Assignment-2,

EC2

Problem Statement:

You work for XYZ Corporation. Your corporation wants to launch a new web-based application using AWS Virtual Machines. Configure the resources accordingly for the tasks.

Tasks to Be Performed:

1. Create an instance in the US-East-1 (N. Virginia) region with an Ubuntu OS and install Nginx for making them web servers.

2. Change the default website with a page displaying the message: “Hello World”

Solution:

Created new Instance, EC2 – Launch Instance

Name: ruchi-instance

Machine: Ubuntu

Instance Type: t2micro

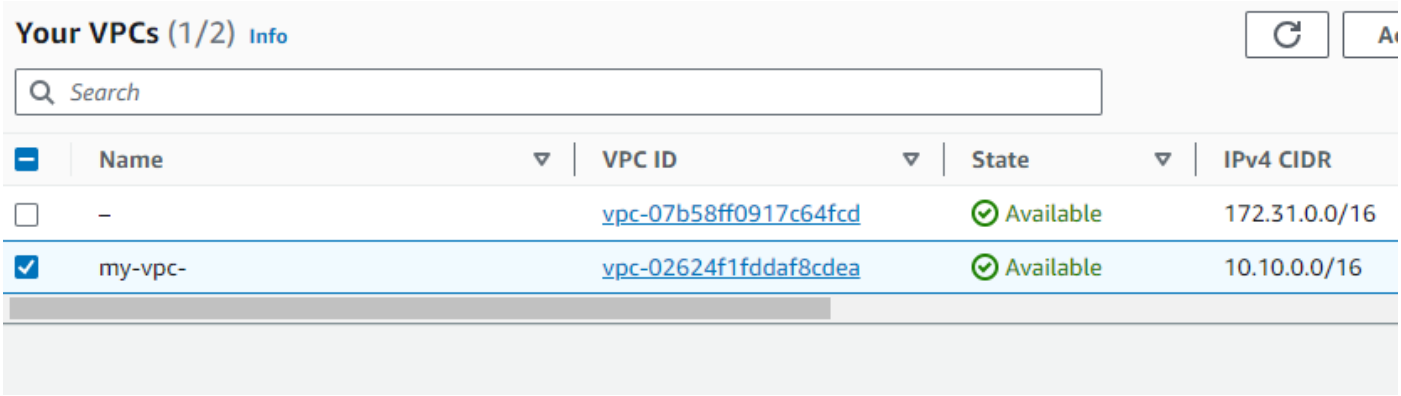
Keypair and Security group: create/ add existed one

Network setting, Type: All traffic

VPC- Select default one

If you create new one: -

Create VPC, Subnet, Internetgateway, Route Table(public) and then attach RT with the subnet and update internet gateway.



Subnets (3) Info

Actions | Create subnet

Find resources by attribute or tag

1

Name	Subnet ID	State	VPC	IPv4 CIDR
ny-subnet-03	subnet-0c4b6c520135c012c	Available	vpc-02624f1fddaf8cdea | my-vpc-	10.10.1.0/26
ny-subnet-01	subnet-0b38a4f68a78172f0	Available	vpc-07b58ff0917c64fcd	172.31.0.0/25
ny-subnet-02	subnet-0d933f529314aa1e8	Available	vpc-02624f1fddaf8cdea | my-vpc-	10.10.0.0/26

Internet gateways (1) Info

Actions | Create internet gateway

Search

1

Name	Internet gateway ID	State	VPC ID
My-IGW	igw-094a3a52185994fab	Attached	vpc-02624f1fddaf8cdea | my-vpc-

Route tables (1/3) Info

Actions | Create route

Find resources by attribute or tag

1

Name	Route table ID	Explicit subnet associ...	Edge associations	Ma
–	rtb-08b56cb3358a6b118	–	–	Yes
–	rtb-06a3a2696b5a3bbd9	–	–	Yes
my-RT	rtb-083a1b0c3eb634ede	subnet-0d933f529314aa...	–	No

rtb-083a1b0c3eb634ede / my-RT

Details | Routes | Subnet associations | Edge associations | Route propagation | Tags

