Module 02 : EC2 AND EFS ASSIGNMENT

SUBMITTED BY :-HITESH CHAUHAN

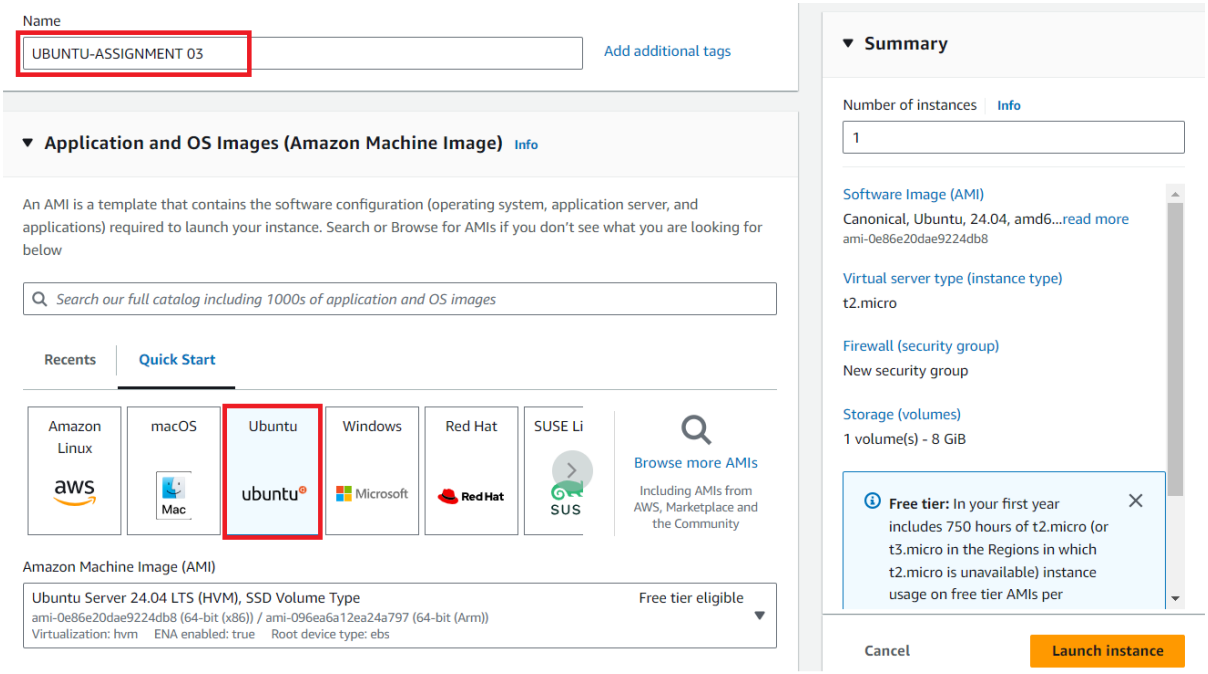
COURSES OFFERED:ADVANCED CLOUD COMPUTING AND DEVELOPS

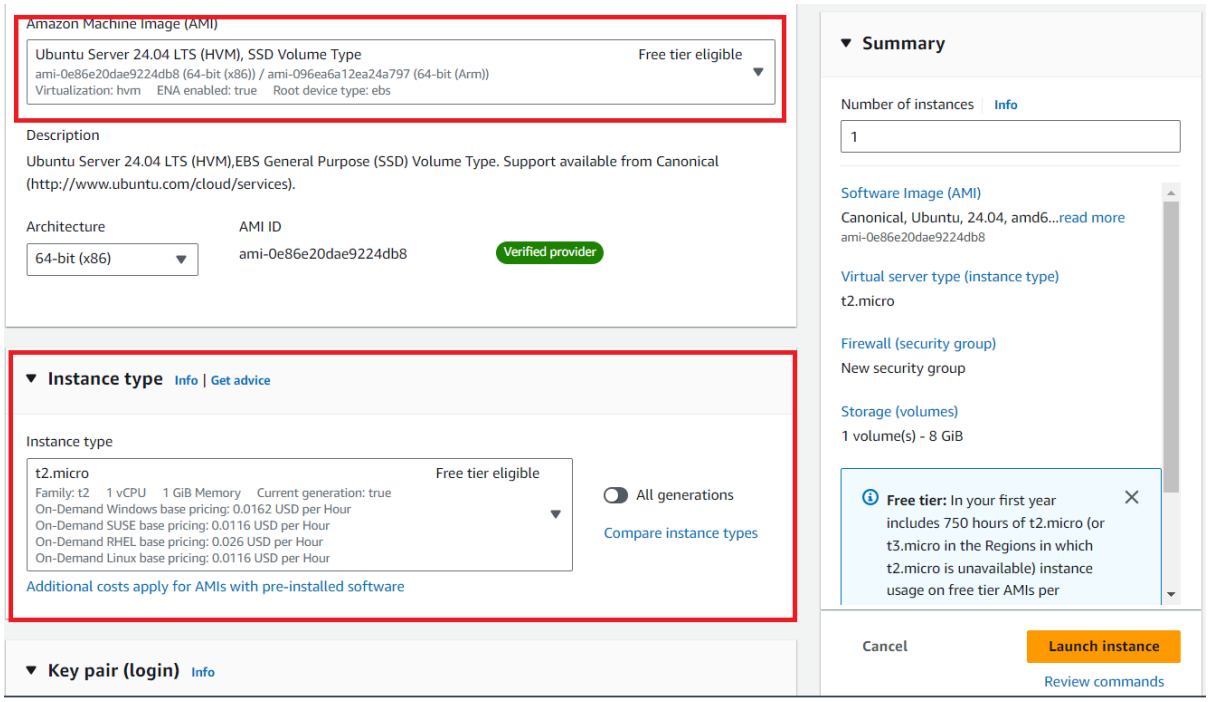
Tasks To Be Performed:

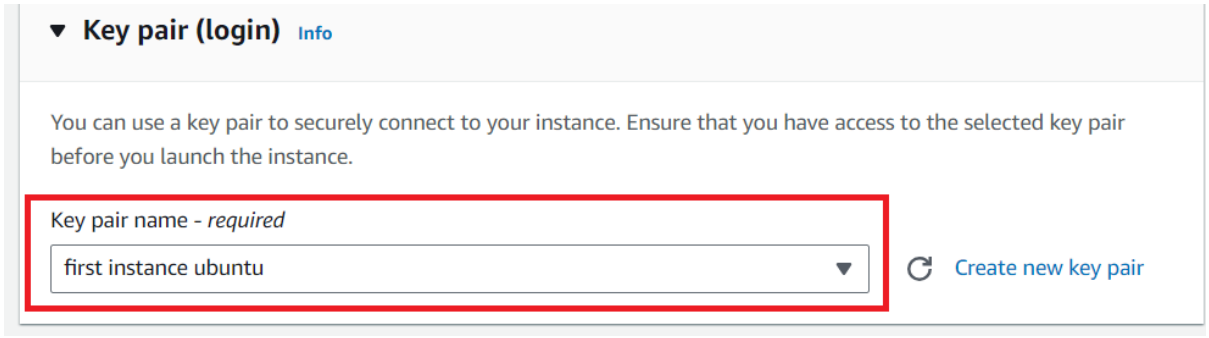
Create an EFS and connect it to 3 different EC2 instances. Make sure that all instances have different operating systems. For instance, Ubuntu, Red Hat Linux and Amazon Linux 2.

1.First we need to create the EC2 Instance Ubuntu

AMI SELECT-UBUNTU




Amazon Machine Image (AMI)
Ubuntu Server 24.04 LTS (HVM), SSD Volume Type
Free tier eligible
ami-0e86e20dae9224db8 (64-bit (x86)) / ami-096ea6a12ea24a797 (64-bit (Arm))
Virtualization: hvm ENA enabled: true Root device type: ebs
Description
Ubuntu Server 24.04 LTS (HVM),EBS General Purpose (SSD) Volume Type. Support available from Canonical (http://www.ubuntu.com/cloud/services).
Architecture
64-bit (x86)
AMI ID
ami-0e86e20dae9224db8
Verified provider
Instance type Info | Get advice
Instance type
t2.micro
Free tier eligible
Family: t2 1 vCPU 1 GiB Memory Current generation: true
On-Demand Windows base pricing: 0.0162 USD per Hour
On-Demand SUSE base pricing: 0.0116 USD per Hour
On-Demand RHEL base pricing: 0.026 USD per Hour
On-Demand Linux base pricing: 0.0116 USD per Hour
All generations
Compare instance types
Additional costs apply for AMIs with pre-installed software
Key pair (login) Info
Summary
Number of instances Info
1
Software Image (AMI)
Canonical, Ubuntu, 24.04, amd6...read more
ami-0e86e20dae9224db8
Virtual server type (instance type)
t2.micro
Firewall (security group)
New security group
Storage (volumes)
1 volume(s) - 8 GiB
Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per
Cancel
Launch instance
Review commands


Key pair (login) Info
You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.
Key pair name - required
first instance ubuntu
Create new key pair

Network settings Info

Edit

Network Info

vpc-0cd5cc6b9eceac511

Subnet Info

No preference (Default subnet in any availability zone)

Auto-assign public IP Info

Enable

Additional charges apply when outside of free tier allowance

Firewall (security groups) Info

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

- (•) Create security group
- ( ) Select existing security group

We'll create a new security group called '**launch-wizard-1**' with the following rules:

- [x] Allow SSH traffic from — Helps you connect to your instance — Anywhere 0.0.0.0/0
- [ ] Allow HTTPS traffic from the internet — To set up an endpoint, for example when creating a web server
- [ ] Allow HTTP traffic from the internet — To set up an endpoint, for example when creating a web server

⚠ Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only. ✕

Configure storage Info

Advanced

1x 8 GiB gp3 Root volume (Not encrypted)

