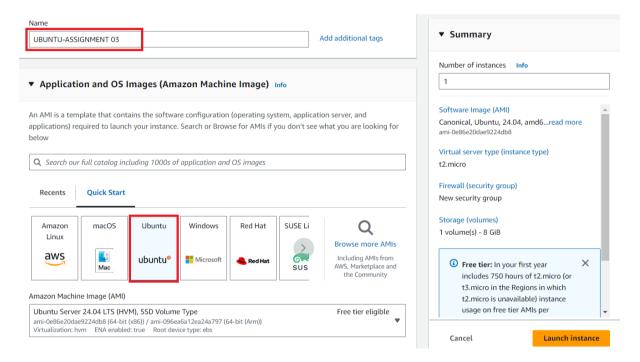


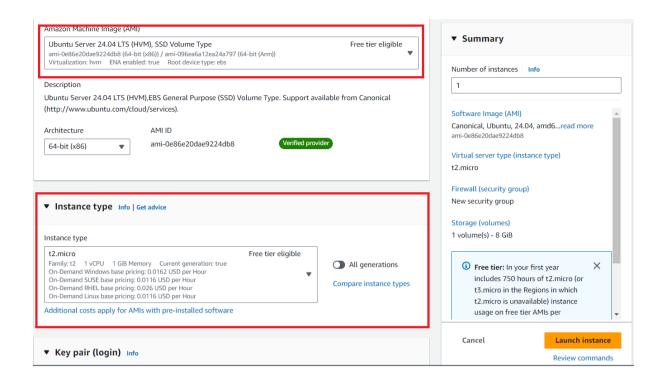
Tasks To Be Performed:

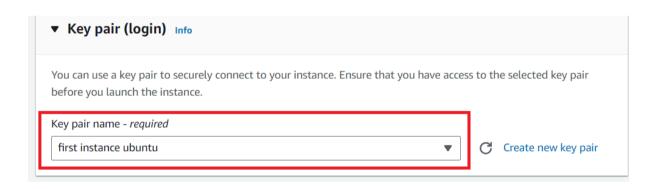
Create an EFS and connect it to 3 different EC2 instances. Make sure that all instances have different operating systems. For instance, Ubuntu, Red Hat Linux and Amazon Linux 2.

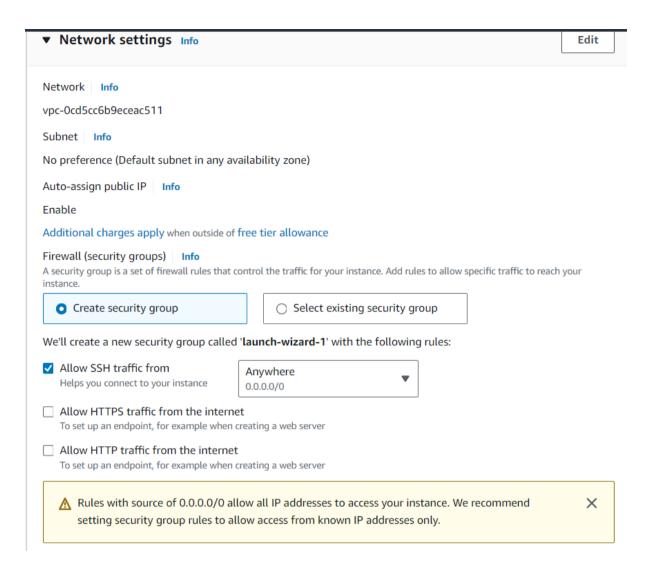
1. First we need to create the EC2 Instance Ubuntu