Routes (2)

Both | Edit routes

Filter routes

1

Destination	Target	Status	Propagated
0.0.0.0/0	igw-094a3a52185994fab	Active	No
10.10.0.0/16	local	Active	No

rtb-083a1b0c3eb634ede / my-RT

Details | Routes | Subnet associations | Edge associations | Route propagation | Tags

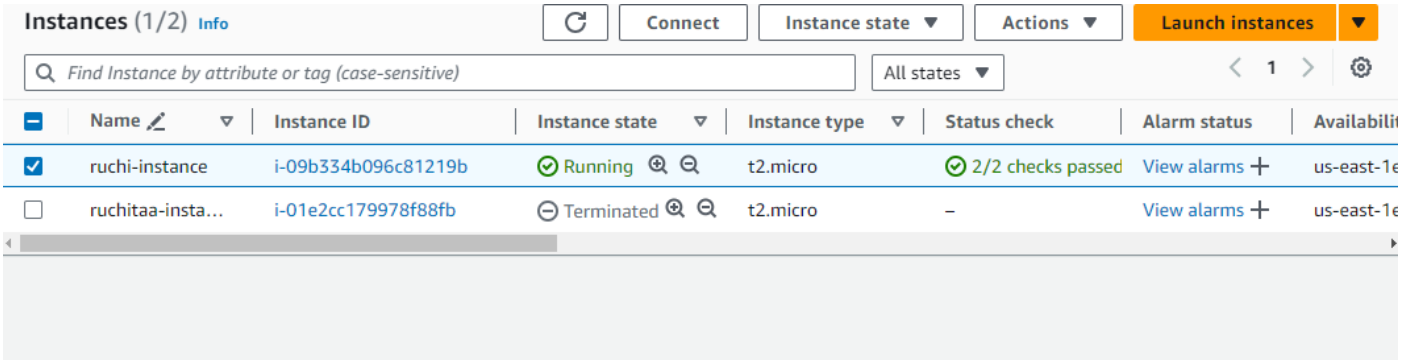
Explicit subnet associations (1)