ⓘ Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage ✕

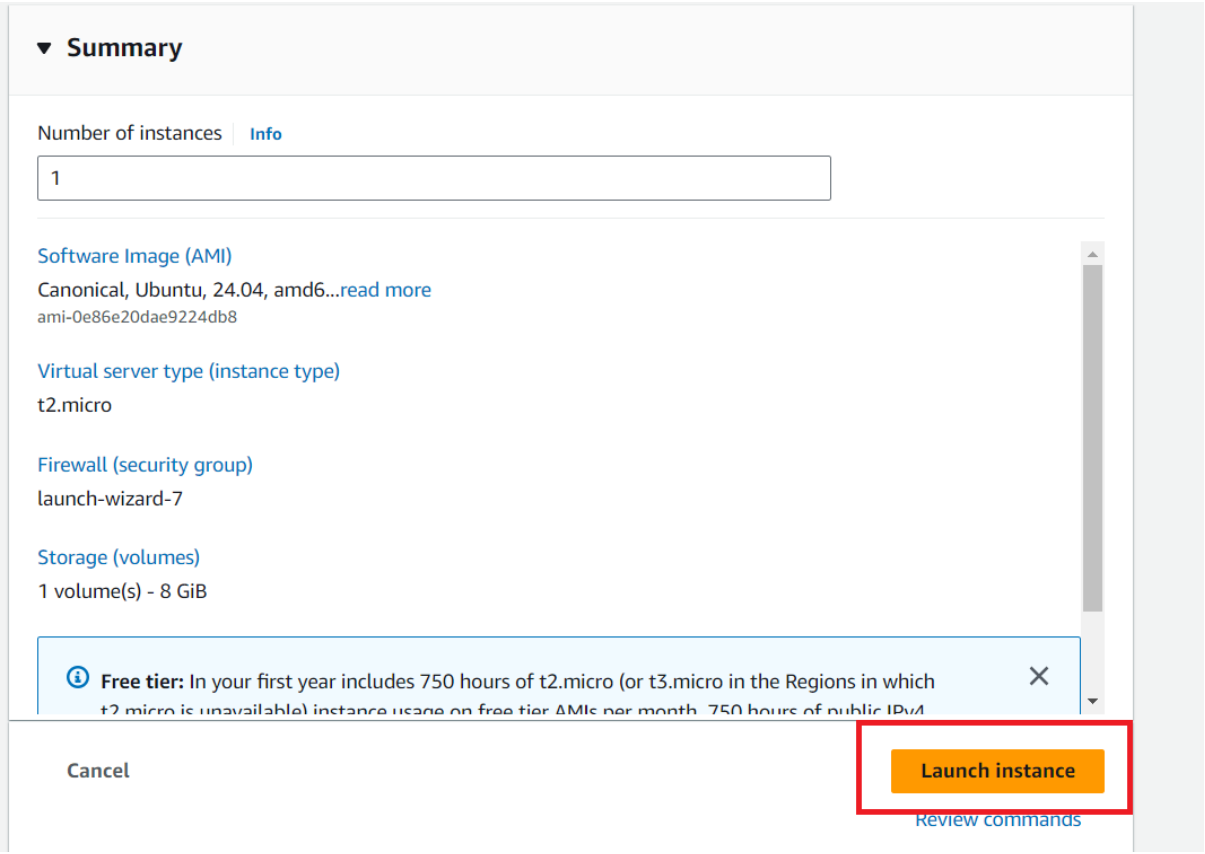
Add new volume

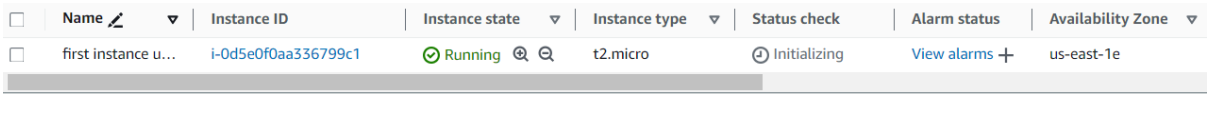
The selected AMI contains more instance store volumes than the instance allows. Only the first 0 instance store volumes from the AMI will be accessible from the instance

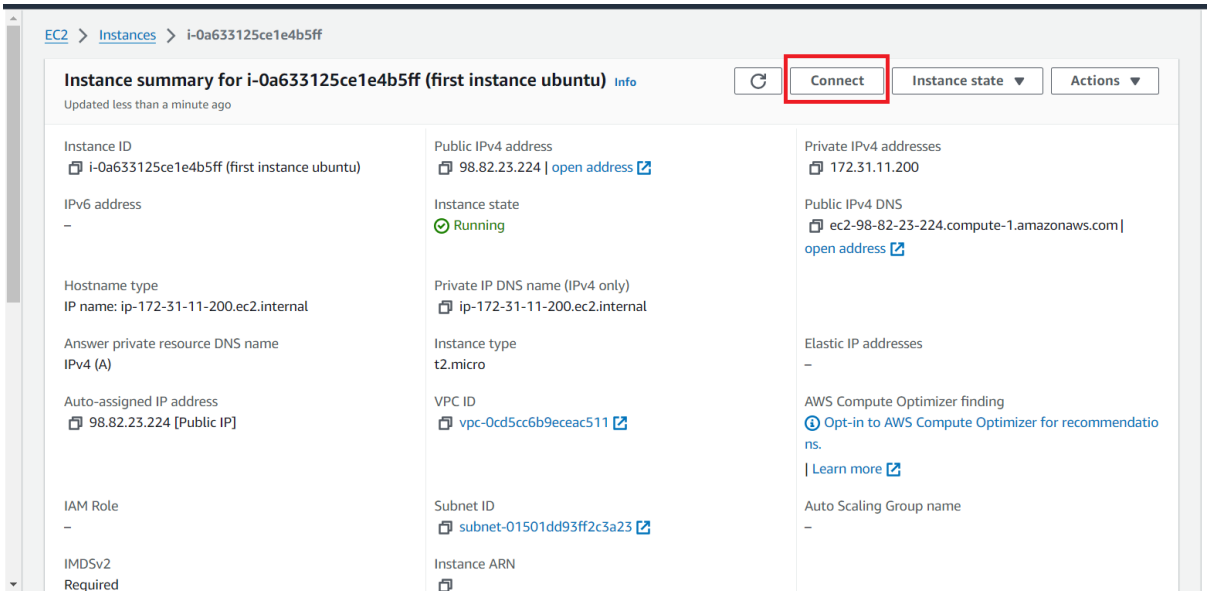
Click refresh to view backup information

The tags that you assign determine whether the instance will be backed up by any Data Lifecycle Manager policies.

0 x File systems Edit


Summary
Number of instances Info
1
Software Image (AMI)
Canonical, Ubuntu, 24.04, amd6...read more
ami-0e86e20dae9224db8
Virtual server type (instance type)
t2.micro
Firewall (security group)
launch-wizard-7
Storage (volumes)
1 volume(s) - 8 GiB
Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which
Cancel
Launch instance
Review commands


Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Availability Zone
first instance u...
i-0d5e0f0aa336799c1
Running
t2.micro
Initializing
View alarms
us-east-1e


EC2 > Instances > i-0a633125ce1e4b5ff
Instance summary for i-0a633125ce1e4b5ff (first instance ubuntu) Info
Updated less than a minute ago
Connect
Instance state
Actions
Instance ID
i-0a633125ce1e4b5ff (first instance ubuntu)
Public IPv4 address
98.82.23.224 | open address
Private IPv4 addresses
172.31.11.200
IPv6 address
–
Instance state
Running
Public IPv4 DNS
ec2-98-82-23-224.compute-1.amazonaws.com | open address
Hostname type
IP name: ip-172-31-11-200.ec2.internal
Private IP DNS name (IPv4 only)
ip-172-31-11-200.ec2.internal
Answer private resource DNS name
IPv4 (A)
Instance type
t2.micro
Elastic IP addresses
–
Auto-assigned IP address
98.82.23.224 [Public IP]
VPC ID
vpc-0cd5cc6b9eceac511
AWS Compute Optimizer finding
Opt-in to AWS Compute Optimizer for recommendations.
| Learn more
IAM Role
–
Subnet ID
subnet-01501dd93ff2c3a23
Auto Scaling Group name
–
IMDSv2
Required
Instance ARN

Port 22 (SSH) is open to all IPv4 addresses
Port 22 (SSH) is currently open to all IPv4 addresses, indicated by **0.0.0.0/0** in the inbound rule in your security group. For increased security, consider restricting access to only the EC2 Instance Connect service IP addresses for your Region: 18.206.107.24/29. Learn more.

Instance ID

i-0d5e0f0aa336799c1 (first instance ubuntu)

Connection Type

- (●) Connect using EC2 Instance Connect
  Connect using the EC2 Instance Connect browser-based client, with a public IPv4 address.
- ( ) Connect using EC2 Instance Connect Endpoint
  Connect using the EC2 Instance Connect browser-based client, with a private IPv4 address and a VPC endpoint.

Public IP address

18.204.8.71

Username

Enter the username defined in the AMI used to launch the instance. If you didn't define a custom username, use the default username, ubuntu.

ubuntu

Note: In most cases, the default username, ubuntu, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username.

Cancel | Connect

EC2 > Instances > Launch an instance

Success
Successfully initiated launch of instance (i-03b26f6ad58b291a6)

▸ Launch log

Connect to instance Info

Connect to your instance i-03b26f6ad58b291a6 (UBUNTU-ASSIGNMENT 03) using any of these options

EC2 Instance Connect | Session Manager | SSH client | EC2 serial console

Port 22 (SSH) is open to all IPv4 addresses
Port 22 (SSH) is currently open to all IPv4 addresses, indicated by **0.0.0.0/0** in the inbound rule in your security group. For increased security, consider restricting access to only the EC2 Instance Connect service IP addresses for your Region: 18.206.107.24/29. Learn more.

Instance ID
i-03b26f6ad58b291a6 (UBUNTU-ASSIGNMENT 03)

Connection Type

- (●) Connect using EC2 Instance Connect
  Connect using the EC2 Instance Connect browser-based client, with a public IPv4 address.
- ( ) Connect using EC2 Instance Connect Endpoint
  Connect using the EC2 Instance Connect browser-based client, with a private IPv4 address and a VPC endpoint.