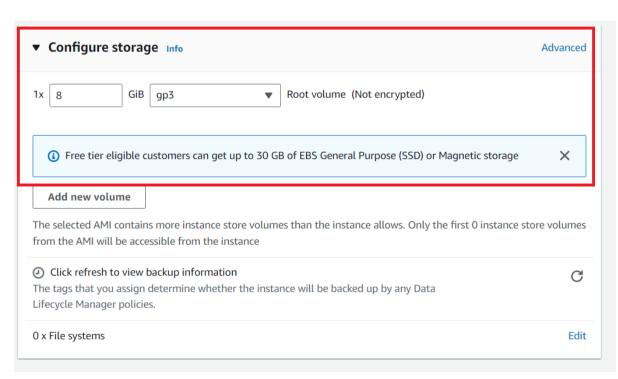
AMI SELECT-UBUNTU

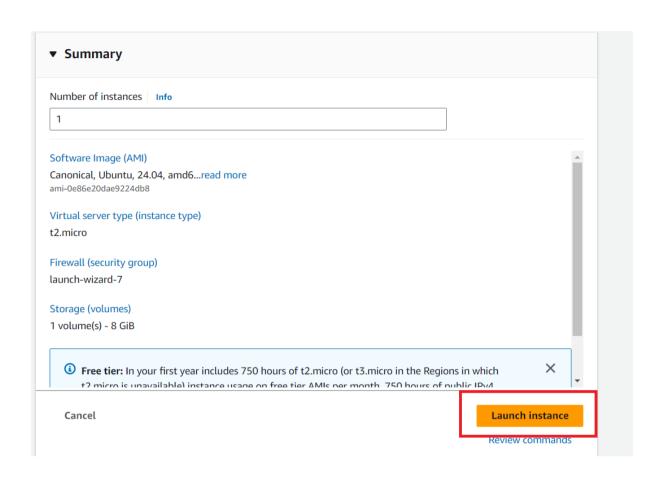


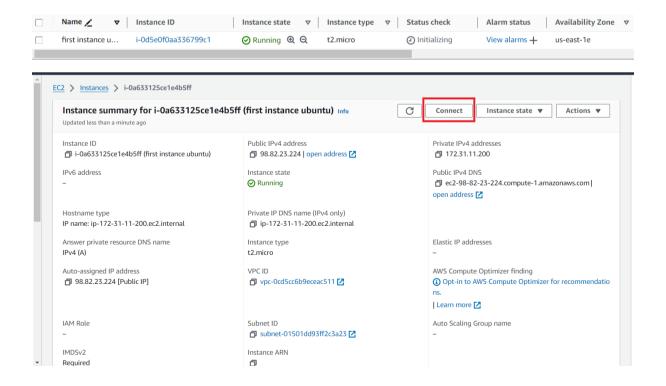














Port 22 (SSH) is open to all IPv4 addresses, indicated by 0.0.0.0/0 in the inbound rule in your Port 22 (SSH) is currently open to all IPv4 addresses, indicated by 0.0.0.0/0 in the inbound rule in your security group. For increased security, consider restricting access to only the EC2 Instance Connect

service IP addresses for your Region: 18.206.107.24/29. Learn more.

i-Od5e0f0aa336799c1 (first instance ubuntu)

Connect using EC2 Instance Connect

Connect using the EC2 Instance Connect browser-based client, with a public IPv4 address.

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

18.204.8.71

Username

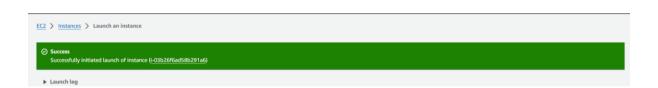
Enter the username defined in the AMI used to launch the instance. If you didn't define a custom username, use the default username, ubuntu.



(3) 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



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 <u>your security group</u>. 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.



System information as of Wed Aug 28 16:31:04 UTC 2024 106 System load: 0.26 Processes: Usage of /: 22.8% of 6.71GB Users logged in: Memory usage: 21% IPv4 address for enx0: 172.31.82.122 Swap usage: Expanded Security Maintenance for Applications is not enabled. 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]
```

```
Set:37 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [212 B]
Set:38 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 c-n-f Metadata [532 B]
Set:40 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [208 B]
Set:41 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 c-n-f Metadata [112 B]
Set:41 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Packages [10.3 kB]
Set:42 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe Translation-en [10.5 kB]
Set:43 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [17.6 kB]
Set:44 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 c-n-f Metadata [1016 B]
Set:45 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 c-n-f Metadata [116 B]
Set:47 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]
Set:48 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 c-n-f Metadata [116 B]
```