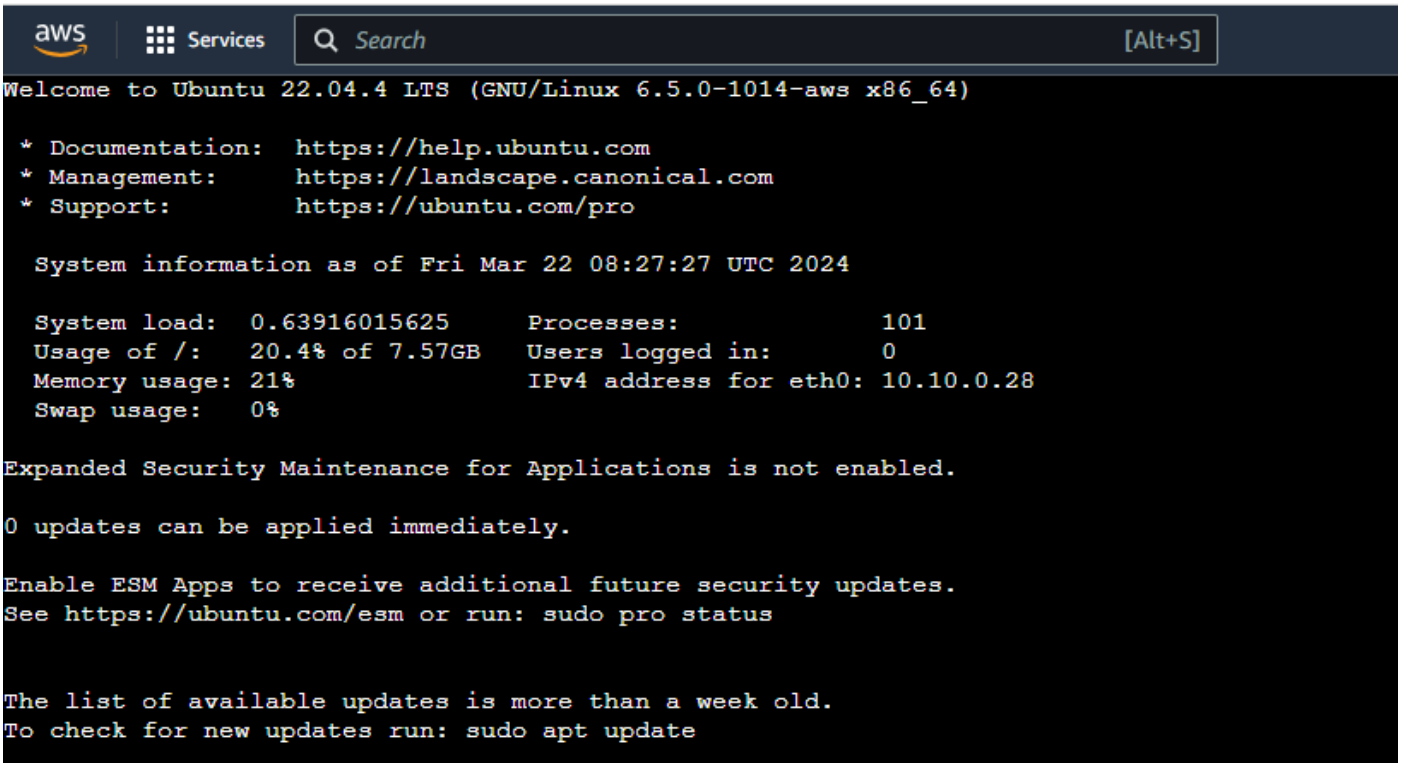
Edit subnet associations

Find subnet association

1

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
my-subnet-02	subnet-0d933f529314aa1e8	10.10.0.0/26	–





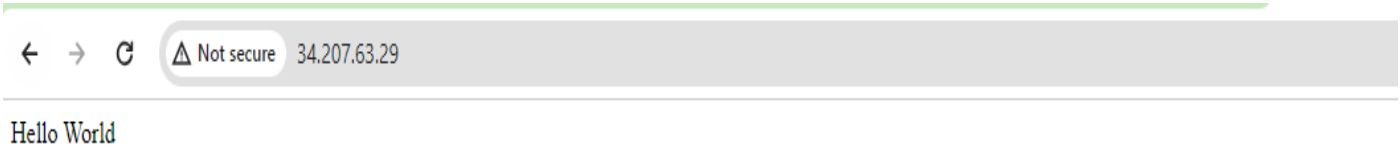
Run the following commands:

1. sudo apt-get update –y
2. sudo apt-get install ngnix –y
3. cd /var/www/html
4. sudo rm index.nginx-debian.html
5. sudo nano index.html

Type- Hello World

Save and exit (ctrl+s and ctrl+x)

Result:



Hello World

EBS

Problem Statement:

