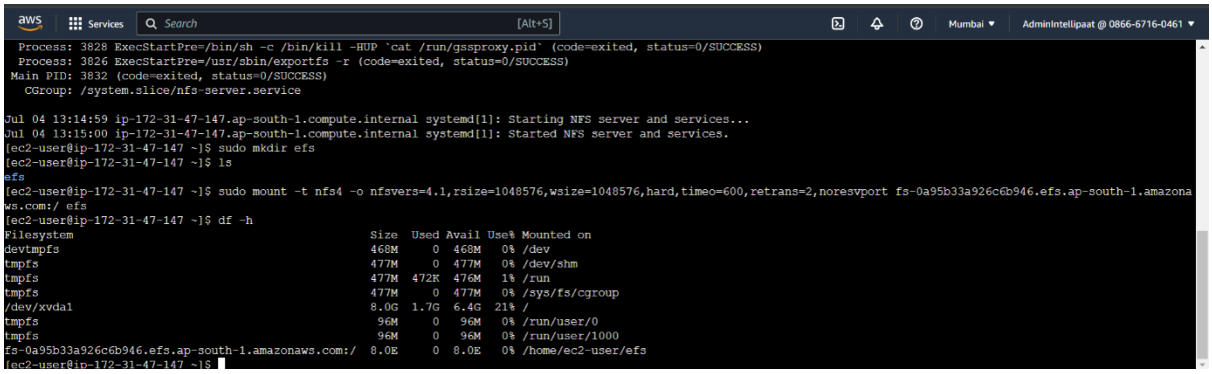
$ sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,retrans=2,noresvport fs-0a95b33a926c6b946.efs.ap-south-1.amazonaws.com:/ efs

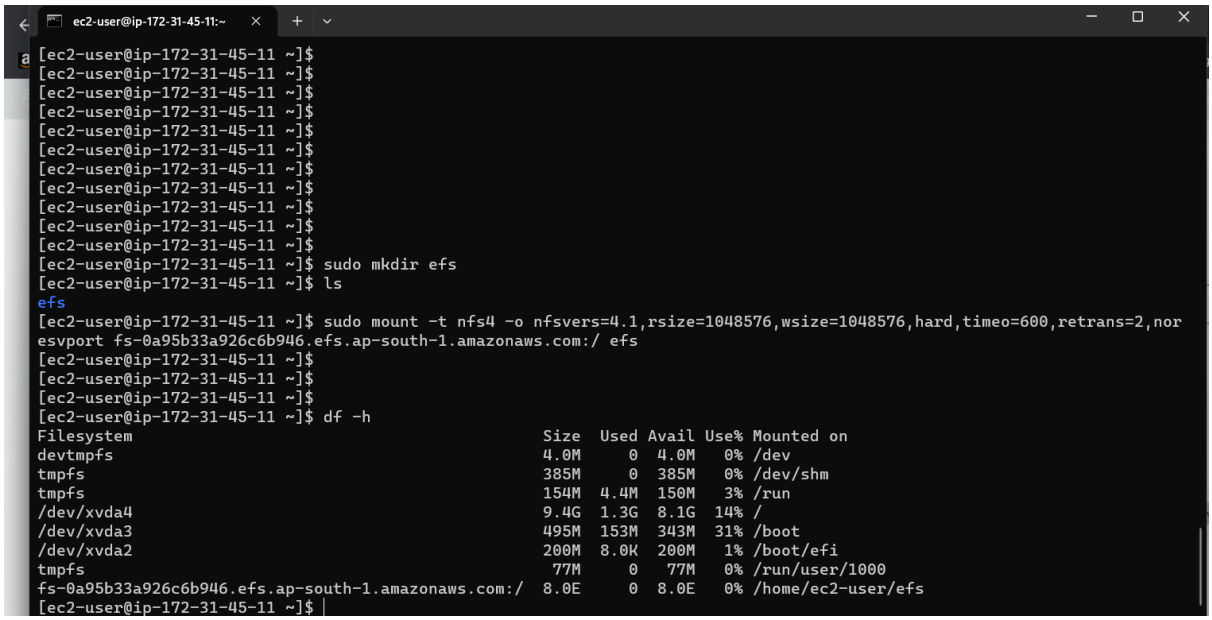
Now check whether it is mounted or not on our system, for that use the following command