```
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 libnfsidmapl rpcbind
Suggested packages:
    watchdog
The following NEW packages will be installed:
    keyutils libnfsidmapl nfs-common rpcbind
O 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-l.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libnfsidmapl amd64 1:2.6.4-3ubuntu5 [48.2 kB]
Get:2 http://us-east-l.ec2.archive.ubuntu.com/ubuntu noble/main amd64 rpcbind amd64 1.2.6-7ubuntu2 [46.5 kB]
Get:4 http://us-east-l.ec2.archive.ubuntu.com/ubuntu noble/main amd64 keyutils amd64 1.6.3-3build1 [56.8 kB]
Get:4 http://us-east-l.ec2.archive.ubuntu.com/ubuntu noble/main amd64 hfs-common amd64 1:2.6.4-3ubuntu5 [248 kB]
Fetched 400 kB in 0s (9780 kB/s)
Selecting previously unselected package libnfsidmapl:amd64.
(Reading database ... 67741 files and directories currently installed.)
Preparing to unpack .../libnfsidmapl:amd64 (1:2.6.4-3ubuntu5) ...
Selecting previously unselected package rpcbind.
Preparing to unpack .../rpcbind_1.2.6-7ubuntu2_amd64.deb ...
Unpacking previously unselected package keyutils.
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 ...
Unpacking rpcbind (1.2.6-7ubuntu2) ...
Selecting previously unselected package keyutils.
```

```
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.
proc-fs-nfsd.mount is a disabled or a static unit, not starting it.
proc-gssd.service is a disabled or a static unit, not starting it.
proc-stad-notify.service is a disabled or a static unit, not starting it.
pro-svcgssd.service is a disabled or a static unit, not starting it.
pro-svcgssd.service is a disabled or a static unit, not starting it.
pro-svcgssd.service is a disabled or a static unit, not starting it.
Processing triggers for man-db (2.12.0-dbuild2) ...
Processing triggers for libc-bin (2.39-Oubuntu8.2) ...
Scanning processes...

Scanning linux images...

Running kernel seems to be up-to-date.

No services 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.

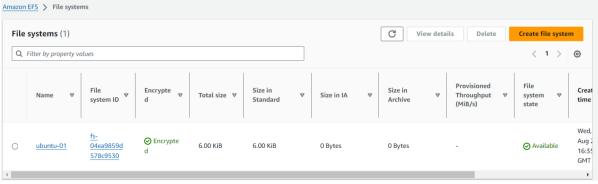
No user sessions are running outdated binaries.

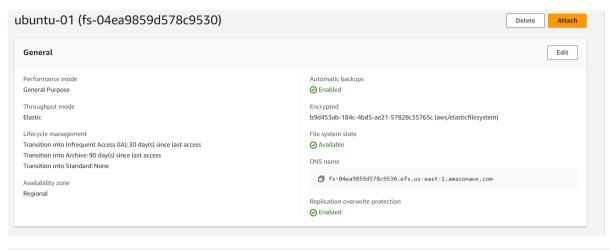
No VM guests are running outdated hypervisor (qemu) binaries on this host.

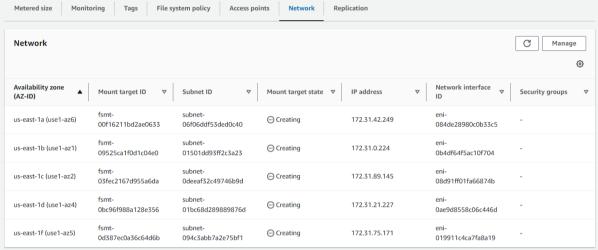
root@ip-172-31-82-122:/home/ubuntu# sudo mkdir efs