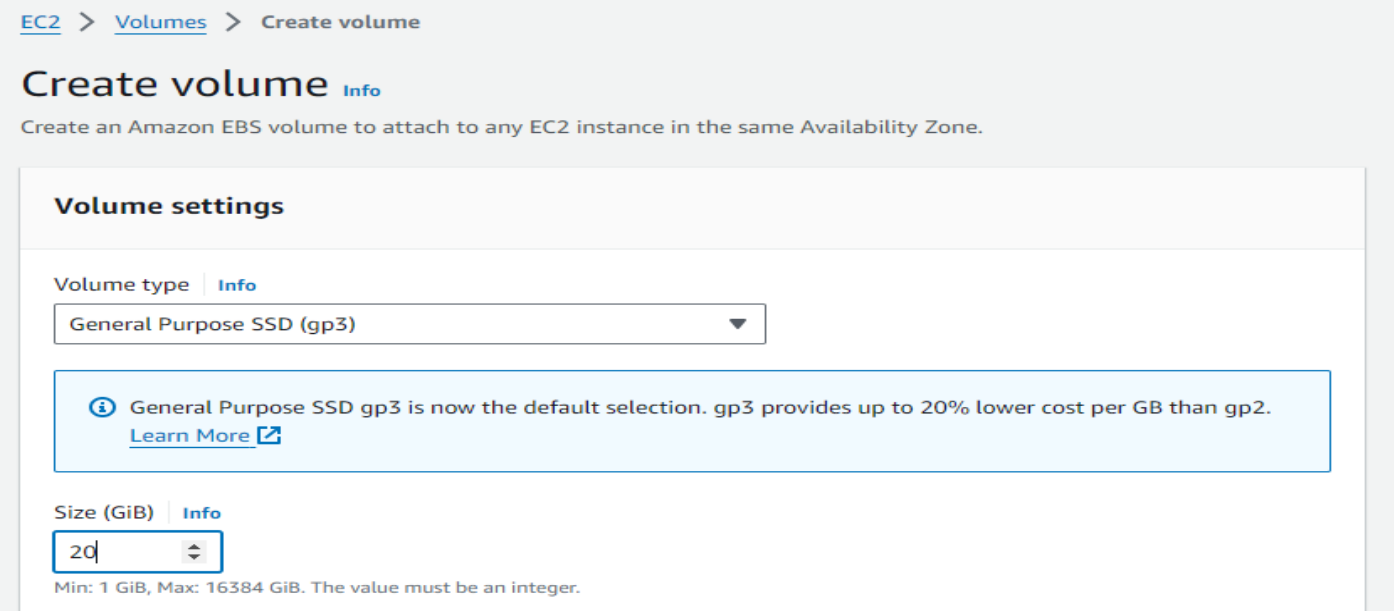
You work for XYZ Corporation. Your corporation wants to launch a new web-based application using AWS Virtual Machines. Configure the resources accordingly with appropriate storage for the tasks.

Tasks to Be Performed:

1. Launch a Linux EC2 instance.
2. Create an EBS volume with 20 GB of storage and attach it to the created EC2 instance.
3. Resize the attached volume and make sure it reflects in the connected instance.

Solution:

Step1) Created volume of size 20GB of storage and attached to created EC2 instance



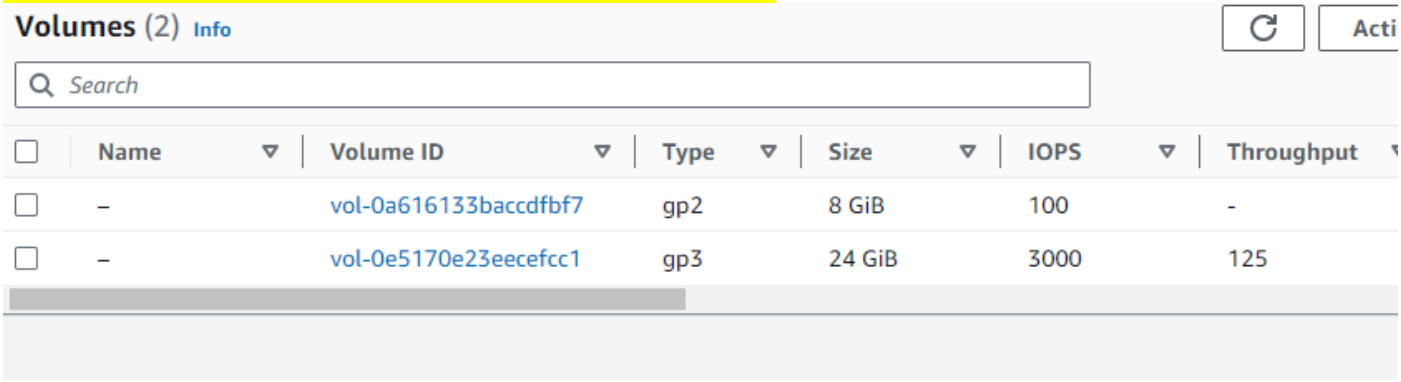
To Check the volume attached, enter the command- lsblk

```
ubuntu@ip-10-10-0-46:~$ lsblk
NAME      MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
loop0       7:0    0 24.9M  1 loop /snap/amazon-ssm-agent,
loop1       7:1    0 55.7M  1 loop /snap/core18/2812
loop2       7:2    0 63.9M  1 loop /snap/core20/2182
loop3       7:3    0   87M  1 loop /snap/lxd/27037
loop4       7:4    0 40.4M  1 loop /snap/snapd/20671
xvda      202:0    0    8G  0 disk
├─xvda1   202:1    0  7.9G  0 part /
├─xvda14  202:14   0    4M  0 part
└─xvda15  202:15   0  106M  0 part /boot/efi
xvdf      202:80   0   20G  0 disk
```