Public IP address
54.197.65.174

Username
Enter the username defined in the AMI used to launch the instance. If you didn't define a custom username, use the default username, ubuntu.

ubuntu

```
 System information as of Wed Aug 28 16:31:04 UTC 2024

  System load:  0.26              Processes:             106
  Usage of /:   22.8% of 6.71GB   Users logged in:       0
  Memory usage: 21%               IPv4 address for enX0: 172.31.82.122
  Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

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


The list of available updates is more than a week old.
To check for new updates run: sudo apt update


The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-82-122:~$ sudo su
root@ip-172-31-82-122:/home/ubuntu#
```

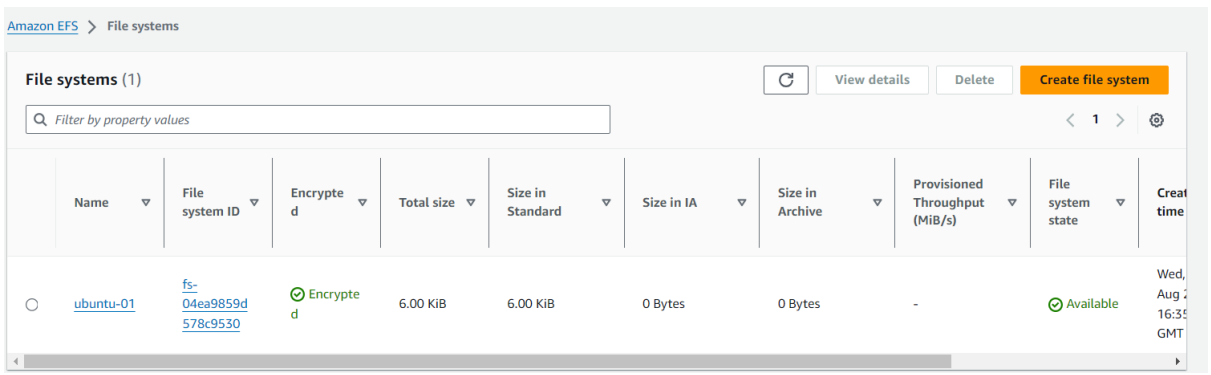
```
ubuntu@ip-172-31-82-122:~$ sudo su
root@ip-172-31-82-122:/home/ubuntu# sudo apt-get update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Packages [15.0 MB]
Get:6 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [323 kB]
Get:7 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [73.1 kB]
Get:8 http://security.ubuntu.com/ubuntu noble-security/main amd64 c-n-f Metadata [4220 B]
Get:9 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [252 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe Translation-en [5982 kB]
Get:11 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [109 kB]
Get:12 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [8632 B]
Get:13 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [9756 B]
Get:14 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Packages [280 kB]
Get:15 http://security.ubuntu.com/ubuntu noble-security/restricted Translation-en [54.8 kB]
Get:16 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Packages [10.6 kB]
Get:17 http://security.ubuntu.com/ubuntu noble-security/multiverse Translation-en [2808 B]
Get:18 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [208 B]
```

```
Get:37 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [212 B]
Get:38 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 c-n-f Metadata [532 B]
Get:39 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [208 B]
Get:40 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 c-n-f Metadata [112 B]
Get:41 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Packages [10.3 kB]
Get:42 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe Translation-en [10.5 kB]
Get:43 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [17.6 kB]
Get:44 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 c-n-f Metadata [1016 B]
Get:45 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [216 B]
Get:46 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 c-n-f Metadata [116 B]
Get:47 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]
Get:48 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 c-n-f Metadata [116 B]
Fetched 28.7 MB in 6s (4868 kB/s)
Reading package lists... Done
root@ip-172-31-82-122:/home/ubuntu#
```

```
E: Unable to locate package nfs-common
root@ip-172-31-82-122:/home/ubuntu# sudo apt-get -y install nfs-common
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  keyutils libnfsidmap1 rpcbind
Suggested packages:
  watchdog
The following NEW packages will be installed:
  keyutils libnfsidmap1 nfs-common rpcbind
0 upgraded, 4 newly installed, 0 to remove and 102 not upgraded.
Need to get 400 kB of archives.
After this operation, 1416 kB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libnfsidmap1 amd64 1:2.6.4-3ubuntu5 [48.2 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 rpcbind amd64 1.2.6-7ubuntu2 [46.5 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 keyutils amd64 1.6.3-3build1 [56.8 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 nfs-common amd64 1:2.6.4-3ubuntu5 [248 kB]
Fetched 400 kB in 0s (9780 kB/s)
Selecting previously unselected package libnfsidmap1:amd64.
(Reading database ... 67741 files and directories currently installed.)
Preparing to unpack .../libnfsidmap1_1%3a2.6.4-3ubuntu5_amd64.deb ...
Unpacking libnfsidmap1:amd64 (1:2.6.4-3ubuntu5) ...
Selecting previously unselected package rpcbind.
Preparing to unpack .../rpcbind_1.2.6-7ubuntu2_amd64.deb ...
Unpacking rpcbind (1.2.6-7ubuntu2) ...
Selecting previously unselected package keyutils.
Preparing to unpack .../keyutils_1.6.3-3build1_amd64.deb ...
```

```
Created symlink /etc/systemd/system/multi-user.target.wants/nfs-client.target → /usr/lib/systemd/system/nfs-client.target.
Created symlink /etc/systemd/system/remote-fs.target.wants/nfs-client.target → /usr/lib/systemd/system/nfs-client.target.
auth-rpcgss-module.service is a disabled or a static unit, not starting it.
nfs-idmapd.service is a disabled or a static unit, not starting it.
nfs-utils.service is a disabled or a static unit, not starting it.
proc-fs-nfsd.mount is a disabled or a static unit, not starting it.
rpc-gssd.service is a disabled or a static unit, not starting it.
rpc-statd-notify.service is a disabled or a static unit, not starting it.
rpc-statd.service is a disabled or a static unit, not starting it.
rpc-svcgssd.service is a disabled or a static unit, not starting it.
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for libc-bin (2.39-0ubuntu8.2) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
root@ip-172-31-82-122:/home/ubuntu#
```

```
No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
root@ip-172-31-82-122:/home/ubuntu# sudo mkdir efs
root@ip-172-31-82-122:/home/ubuntu#
```



ubuntu-01 (fs-04ea9859d578c9530)

Delete | Attach

General

Edit

Performance mode
General Purpose

Throughput mode
Elastic

Lifecycle management
Transition into Infrequent Access (IA): 30 day(s) since last access
Transition into Archive: 90 day(s) since last access
Transition into Standard: None

Availability zone
Regional

Automatic backups
Enabled

Encrypted
b9d453ab-184c-4bd5-ae21-57828c35765c (aws/elasticfilesystem)

File system state
Available

DNS name
fs-04ea9859d578c9530.efs.us-east-1.amazonaws.com

Replication overwrite protection
Enabled

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

Network

Manage

Availability zone (AZ-ID)	Mount target ID	Subnet ID	Mount target state	IP address	Network interface ID	Security groups
us-east-1a (use1-az6)	fsmt-00f16211bd2ae0633	subnet-06f06ddf53ded0c40	Creating	172.31.42.249	eni-084de28980c0b33c5	-
us-east-1b (use1-az1)	fsmt-09525ca1f0d1c04e0	subnet-01501dd93ff2c3a23	Creating	172.31.0.224	eni-0b4df64f5ac10f704	-
us-east-1c (use1-az2)	fsmt-03fec2167d955a6da	subnet-0deeaf32c49746b9d	Creating	172.31.89.145	eni-08d91ff01fa66874b	-
us-east-1d (use1-az4)	fsmt-0bc96f988a128e356	subnet-01bc68d289889876d	Creating	172.31.21.227	eni-0ae9d8558c06c446d	-
us-east-1f (use1-az5)	fsmt-0d387ec0a36c64d6b	subnet-094c3abb7a2e75bf1	Creating	172.31.75.171	eni-019911c4ca7fa8a19	-

Attach

Mount your Amazon EFS file system on a Linux instance. Learn more

Mount via DNS | Mount via IP

Availability zone
us-east-1a

Using the NFS client:

```
sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,retrans=2,noresvport 172.31.42.249:/ efs
```

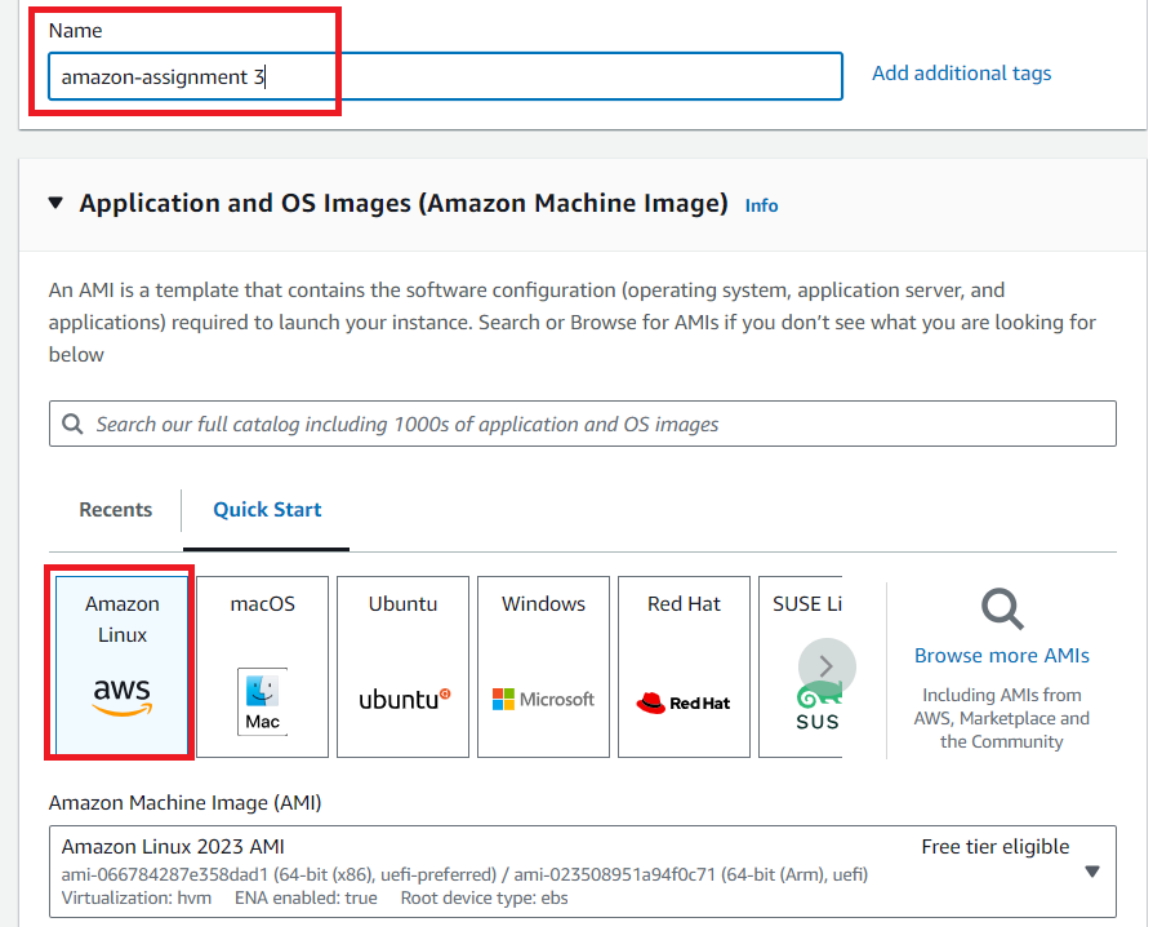
See our user guide for more information. Learn more