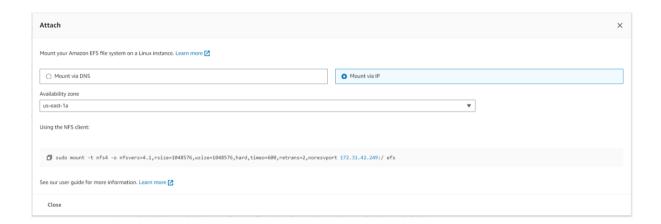
root@ip-172-31-82-122:/home/ubuntu#



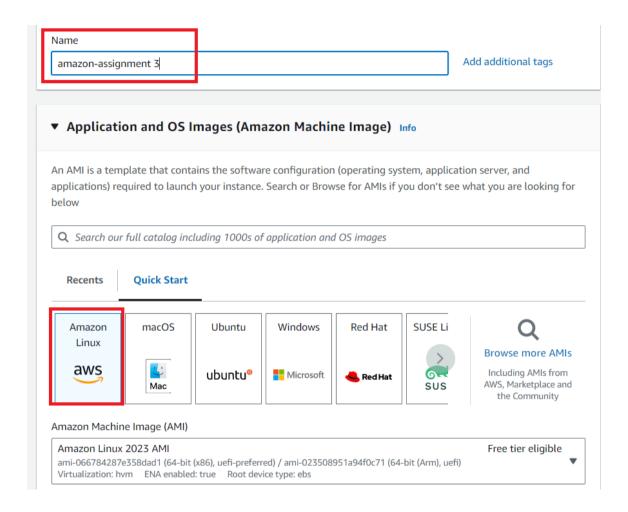




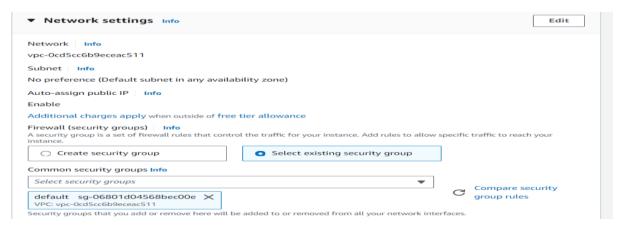


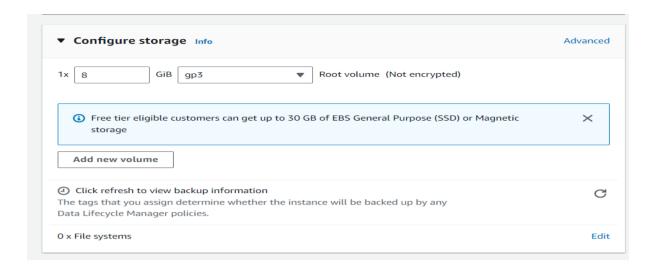


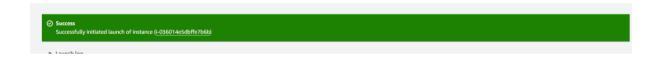
2.First we need to create the EC2 Instance Amazon Linux AMI SELECT-Amazon Linux



After created already used security group.

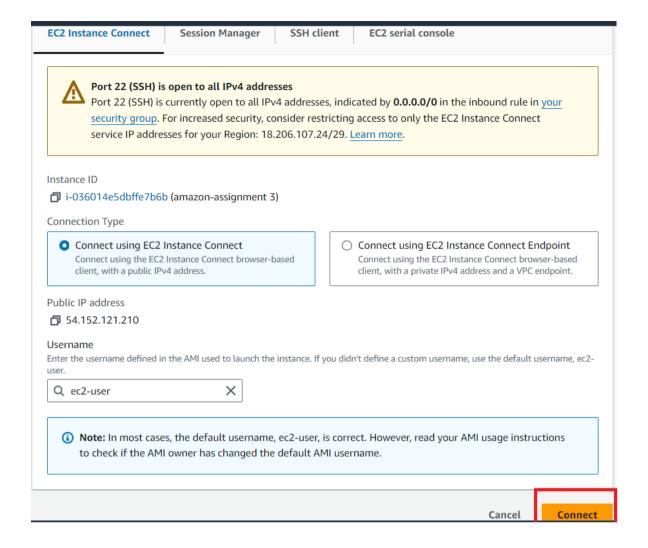






After launch the instance and connect the ssh to the ubuntu os with port no 22 for inbound rule and outbound has all all traffic for particular this instance.