Enter the following command for the extension of Ubuntu machine

sudo mkfs -t ext4 /dev/xvdf

Step2) Now resize the Volume from 20GB to 24GB



Run the following command to mount and verify

1. sudo mkdir ebsvolume (create new directory to mount)
2. sudo mount /dev/xvdf ebsvolume
3. sudo resize2fs /dev/xvdf
4. lsblk

```
ubuntu@ip-10-10-0-46:~$ lsblk
NAME      MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
loop0       7:0    0 24.9M  1 loop /snap/amazon-ssm-agent/7628
loop1       7:1    0 55.7M  1 loop /snap/core18/2812
loop2       7:2    0 63.9M  1 loop /snap/core20/2182
loop3       7:3    0   87M  1 loop /snap/lxd/27037
loop4       7:4    0 40.4M  1 loop /snap/snapd/20671
xvda      202:0    0    8G  0 disk
├─xvda1   202:1    0  7.9G  0 part /
├─xvda14  202:14   0    4M  0 part
└─xvda15  202:15   0  106M  0 part /boot/efi
xvdf      202:80   0   24G  0 disk /home/ubuntu/ebsvolume
```

Verified that the volume that is resized to 24GB reflects in the connected instance.

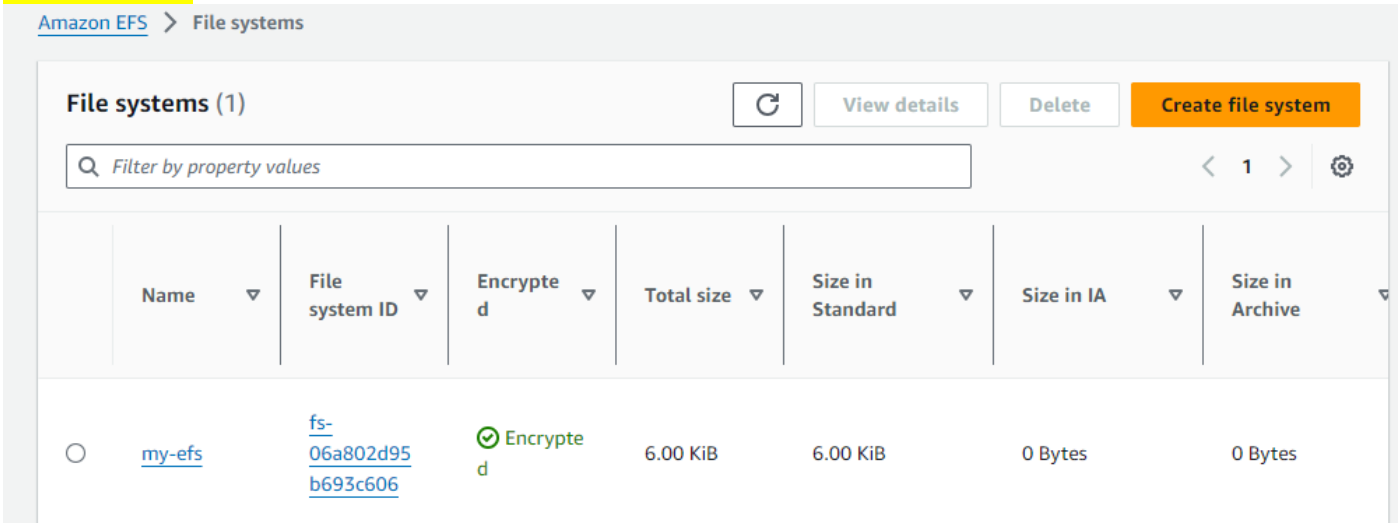
EC2 & EFS

Task to be performed:

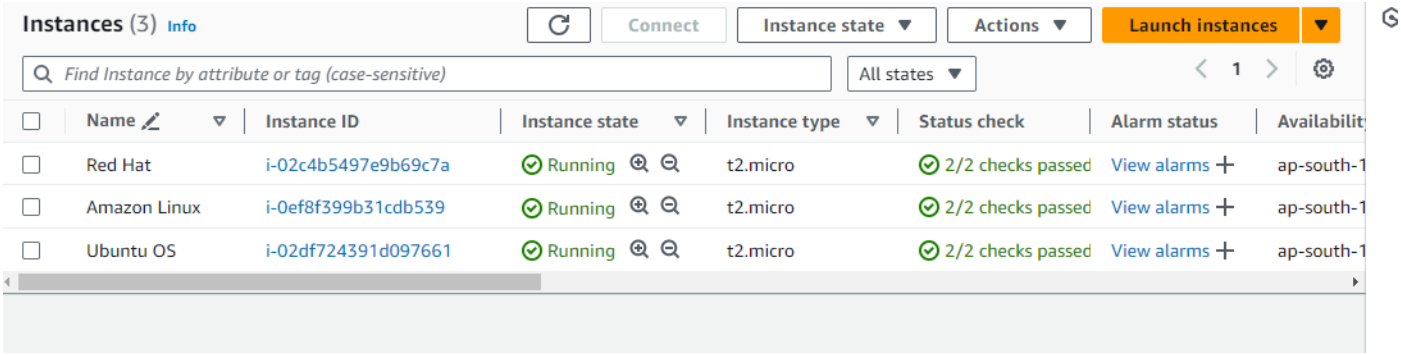
Create an EFS and connect it to 3 different EC2 instances. Make sure that all instances have different operating systems. For instance, Ubuntu, Red Hat Linux and Amazon Linux 2.