Close

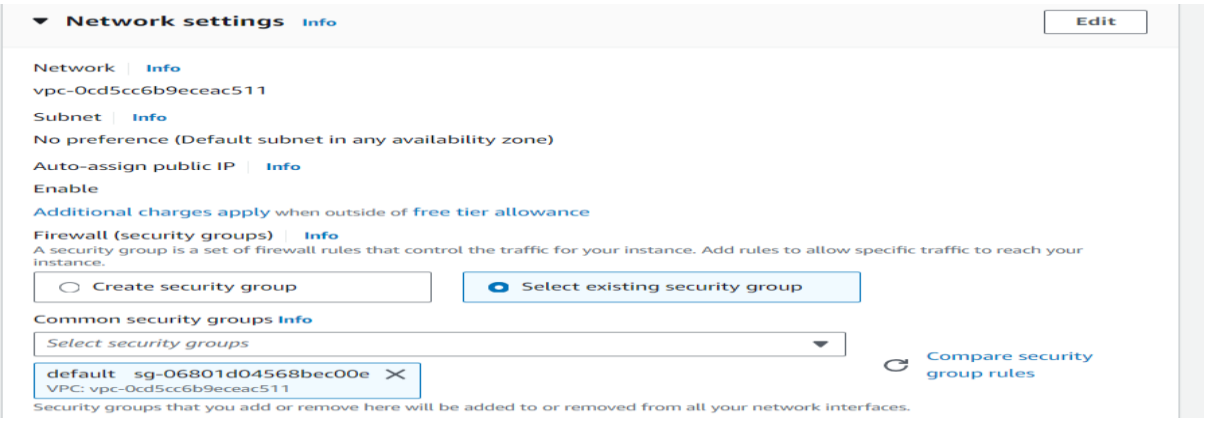
```
  System load:  0.04              Processes:             115
  Usage of /:   27.7% of 6.71GB   Users logged in:       1
  Memory usage: 23%               IPv4 address for enX0: 172.31.82.122
  Swap usage:   0%


Expanded Security Maintenance for Applications is not enabled.

9 updates can be applied immediately.
9 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


*** System restart required ***
Last login: Wed Aug 28 16:56:27 2024 from 18.206.107.27
ubuntu@ip-172-31-82-122:~$ sudo su
root@ip-172-31-82-122:/home/ubuntu# sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,retrans=2,noresvport 172.31.42.249:/ efs
root@ip-172-31-82-122:/home/ubuntu# df -h
Filesystem       Size  Used Avail Use% Mounted on
/dev/root        6.8G  1.9G  4.9G  28% /
tmpfs            479M     0  479M   0% /dev/shm
tmpfs            192M  896K  191M   1% /run
tmpfs            5.0M     0  5.0M   0% /run/lock
/dev/xvda16      881M   76M  744M  10% /boot
/dev/xvda15      105M  6.1M   99M   6% /boot/efi
tmpfs             96M   12K   96M   1% /run/user/1000
172.31.42.249:/  8.0E     0  8.0E   0% /home/ubuntu/efs
root@ip-172-31-82-122:/home/ubuntu#
```

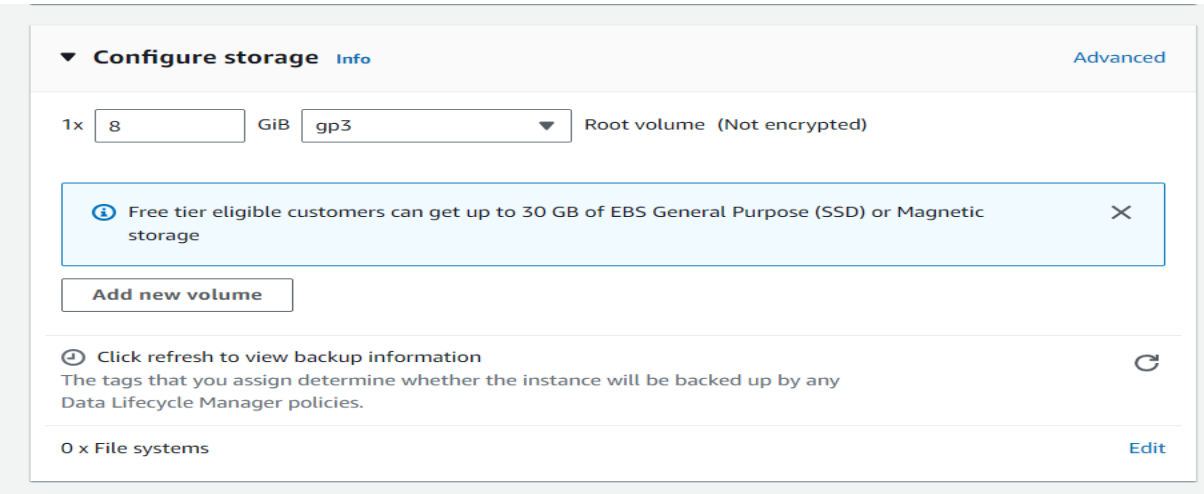
2.First we need to create the EC2 Instance Amazon Linux

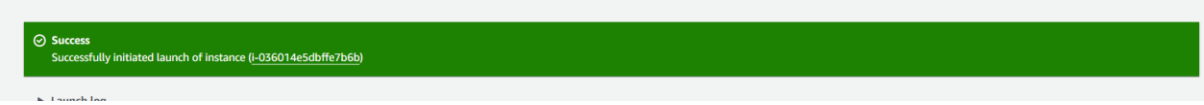
AMI SELECT-Amazon Linux



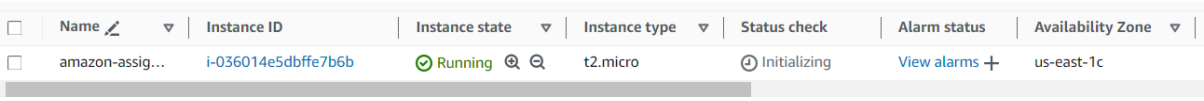
After created already used security group.