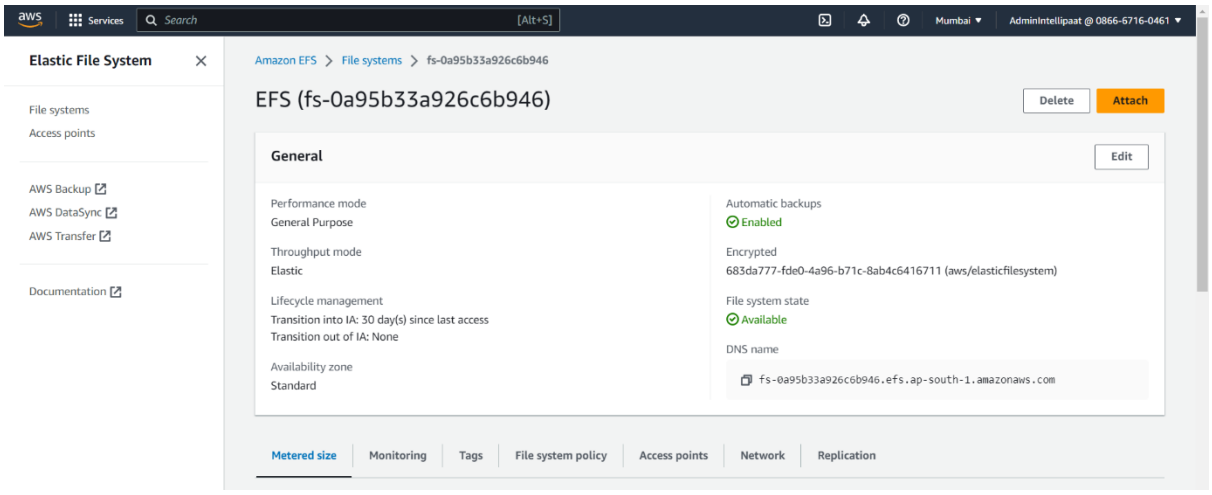
$ df -h

Results




Process: 3828 ExecStartPre=/bin/sh -c /bin/kill -HUP `cat /run/gssproxy.pid` (code=exited, status=0/SUCCESS)
Process: 3826 ExecStartPre=/usr/sbin/exportfs -r (code=exited, status=0/SUCCESS)
Main PID: 3832 (code=exited, status=0/SUCCESS)
CGroup: /system.slice/nfs-server.service
Jul 04 13:14:59 ip-172-31-47-147.ap-south-1.compute.internal systemd[1]: Starting NFS server and services...
Jul 04 13:15:00 ip-172-31-47-147.ap-south-1.compute.internal systemd[1]: Started NFS server and services.
[ec2-user@ip-172-31-47-147 ~]$ sudo mkdir efs
[ec2-user@ip-172-31-47-147 ~]$ ls
efs
[ec2-user@ip-172-31-47-147 ~]$ sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,retrans=2,noresvport fs-0a95b33a926c6b946.efs.ap-south-1.amazonaws.com:/ efs
[ec2-user@ip-172-31-47-147 ~]$ df -h
Filesystem Size Used Avail Use% Mounted on
devtmpfs 468M 0 468M 0% /dev
tmpfs 477M 0 477M 0% /dev/shm
tmpfs 477M 472K 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/0
tmpfs 96M 0 96M 0% /run/user/1000
fs-0a95b33a926c6b946.efs.ap-south-1.amazonaws.com:/ 8.0E 0 8.0E 0% /home/ec2-user/efs
[ec2-user@ip-172-31-47-147 ~]$


ec2-user@ip-172-31-45-11:~
[ec2-user@ip-172-31-45-11 ~]$ sudo mkdir efs
[ec2-user@ip-172-31-45-11 ~]$ ls
efs
[ec2-user@ip-172-31-45-11 ~]$ sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,retrans=2,noresvport fs-0a95b33a926c6b946.efs.ap-south-1.amazonaws.com:/ efs
[ec2-user@ip-172-31-45-11 ~]$ df -h
Filesystem Size Used Avail Use% Mounted on
devtmpfs 4.0M 0 4.0M 0% /dev
tmpfs 385M 0 385M 0% /dev/shm
tmpfs 154M 4.4M 150M 3% /run
/dev/xvda4 9.4G 1.3G 8.1G 14% /
/dev/xvda3 495M 153M 343M 31% /boot
/dev/xvda2 200M 8.0K 200M 1% /boot/efi
tmpfs 77M 0 77M 0% /run/user/1000
fs-0a95b33a926c6b946.efs.ap-south-1.amazonaws.com:/ 8.0E 0 8.0E 0% /home/ec2-user/efs
[ec2-user@ip-172-31-45-11 ~]$


Elastic File System
File systems
Access points
AWS Backup
AWS DataSync
AWS Transfer
Documentation
Amazon EFS > File systems > fs-0a95b33a926c6b946
EFS (fs-0a95b33a926c6b946)
Delete
Attach
General
Edit
Performance mode
General Purpose
Throughput mode
Elastic
Lifecycle management
Transition into IA: 30 day(s) since last access
Transition out of IA: None
Availability zone
Standard
Automatic backups
Enabled
Encrypted
683da777-fde0-4a96-b71c-8ab4c6416711 (aws/elasticfilesystem)
File system state
Available
DNS name
fs-0a95b33a926c6b946.efs.ap-south-1.amazonaws.com
Metered size
Monitoring
Tags
File system policy
Access points
Network
Replication