Solution:-

Created EFS



Created 3 instances



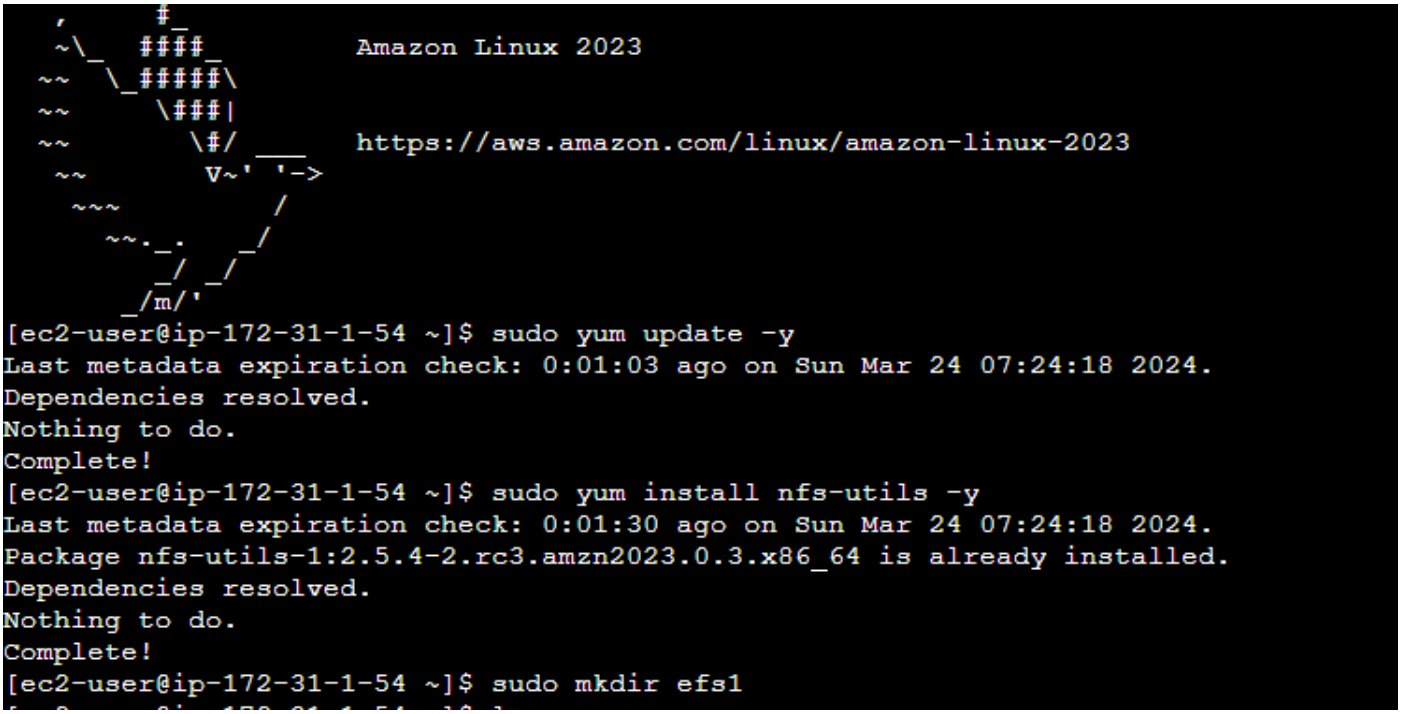
Connected ubuntu machine to EC2

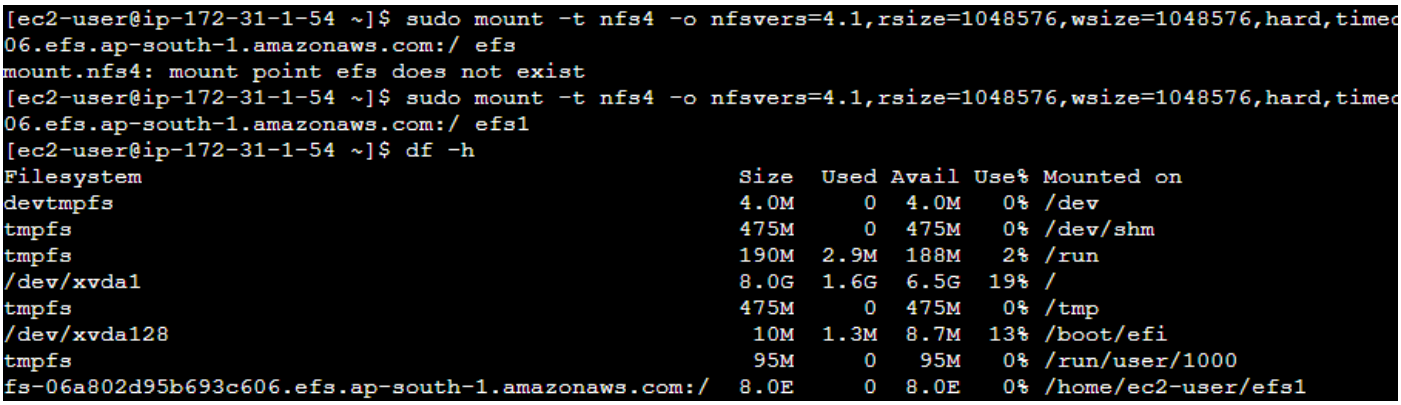
```
24 updates can be applied immediately.
15 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status


Last login: Sun Mar 24 07:11:41 2024 from 13.233.177.4
ubuntu@ip-172-31-13-146:~$ ls
efs
ubuntu@ip-172-31-13-146:~$ sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsize=1048576,har
.efs.ap-south-1.amazonaws.com:/ efs
ubuntu@ip-172-31-13-146:~$ df -h
Filesystem                                      Size  Used Avail Use% Mounted on
/dev/root                                       7.6G  1.8G  5.9G  24% /
tmpfs                                           475M     0  475M   0% /dev/shm
tmpfs                                           190M  876K  189M   1% /run
tmpfs                                           5.0M     0  5.0M   0% /run/lock
/dev/xvda15                                     105M  6.1M   99M   6% /boot/efi
tmpfs                                            95M  4.0K   95M   1% /run/user/1000
fs-06a802d95b693c606.efs.ap-south-1.amazonaws.com:/  8.0E     0  8.0E   0% /home/ubuntu/efs
ubuntu@ip-172-31-13-146:~$
```