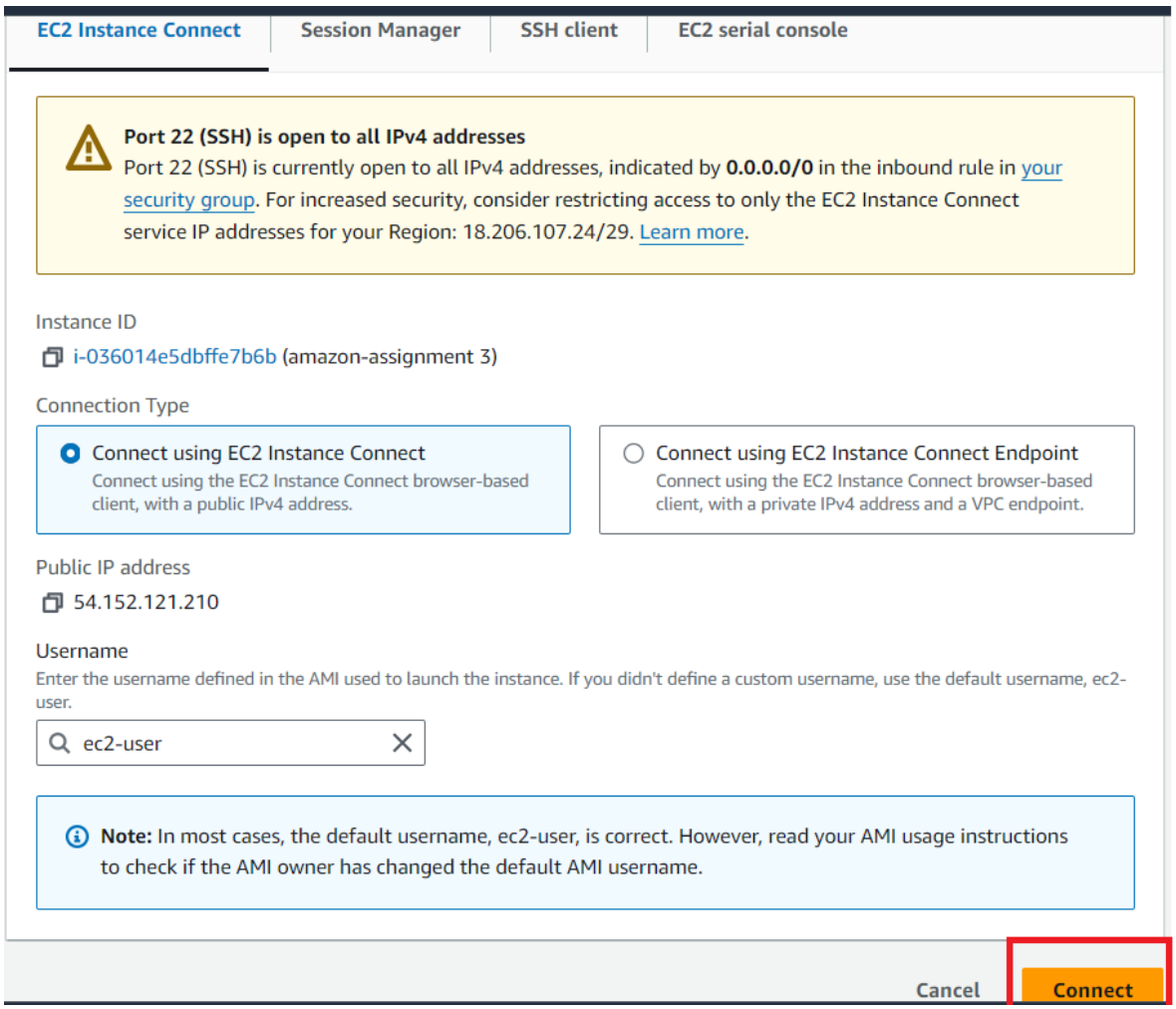






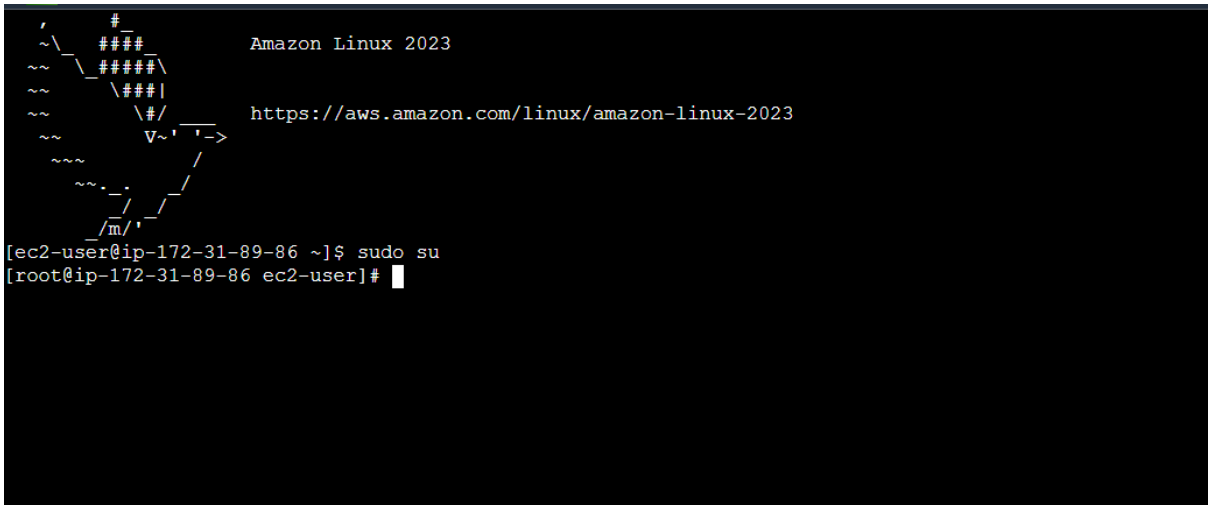
After launch the instance and connect the ssh to the ubuntu os with port no 22 for inbound rule and outbound has all all traffic for particular this instance.

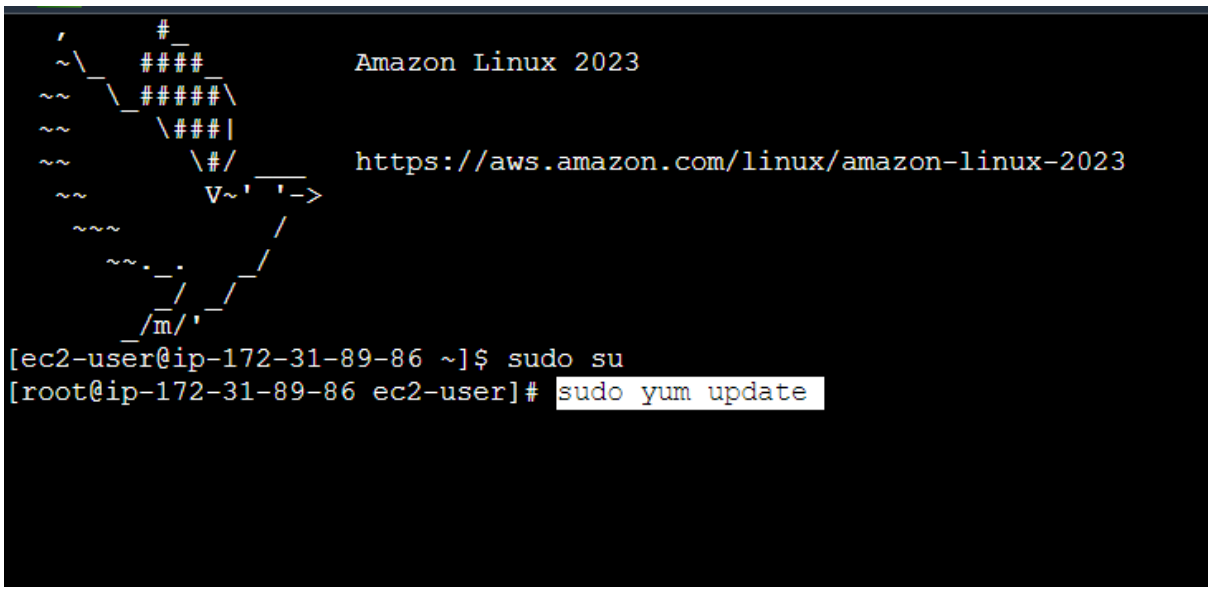




Now connect the instance through aws connect

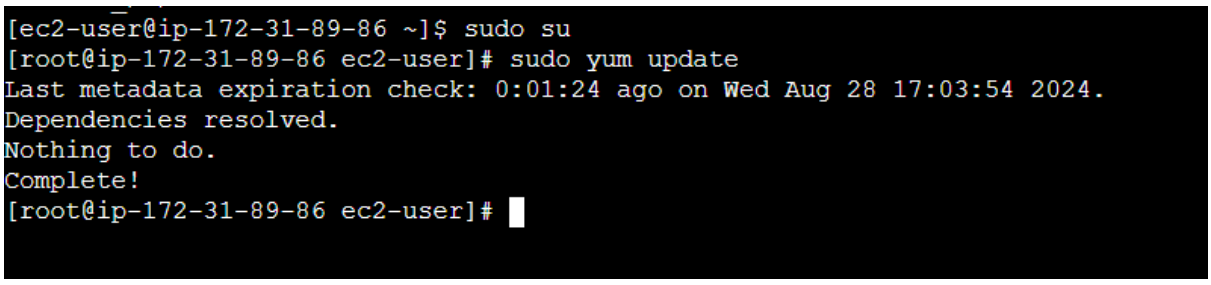
After instance connect used sudo su for root access





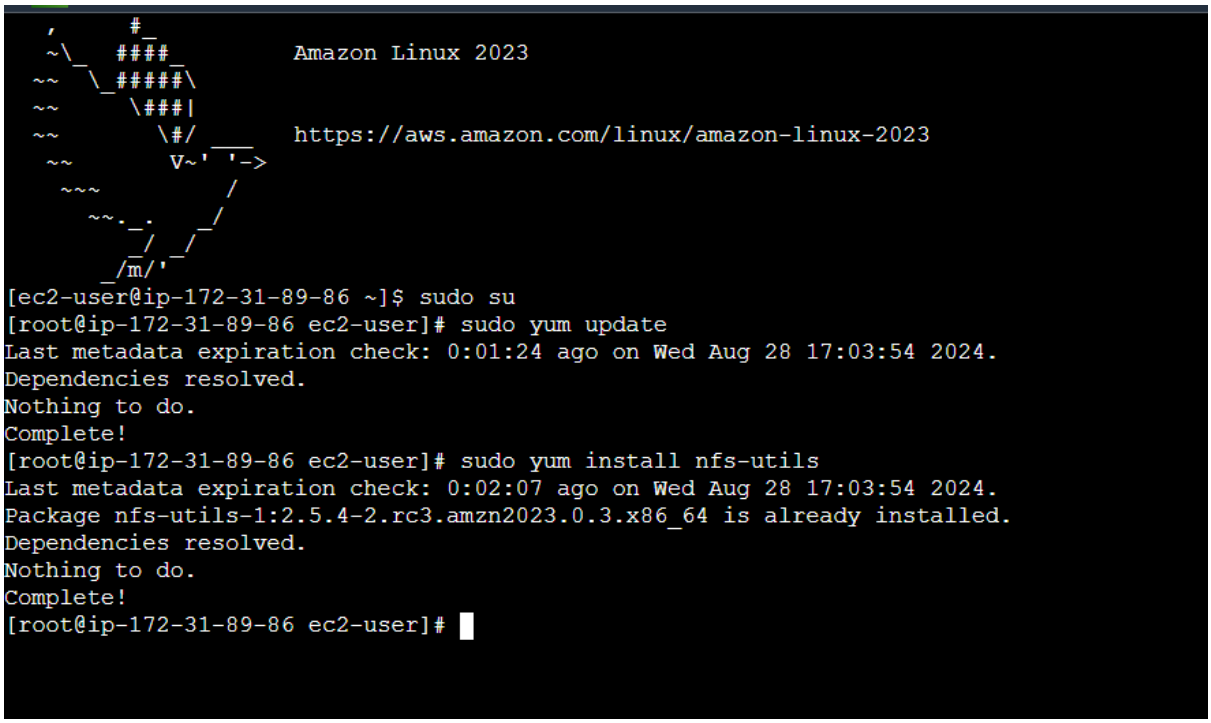
Then Updated the amazon instance

Sudo yum update



After done installed the nfs packages for connection to nfs

Sudo yum install nfs-utils



After done the nfs package created the nfs directory

Mkdir nfs

```
   ,     #_
   ~\_  ####_        Amazon Linux 2023
  ~~  \_#####\
  ~~     \###|
  ~~       \#/ ___   https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
      ~~._.   _/
         _/ _/
       _/m/'
[ec2-user@ip-172-31-89-86 ~]$ sudo su
[root@ip-172-31-89-86 ec2-user]# sudo yum update
Last metadata expiration check: 0:01:24 ago on Wed Aug 28 17:03:54 2024.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-89-86 ec2-user]# sudo yum install nfs-utils
Last metadata expiration check: 0:02:07 ago on Wed Aug 28 17:03:54 2024.
Package nfs-utils-1:2.5.4-2.rc3.amzn2023.0.3.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-89-86 ec2-user]# sudo mkdir efs
[root@ip-172-31-89-86 ec2-user]#
```