Now connect the instance through aws connect

After instance connect used sudo su for root access

Then Updated the amazon instance

Sudo yum update

```
[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]#
```

After done installed the nfs packages for connection to nfs

Sudo yum install nfs-utils

```
Amazon Linux 2023
                     https://aws.amazon.com/linux/amazon-linux-2023
        /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]#
```

After done the nfs package created the nfs directory

Mkdir nfs

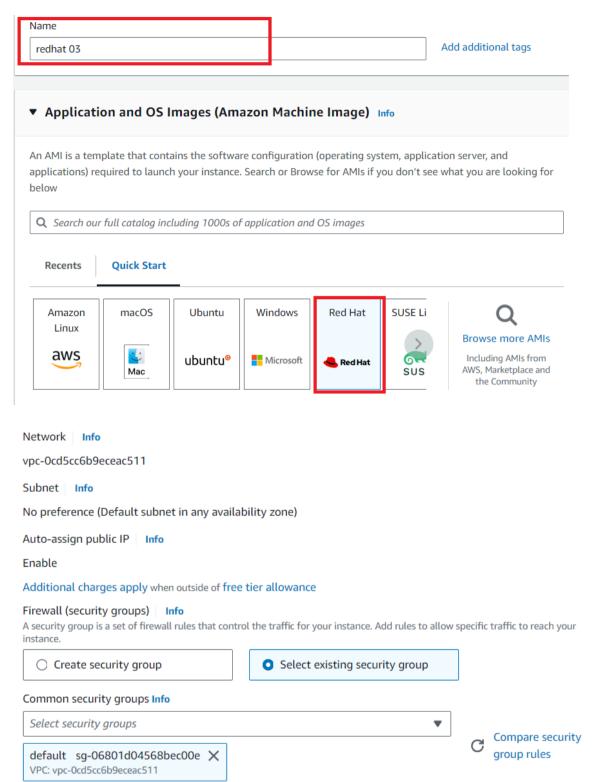
```
####
                     Amazon Linux 2023
                     https://aws.amazon.com/linux/amazon-linux-2023
[ec2-user@ip-172-31-89-86 ~]$ sudo su
[root@ip-172-31-89-86 ec2-user]# sudo yum update
Last metadata expiration check: 0:01:24 ago on Wed Aug 28 17:03:54 2024.
Dependencies resolved.
Nothing 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

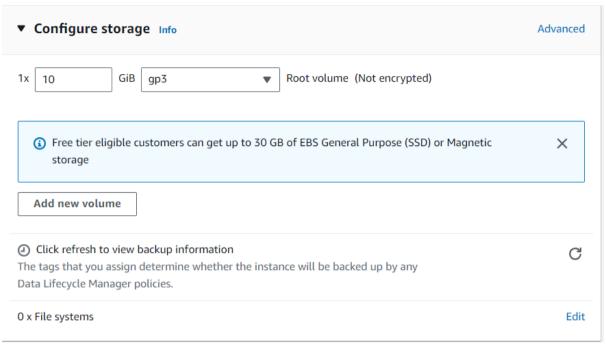
After checked the nfs mount or not

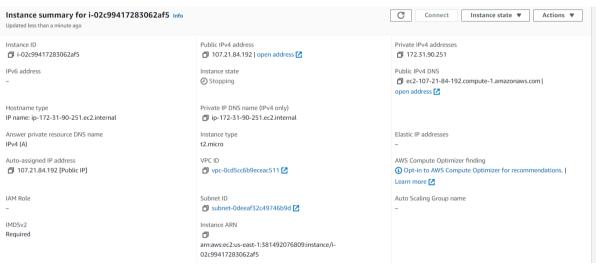
Command used for nfs mount confirmation.

df -h



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