Connected Amazon linux to EC2





Connected Red Hat machine to Ec2

```
  Installing       : quota-1:4.06-6.el9.x86_64
  Installing       : libev-4.33-5.el9.x86_64
  Installing       : libverto-libev-0.3.2-3.el9.x86_64
  Installing       : gssproxy-0.8.4-6.el9.x86_64
  Running scriptlet: gssproxy-0.8.4-6.el9.x86_64
  Running scriptlet: nfs-utils-1:2.5.4-20.el9.x86_64
  Installing       : nfs-utils-1:2.5.4-20.el9.x86_64
  Running scriptlet: nfs-utils-1:2.5.4-20.el9.x86_64
  Installing       : sssd-nfs-idmap-2.9.1-4.el9_3.5.x86_64
  Running scriptlet: sssd-nfs-idmap-2.9.1-4.el9_3.5.x86_64
  Verifying        : libev-4.33-5.el9.x86_64
  Verifying        : libverto-libev-0.3.2-3.el9.x86_64
  Verifying        : quota-1:4.06-6.el9.x86_64
  Verifying        : quota-nls-1:4.06-6.el9.noarch
  Verifying        : rpcbind-1.2.6-5.el9.x86_64
  Verifying        : keyutils-1.6.3-1.el9.x86_64
  Verifying        : gssproxy-0.8.4-6.el9.x86_64
  Verifying        : libnfsidmap-1:2.5.4-20.el9.x86_64
  Verifying        : libtirpc-1.3.3-2.el9.x86_64
  Verifying        : nfs-utils-1:2.5.4-20.el9.x86_64
  Verifying        : sssd-nfs-idmap-2.9.1-4.el9_3.5.x86_64
Installed products updated.

Installed:
  gssproxy-0.8.4-6.el9.x86_64           keyutils-1.6.3-1.el9.x86_64              lib
  libnfsidmap-1:2.5.4-20.el9.x86_64     libtirpc-1.3.3-2.el9.x86_64              lib
  nfs-utils-1:2.5.4-20.el9.x86_64       quota-1:4.06-6.el9.x86_64                quo
  rpcbind-1.2.6-5.el9.x86_64            sssd-nfs-idmap-2.9.1-4.el9_3.5.x86_64

Complete!
```

```
[ec2-user@ip-172-31-41-35 ~]$ sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsize=10485
esvport fs-06a802d95b693c606.efs.ap-south-1.amazonaws.com:/ efs2
[ec2-user@ip-172-31-41-35 ~]$ df -h
Filesystem                                        Size  Used Avail Use% Mounted on
devtmpfs                                          4.0M     0  4.0M   0% /dev
tmpfs                                             377M     0  377M   0% /dev/shm
tmpfs                                             151M  6.4M  145M   5% /run
/dev/xvda4                                        9.2G  1.6G  7.7G  17% /
/dev/xvda3                                        536M  254M  283M  48% /boot
/dev/xvda2                                        200M  7.0M  193M   4% /efi
tmpfs                                              76M     0   76M   0% /run/user/1000
fs-06a802d95b693c606.efs.ap-south-1.amazonaws.com:/  8.0E     0  8.0E   0% /home/ec2-user/
```

Commands Used to connect Ec2 through NFS path

For Ubuntu, command is sudo apt-get update –y

For Redhat or Amazon Linux, sudo yum update -y

1. For Ubuntu, sudo apt-get install nfs-common -y

For Redhat and Amazon Linux, sudo yum install nfs-utils -y

2. sudo mkdir efs

3. paste command from efs nfs client attach

4. df -h (check mounting status)