After mount the nfs via ip

```
   ,     #_
   ~\_  ####_        Amazon Linux 2023
  ~~  \_#####\
  ~~     \###|
  ~~       \#/ ___   https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
      ~~._.   _/
         _/ _/
       _/m/'
[ec2-user@ip-172-31-89-86 ~]$ sudo su
[root@ip-172-31-89-86 ec2-user]# sudo yum update
Last metadata expiration check: 0:01:24 ago on Wed Aug 28 17:03:54 2024.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-89-86 ec2-user]# sudo yum install nfs-utils
Last metadata expiration check: 0:02:07 ago on Wed Aug 28 17:03:54 2024.
Package nfs-utils-1:2.5.4-2.rc3.amzn2023.0.3.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-89-86 ec2-user]# sudo mkdir efs
[root@ip-172-31-89-86 ec2-user]# sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,retrans=2,noresvport 172.31.42.249:/ efs
[root@ip-172-31-89-86 ec2-user]#
```

After checked the nfs mount or not

Command used for nfs mount confirmation.

df -h

```
  ~~       \#/ ___   https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
      ~~._.   _/
         _/ _/
       _/m/'
[ec2-user@ip-172-31-89-86 ~]$ sudo su
[root@ip-172-31-89-86 ec2-user]# sudo yum update
Last metadata expiration check: 0:01:24 ago on Wed Aug 28 17:03:54 2024.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-89-86 ec2-user]# sudo yum install nfs-utils
Last metadata expiration check: 0:02:07 ago on Wed Aug 28 17:03:54 2024.
Package nfs-utils-1:2.5.4-2.rc3.amzn2023.0.3.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-89-86 ec2-user]# sudo mkdir efs
[root@ip-172-31-89-86 ec2-user]# sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,retrans=2,noresvport 172.31.42.249:/ efs
[root@ip-172-31-89-86 ec2-user]# df -h
Filesystem       Size  Used Avail Use% Mounted on
devtmpfs         4.0M     0  4.0M   0% /dev
tmpfs            475M     0  475M   0% /dev/shm
tmpfs            190M  440K  190M   1% /run
/dev/xvda1       8.0G  1.6G  6.5G  20% /
tmpfs            475M     0  475M   0% /tmp
/dev/xvda128      10M  1.3M  8.7M  13% /boot/efi
tmpfs             95M     0   95M   0% /run/user/1000
172.31.42.249:/  8.0E     0  8.0E   0% /home/ec2-user/efs
[root@ip-172-31-89-86 ec2-user]#
```

Name

redhat 03

Add additional tags

Application and OS Images (Amazon Machine Image) Info

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Search our full catalog including 1000s of application and OS images

Recents | Quick Start

Amazon Linux | macOS | Ubuntu | Windows | Red Hat | SUSE Li

Browse more AMIs

Including AMIs from AWS, Marketplace and the Community

Network Info

vpc-0cd5cc6b9eceac511

Subnet Info

No preference (Default subnet in any availability zone)

Auto-assign public IP Info

Enable

Additional charges apply when outside of free tier allowance

Firewall (security groups) Info

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

Create security group | Select existing security group

Common security groups Info

Select security groups

default sg-06801d04568bec00e

VPC: vpc-0cd5cc6b9eceac511

Compare security group rules

Security groups that you add or remove here will be added to or removed from all your network interfaces.

Configure storage Info

Advanced

1x 10 GiB gp3 Root volume (Not encrypted)

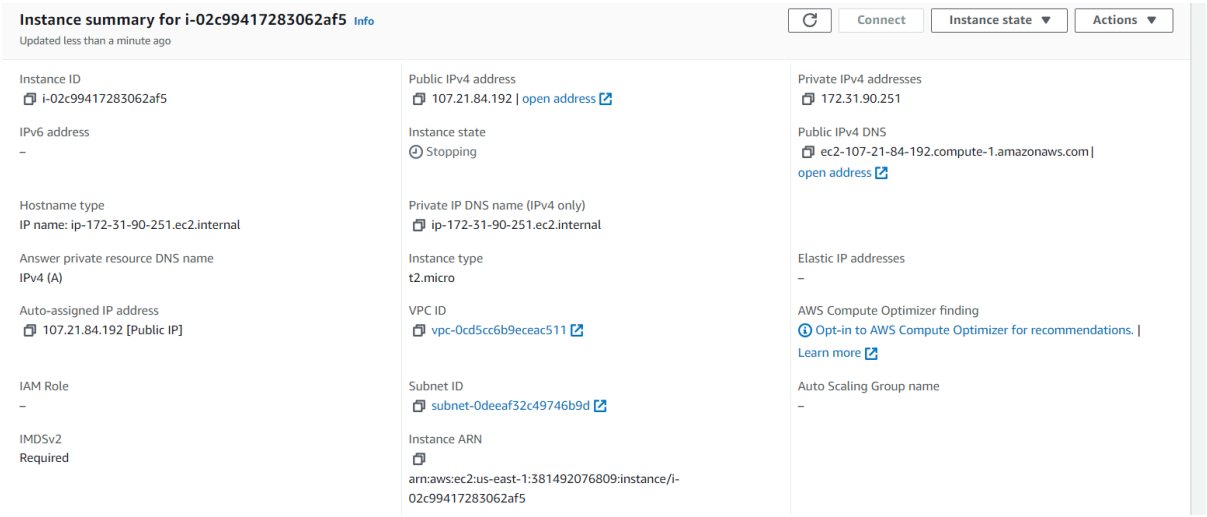
Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage

Add new volume

Click refresh to view backup information

The tags that you assign determine whether the instance will be backed up by any Data Lifecycle Manager policies.

0 x File systems Edit

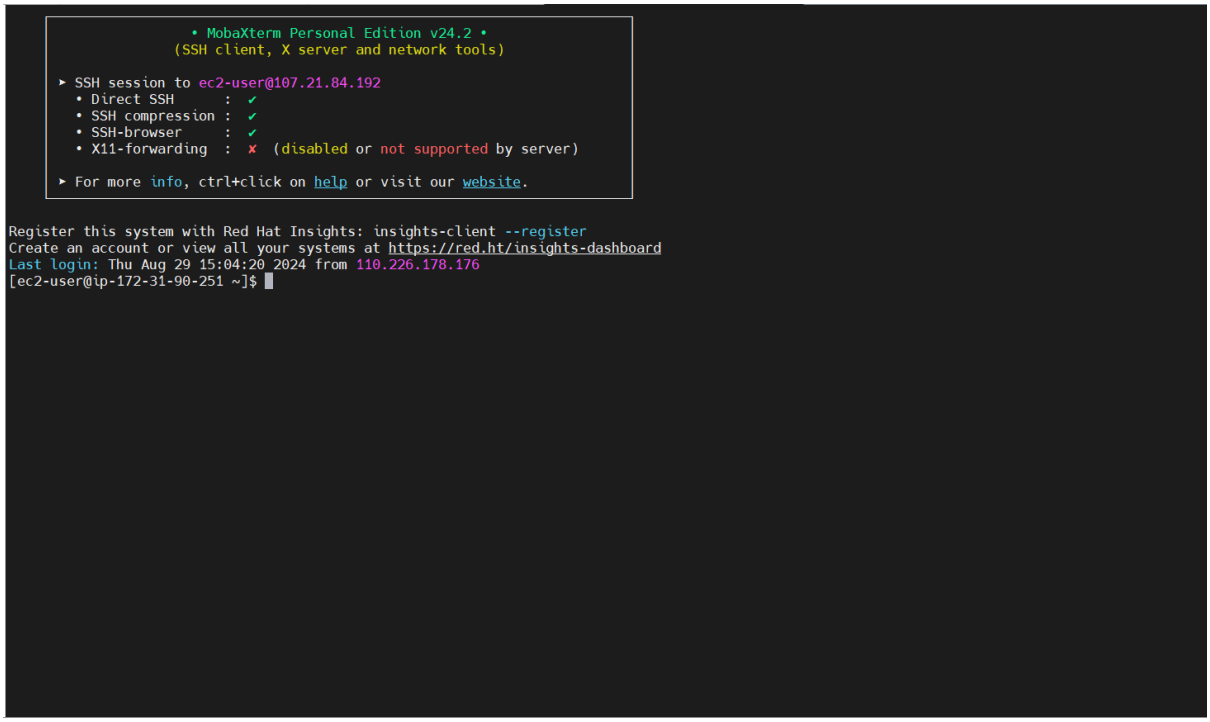


Instance summary for i-02c99417283062af5 Info

Updated less than a minute ago

Connect | Instance state | Actions

Instance ID i-02c99417283062af5	Public IPv4 address 107.21.84.192 | open address	Private IPv4 addresses 172.31.90.251
IPv6 address –	Instance state Stopping	Public IPv4 DNS ec2-107-21-84-192.compute-1.amazonaws.com | open address
Hostname type IP name: ip-172-31-90-251.ec2.internal	Private IP DNS name (IPv4 only) ip-172-31-90-251.ec2.internal	
Answer private resource DNS name IPv4 (A)	Instance type t2.micro	Elastic IP addresses –
Auto-assigned IP address 107.21.84.192 [Public IP]	VPC ID vpc-0cd5cc6b9eceac511	AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations. | Learn more
IAM Role –	Subnet ID subnet-0deeaf32c49746b9d	Auto Scaling Group name –
IMDSv2 Required	Instance ARN arn:aws:ec2:us-east-1:381492076809:instance/i-02c99417283062af5	


• MobaXterm Personal Edition v24.2 •
(SSH client, X server and network tools)
➤ SSH session to ec2-user@107.21.84.192
• Direct SSH : ✔
• SSH compression : ✔
• SSH-browser : ✔
• X11-forwarding : ✘ (disabled or not supported by server)
➤ For more info, ctrl+click on help or visit our website.
Register this system with Red Hat Insights: insights-client --register
Create an account or view all your systems at https://red.ht/insights-dashboard
Last login: Thu Aug 29 15:04:20 2024 from 110.226.178.176
[ec2-user@ip-172-31-90-251 ~]$