```
rhel-9-baseos-rhui-rpms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2.34-100.el9 4.3
2.34-100.el9 4.3
5.14.0-427.33.1.el9 4
5.14.0-427.33.1.el9 4
5.14.0-427.33.1.el9 4
2.0.27-8.el9 4.3
7.76.1-29.el9 4.1
1.8-6.el9 4.1
2.9.4-6.el9 4.1
2.9.4-6.el9 4.1
2.9.4-6.el9 4.1
2.9.4-6.el9 4.1
2.9.4-6.el9 4.1
2.9.4-6.el9 4.1
3.9.1-38.el9 4.4
8.7p1-38.el9 4.3
3.9.18-3.el9 4.1
53.0.0-12.el9 4.1
53.0.0-12.el9 4.1
1.9.4-6.el9 4.1
2.9.4-6.el9 4.1
                   glibc-gconv-extra
glibc-langpack-en
kernel-tools
kernel-tools-libs
kexec-tools
libcurl
libndn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            x86_64
                libndp
libss_certmap
libss_idmap
libss_sidmap
libss_sudo
linux-firmware
linux-firmware-whence
openssh
openssh-clients
openssh-server
python-unversioned-command
python3
                python-unversioned-comman
python3-libs
python3-libs
python3-setuptools-wheel
rh-amazon-rhui-client
selinux-policy-targeted
shim-x64
sssd-client
sesd-common
                       systemd
systemd-libs
                   systemd-rum-macros
systemd-rpm-macros
systemd-udev
         Transaction Summary
Total download size: 532 M
Is this ok [y/N]: y
```

Upgraded:
NetworkManager-1:1.46.0-13.el9_4.x86_64
NetworkManager-team-1:1.46.0-13.el9_4.x86_64
NetworkManager-team-1:1.46.0-13.el9_4.x86_64
reliber-common-2.34-109.el9_4.3.x86_64
kernel-tools-5.14.0-427,33.1.el9_4.x86_64
libss_idmap-2.9_4.6.x86_64
libss_idmap-2.9_4.6.2l9_4.1.x86_64
libss_idmap-2.9_4.6.2l9_4.1.x86_64
libtunx-firmware-20240603-143.1.el9_4.noarch
openssh-clients-8.7pl-38.el9_4.4.x86_64
python3-setuptools-53.0.0-12.el9_4.1.noarch
selinux-policy-38.1.55-2.el9_4.2.noarch
selinux-policy-38.1.55-2.el9_4.2.noarch
selsystemd-rpm-macros-252-32.el9_4.6.noarch
systemd-rpm-macros-252-32.el9_4.6.noarch
systemd-rpm-macros-252-32.el9_4.6.noarch
systemd-rpm-macros-252-32.el9_4.6.noarch
systemd-rpm-macros-252-32.el9_4.6.noarch

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

NetworkManager-cloud-setup-1:1.46.0-13.el9_4.x86_64