• MobaXterm Personal Edition v24.2 •
(SSH client, X server and network tools)
➤ SSH session to ec2-user@107.21.84.192
• Direct SSH : ✔
• SSH compression : ✔
• SSH-browser : ✔
• X11-forwarding : ✘ (disabled or not supported by server)
➤ For more info, ctrl+click on help or visit our website.
Register this system with Red Hat Insights: insights-client --register
Create an account or view all your systems at https://red.ht/insights-dashboard
Last login: Thu Aug 29 15:04:20 2024 from 110.226.178.176
[ec2-user@ip-172-31-90-251 ~]$ sudo su
[root@ip-172-31-90-251 ec2-user]# sudo yum update
Updating Subscription Management repositories.
Unable to read consumer identity
This system is not registered with an entitlement server. You can use "rhc" or "subscription-manager" to register.
Red Hat Enterprise Linux 9 for x86_64 - AppStream from RHUI (RPMs) 41 MB/s | 39 MB 00:00

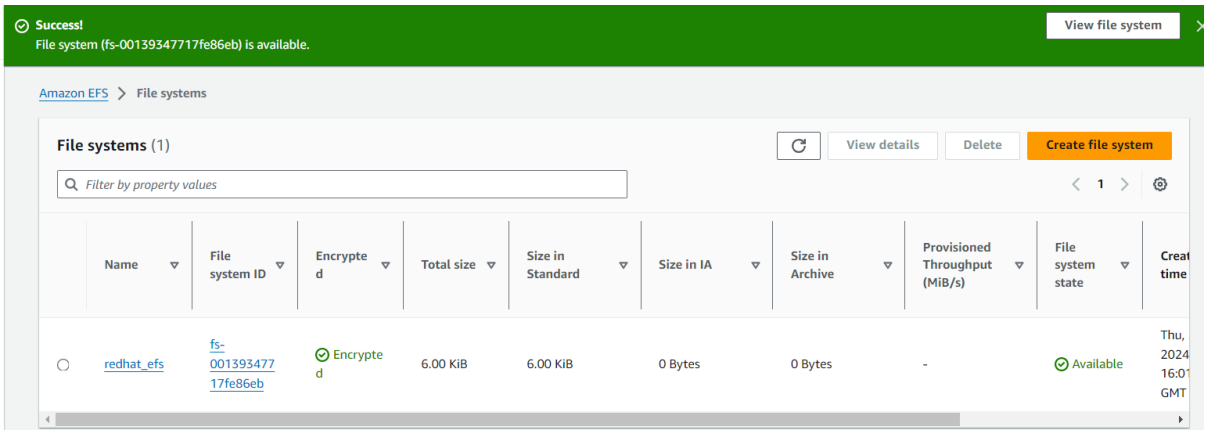
```
 glibc-gconv-extra                x86_64          2.34-100.el9_4.3                rhel-9-baseos-rhui-rpms                1
 glibc-langpack-en                x86_64          2.34-100.el9_4.3                rhel-9-baseos-rhui-rpms                6
 kernel-tools                     x86_64          5.14.0-427.33.1.el9_4           rhel-9-baseos-rhui-rpms                5
 kernel-tools-libs                x86_64          5.14.0-427.33.1.el9_4           rhel-9-baseos-rhui-rpms                5
 kexec-tools                      x86_64          2.0.27-8.el9_4.3                rhel-9-baseos-rhui-rpms                4
 libcurl                          x86_64          7.76.1-29.el9_4.1               rhel-9-baseos-rhui-rpms                2
 libndp                           x86_64          1.8-6.el9_4                     rhel-9-baseos-rhui-rpms
 libsss_certmap                   x86_64          2.9.4-6.el9_4.1                 rhel-9-baseos-rhui-rpms
 libsss_idmap                     x86_64          2.9.4-6.el9_4.1                 rhel-9-baseos-rhui-rpms
 libsss_nss_idmap                 x86_64          2.9.4-6.el9_4.1                 rhel-9-baseos-rhui-rpms
 libsss_sudo                      x86_64          2.9.4-6.el9_4.1                 rhel-9-baseos-rhui-rpms
 linux-firmware                   noarch          20240603-143.1.el9_4            rhel-9-baseos-rhui-rpms                3
 linux-firmware-whence            noarch          20240603-143.1.el9_4            rhel-9-baseos-rhui-rpms
 openssh                          x86_64          8.7p1-38.el9_4.4                rhel-9-baseos-rhui-rpms                4
 openssh-clients                  x86_64          8.7p1-38.el9_4.4                rhel-9-baseos-rhui-rpms                7
 openssh-server                   x86_64          8.7p1-38.el9_4.4                rhel-9-baseos-rhui-rpms                4
 python-unversioned-command       noarch          3.9.18-3.el9_4.3                rhel-9-appstream-rhui-rpms
 python3                          x86_64          3.9.18-3.el9_4.3                rhel-9-baseos-rhui-rpms
 python3-libs                     x86_64          3.9.18-3.el9_4.3                rhel-9-baseos-rhui-rpms                7
 python3-perf                     x86_64          5.14.0-427.33.1.el9_4           rhel-9-baseos-rhui-rpms                5
 python3-setuptools               noarch          53.0.0-12.el9_4.1               rhel-9-baseos-rhui-rpms                9
 python3-setuptools-wheel         noarch          53.0.0-12.el9_4.1               rhel-9-baseos-rhui-rpms                4
 rh-amazon-rhui-client            noarch          4.0.19-1.el9                    rhui-client-config-server-9
 selinux-policy                   noarch          38.1.35-2.el9_4.2               rhel-9-baseos-rhui-rpms
 selinux-policy-targeted          noarch          38.1.35-2.el9_4.2               rhel-9-baseos-rhui-rpms                6
 shim-x64                         x86_64          15.8-4.el9_3                    rhel-9-baseos-rhui-rpms                4
 sssd-client                      x86_64          2.9.4-6.el9_4.1                 rhel-9-baseos-rhui-rpms                1
 sssd-common                      x86_64          2.9.4-6.el9_4.1                 rhel-9-baseos-rhui-rpms                1
 sssd-kcm                         x86_64          2.9.4-6.el9_4.1                 rhel-9-baseos-rhui-rpms                1
 systemd                          x86_64          252-32.el9_4.6                  rhel-9-baseos-rhui-rpms                4
 systemd-libs                     x86_64          252-32.el9_4.6                  rhel-9-baseos-rhui-rpms                6
 systemd-pam                      x86_64          252-32.el9_4.6                  rhel-9-baseos-rhui-rpms                2
 systemd-rpm-macros               noarch          252-32.el9_4.6                  rhel-9-baseos-rhui-rpms
 systemd-udev                     x86_64          252-32.el9_4.6                  rhel-9-baseos-rhui-rpms                1

Transaction Summary
================================================================================================================================================
Install   4 Packages
Upgrade  44 Packages

Total download size: 532 M
Is this ok [y/N]: y
```

```
Upgraded:
  NetworkManager-1:1.46.0-13.el9_4.x86_64          NetworkManager-cloud-setup-1:1.46.0-13.el9_4.x86_64  NetworkManager-libnm-1:1.46.0-13.el9_4.x86_64
  NetworkManager-team-1:1.46.0-13.el9_4.x86_64     NetworkManager-tui-1:1.46.0-13.el9_4.x86_64          ca-certificates-2024.2.69_v8.0.303-91.4.el9_4.noarch
  cloud-init-23.4-7.el9_4.5.noarch                 curl-7.76.1-29.el9_4.1.x86_64                        glibc-2.34-100.el9_4.3.x86_64
  glibc-common-2.34-100.el9_4.3.x86_64             glibc-gconv-extra-2.34-100.el9_4.3.x86_64            glibc-langpack-en-2.34-100.el9_4.3.x86_64
  kernel-tools-5.14.0-427.33.1.el9_4.x86_64        kernel-tools-libs-5.14.0-427.33.1.el9_4.x86_64       kexec-tools-2.0.27-8.el9_4.3.x86_64
  libcurl-7.76.1-29.el9_4.1.x86_64                 libndp-1.8-6.el9_4.x86_64                            libsss_certmap-2.9.4-6.el9_4.1.x86_64
  libsss_idmap-2.9.4-6.el9_4.1.x86_64              libsss_nss_idmap-2.9.4-6.el9_4.1.x86_64              libsss_sudo-2.9.4-6.el9_4.1.x86_64
  linux-firmware-20240603-143.1.el9_4.noarch       linux-firmware-whence-20240603-143.1.el9_4.noarch    openssh-8.7p1-38.el9_4.4.x86_64
  openssh-clients-8.7p1-38.el9_4.4.x86_64          openssh-server-8.7p1-38.el9_4.4.x86_64               python-unversioned-command-3.9.18-3.el9_4.3.noarch
  python3-3.9.18-3.el9_4.3.x86_64                  python3-libs-3.9.18-3.el9_4.3.x86_64                 python3-perf-5.14.0-427.33.1.el9_4.x86_64
  python3-setuptools-53.0.0-12.el9_4.1.noarch      python3-setuptools-wheel-53.0.0-12.el9_4.1.noarch    rh-amazon-rhui-client-4.0.19-1.el9.noarch
  selinux-policy-38.1.35-2.el9_4.2.noarch          selinux-policy-targeted-38.1.35-2.el9_4.2.noarch     shim-x64-15.8-4.el9_3.x86_64
  sssd-client-2.9.4-6.el9_4.1.x86_64               sssd-common-2.9.4-6.el9_4.1.x86_64                   sssd-kcm-2.9.4-6.el9_4.1.x86_64
  systemd-252-32.el9_4.6.x86_64                    systemd-libs-252-32.el9_4.6.x86_64                   systemd-pam-252-32.el9_4.6.x86_64
  systemd-rpm-macros-252-32.el9_4.6.noarch         systemd-udev-252-32.el9_4.6.x86_64
Installed:
  kernel-5.14.0-427.33.1.el9_4.x86_64                 kernel-core-5.14.0-427.33.1.el9_4.x86_64        kernel-modules-5.14.0-427.33.1.el9_4.x86_64
  kernel-modules-core-5.14.0-427.33.1.el9_4.x86_64

Complete!
[root@ip-172-31-90-251 ec2-user]#
```

```
[root@ip-172-31-90-251 ec2-user]# sudo yum install nfs-utils
Updating Subscription Management repositories.
Unable to read consumer identity

This system is not registered with an entitlement server. You can use "rhc" or "subscription-manager" to register.

Red Hat Enterprise Linux 9 for x86_64 - AppStream from RHUI (RPMs)                74 kB/s | 4.5 kB     00:00
Red Hat Enterprise Linux 9 for x86_64 - BaseOS from RHUI (RPMs)                   72 kB/s | 4.1 kB     00:00
Red Hat Enterprise Linux 9 Client Configuration                                   27 kB/s | 1.5 kB     00:00
Dependencies resolved.
================================================================================================================================================
 Package                          Architecture              Version                          Repository                                  Size
================================================================================================================================================
Installing:
 nfs-utils                        x86_64                    1:2.5.4-25.el9                   rhel-9-baseos-rhui-rpms                    463 k
Installing dependencies:
 gssproxy                         x86_64                    0.8.4-6.el9                      rhel-9-baseos-rhui-rpms                    114 k
 keyutils                         x86_64                    1.6.3-1.el9                      rhel-9-baseos-rhui-rpms                     78 k
 libev                            x86_64                    4.33-5.el9                       rhel-9-baseos-rhui-rpms                     56 k
 libnfsidmap                      x86_64                    1:2.5.4-25.el9                   rhel-9-baseos-rhui-rpms                     66 k
 libtirpc                         x86_64                    1.3.3-8.el9_4                    rhel-9-baseos-rhui-rpms                     96 k
 libverto-libev                   x86_64                    0.3.2-3.el9                      rhel-9-baseos-rhui-rpms                     15 k
 quota                            x86_64                    1:4.06-6.el9                     rhel-9-baseos-rhui-rpms                    202 k
 quota-nls                        noarch                    1:4.06-6.el9                     rhel-9-baseos-rhui-rpms                     81 k
 rpcbind                          x86_64                    1.2.6-7.el9                      rhel-9-baseos-rhui-rpms                     62 k
 sssd-nfs-idmap                   x86_64                    2.9.4-6.el9_4.1                  rhel-9-baseos-rhui-rpms                     44 k

Transaction Summary
================================================================================================================================================
Install  11 Packages

Total download size: 1.2 M
Installed size: 3.2 M
Is this ok [y/N]:
```

```
  Running scriptlet: nfs-utils-1:2.5.4-25.el9.x86_64                                                    10/11
  Installing       : nfs-utils-1:2.5.4-25.el9.x86_64                                                    10/11
  Running scriptlet: nfs-utils-1:2.5.4-25.el9.x86_64                                                    10/11
  Installing       : sssd-nfs-idmap-2.9.4-6.el9_4.1.x86_64                                              11/11
  Running scriptlet: sssd-nfs-idmap-2.9.4-6.el9_4.1.x86_64                                              11/11
  Verifying        : libev-4.33-5.el9.x86_64                                                             1/11
  Verifying        : libverto-libev-0.3.2-3.el9.x86_64                                                   2/11
  Verifying        : quota-1:4.06-6.el9.x86_64                                                           3/11
  Verifying        : quota-nls-1:4.06-6.el9.noarch                                                       4/11
  Verifying        : keyutils-1.6.3-1.el9.x86_64                                                         5/11
  Verifying        : gssproxy-0.8.4-6.el9.x86_64                                                         6/11
  Verifying        : libnfsidmap-1:2.5.4-25.el9.x86_64                                                   7/11
  Verifying        : libtirpc-1.3.3-8.el9_4.x86_64                                                       8/11
  Verifying        : nfs-utils-1:2.5.4-25.el9.x86_64                                                     9/11
  Verifying        : rpcbind-1.2.6-7.el9.x86_64                                                         10/11
  Verifying        : sssd-nfs-idmap-2.9.4-6.el9_4.1.x86_64                                              11/11
Installed products updated.

Installed:
  gssproxy-0.8.4-6.el9.x86_64       keyutils-1.6.3-1.el9.x86_64       libev-4.33-5.el9.x86_64          libnfsidmap-1:2.5.4-25.el9.x86_64
  libtirpc-1.3.3-8.el9_4.x86_64     libverto-libev-0.3.2-3.el9.x86_64 nfs-utils-1:2.5.4-25.el9.x86_64  quota-1:4.06-6.el9.x86_64
  quota-nls-1:4.06-6.el9.noarch     rpcbind-1.2.6-7.el9.x86_64        sssd-nfs-idmap-2.9.4-6.el9_4.1.x86_64

Complete!
[root@ip-172-31-90-251 ec2-user]#
```

```
  Verifying        : sssd-nfs-idmap-2.9.4-6.el9_4.1.x86_64                                               1
Installed products updated.

Installed:
  gssproxy-0.8.4-6.el9.x86_64       keyutils-1.6.3-1.el9.x86_64       libev-4.33-5.el9.x86_64          libnfsidmap-1:2.5.4-25.el9.x86_64
  libtirpc-1.3.3-8.el9_4.x86_64     libverto-libev-0.3.2-3.el9.x86_64 nfs-utils-1:2.5.4-25.el9.x86_64  quota-1:4.06-6.el9.x86_64
  quota-nls-1:4.06-6.el9.noarch     rpcbind-1.2.6-7.el9.x86_64        sssd-nfs-idmap-2.9.4-6.el9_4.1.x86_64

Complete!
[root@ip-172-31-90-251 ec2-user]# sudo mkdir efs
[root@ip-172-31-90-251 ec2-user]#
```



redhat_efs (fs-00139347717fe86eb)

Delete | Attach

General

Edit

Performance mode
General Purpose

Throughput mode
Elastic

Lifecycle management
Transition into Infrequent Access (IA): 30 day(s) since last access
Transition into Archive: 90 day(s) since last access
Transition into Standard: None

Availability zone
Regional

Automatic backups
Enabled

Encrypted
b9d453ab-184c-4bd5-ae21-57828c35765c (aws/elasticfilesystem)

File system state
Available

DNS name
fs-00139347717fe86eb.efs.us-east-1.amazonaws.com

Replication overwrite protection
Enabled

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

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

Network

Manage

Availability zone (AZ-ID)	Mount target ID	Subnet ID	Mount target state	IP address	Network interface ID	Security groups
us-east-1a (use1-az6)	fsmt-01ab3eb292c2cd99f	subnet-06f06ddf53ded0c40	Available	172.31.44.6	eni-05cd2fc89873c31b4	sg-06801d04568bec00e (default)
us-east-1b (use1-az1)	fsmt-05f87539da496f489	subnet-01501dd93ff2c3a23	Available	172.31.1.24	eni-0e79ec978779c732a	sg-06801d04568bec00e (default)
us-east-1c (use1-az2)	fsmt-0f9337ad4342f0f07	subnet-0deeaf32c49746b9d	Available	172.31.82.176	eni-014d5d4a4f133cb7e	sg-06801d04568bec00e (default)
us-east-1d (use1-az4)	fsmt-0766b8041fce5e09d	subnet-01bc68d289889876d	Available	172.31.30.17	eni-0ebcee774c1b1f158	sg-06801d04568bec00e (default)
us-east-1f (use1-az5)	fsmt-0f0dbc3a35267636f	subnet-094c3abb7a2e75bf1	Available	172.31.69.75	eni-0701794d74e65d2ed	sg-06801d04568bec00e (default)

Amazon EFS > File systems > fs-00139347717fe86eb

redhat_efs (fs-00139347717fe86eb)

Delete | Attach

General

Edit

Performance mode
General Purpose

Throughput mode
Elastic

Lifecycle management
Transition into Infrequent Access (IA): 30 day(s) since last access
Transition into Archive: 90 day(s) since last access
Transition into Standard: None

Availability zone
Regional

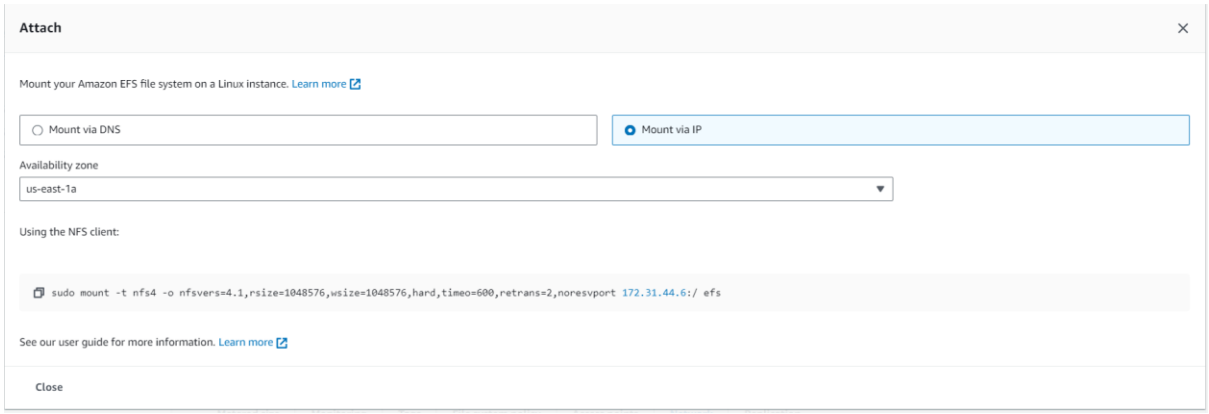
Automatic backups
Enabled

Encrypted
b9d453ab-184c-4bd5-ae21-57828c35765c (aws/elasticfilesystem)

File system state
Available

DNS name
fs-00139347717fe86eb.efs.us-east-1.amazonaws.com

Replication overwrite protection
Enabled




```
Complete!
[root@ip-172-31-90-251 ec2-user]# sudo mkdir efs
[root@ip-172-31-90-251 ec2-user]# sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,retrans=2,noresvport 172.31.44.6:/ efs
[root@ip-172-31-90-251 ec2-user]#
```

```
Complete!
[root@ip-172-31-90-251 ec2-user]# sudo mkdir efs
[root@ip-172-31-90-251 ec2-user]# sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,retrans=2,noresvport 172.31.44.6:/ efs
[root@ip-172-31-90-251 ec2-user]# df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        4.0M     0  4.0M   0% /dev
tmpfs           383M     0  383M   0% /dev/shm
tmpfs           154M  6.5M  147M   5% /run
/dev/xvda4      8.8G  1.7G  7.1G  20% /
/dev/xvda3      960M  262M  699M  28% /boot
/dev/xvda2      200M  7.1M  193M   4% /boot/efi
tmpfs            77M     0   77M   0% /run/user/1000
172.31.44.6:/   8.0E     0  8.0E   0% /home/ec2-user/efs
[root@ip-172-31-90-251 ec2-user]#
```