NetworkManager-tut-1:1.46.0-13.el9_4.x86_64
curl-7.76.1-29.el9_4.1.x86_64
glibc-gconv-extra-2.34-100.el9_4.3.x86_64
kernel-tools-libs-5.14.0-427.33.1.el9_4.x86_64
libdg-1.8-6.el9_4.x86_64
libsss_nss_idmap-2.9.4-6.el9_4.1.x86_64
linux-firmware-whence-20240603-143.1.el9_4.noarch
openssh-server-8.7p-138.el9_4.1.x86_64
python3-libs-3.9.18-3.el9_4.3.x86_64
python3-tsutpotols-wheel-53.0.0-12.el9_4.1.noarch
selinux-policy-targeted-38.1.35-2.el9_4.2.noarch
ssd-common-2.9.4-6.el9_4.1.x86_64
systemd-libs-252-32.el9_4.6.x86_64
systemd-libs-252-32.el9_4.6.x86_64

kernel-core-5.14.0-427.33.1.el9_4.x86_64

NetworkManager-libnm-1:1.46.0-13.el9_4.x86_64
ca-certificates-2024.2.69_v8.0.303-91.4.el9_4.noarch
glibc-1angpack-en-2.34-100.el9_4.3.x86_64
glibc-langpack-en-2.34-100.el9_4.3.x86_64
kexec-tools-2.0.27-8.el9_4.3.x86_64
libsss_certmap-2.9.4-6.el9_4.1.x86_64
libsss_sudo-2.9.4-6.el9_4.1.x86_64
openssh-8.7p.1-38.el9_4.4.x86_64
python-unversioned-command-3.9.18-3.el9_4.3.noarch
python3-perf-5.14.0-427.33.1.el9_4.x86_64
rh-amazon-rhui-client-4.0.19-1.el9.noarch
shim-x64-15.8-4.el9_3.x86_64
systemd-pam-252-32.el9_4.5.x86_64

kernel-modules-5.14.0-427.33.1.el9 4.x86 64

74 kB/s | 4.5 kB 72 kB/s | 4.1 kB 27 kB/s | 1.5 kB

[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) Red Hat Enterprise Linux 9 for x86 64 - BaseOS from RHUI (RPMs) Red Hat Enterprise Linux 9 Client Configuration 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 |

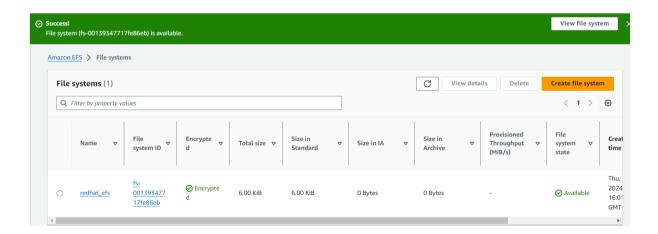
ransaction Summary

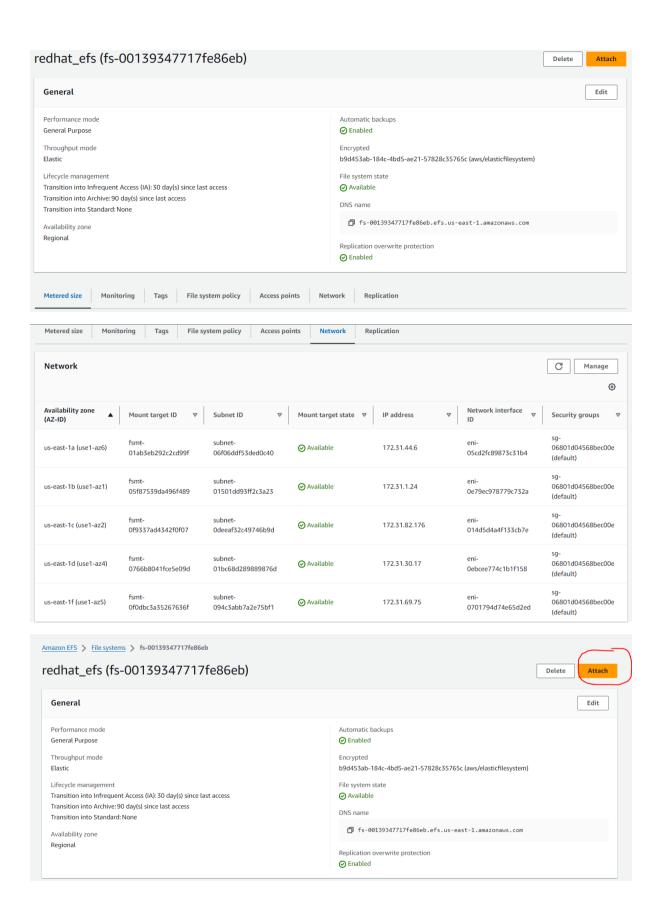
Install 11 Packages

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









| Attach | × | | | | |
|---|----------------|--|--|--|--|
| Mount your Amazon EFS file system on a Linux instance. Learn more ☑ | | | | | |
| O 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,noresyport 172.31.44.6:/ efs | | | | | |
| See our user guide for more information. Learn more 🛂 | | | | | |
| Close | | | | | |

```
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]# |
```