



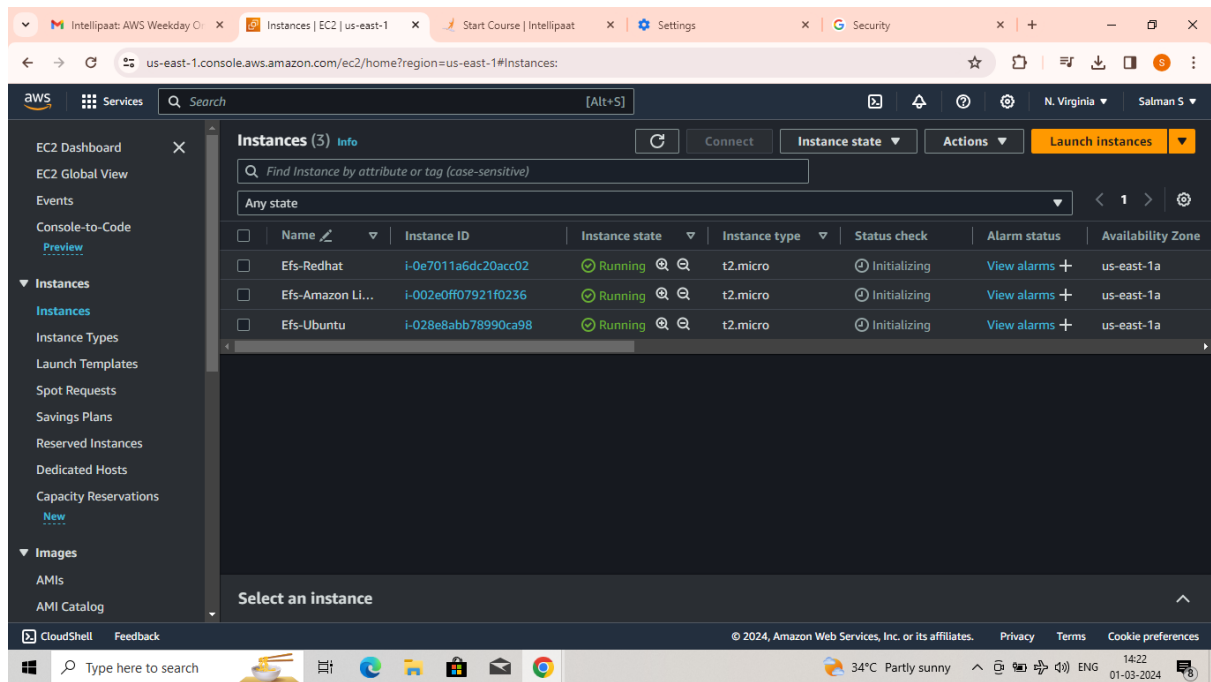
Module 2: EC2 and EFS Assignment

Tasks To Be Performed:

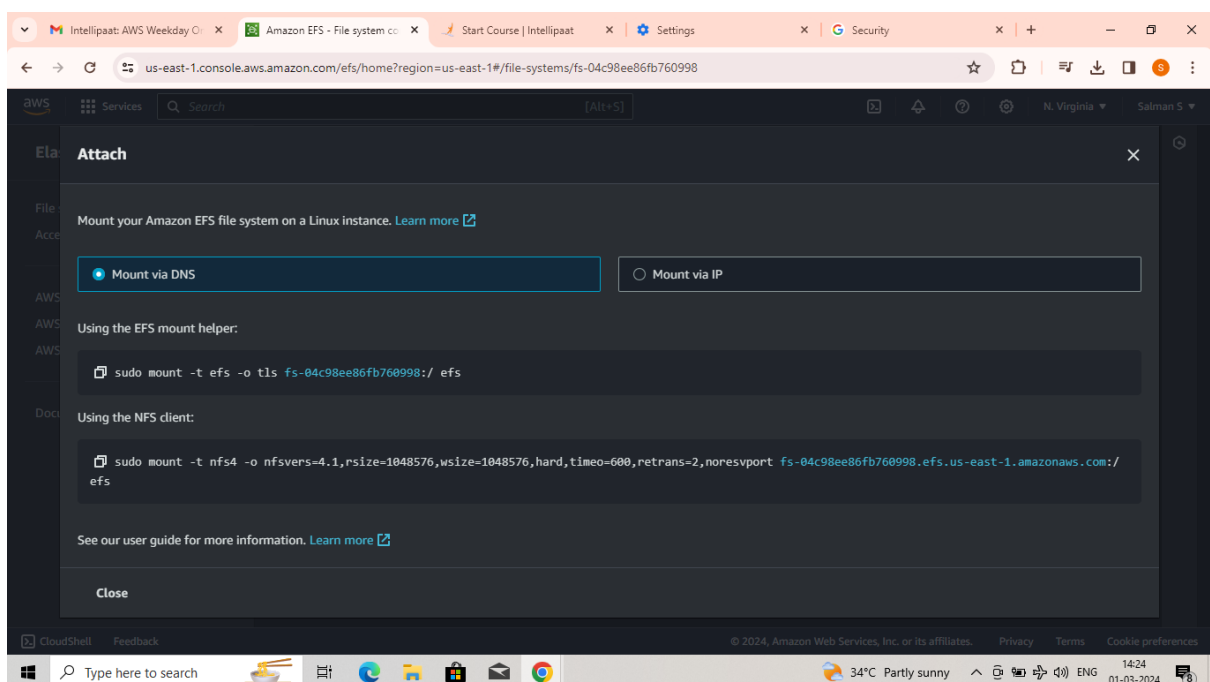
1. Create an EFS and connect it to 3 different EC2 instances. Make sure that all instances have different operating systems. For instance, Ubuntu, Red Hat Linux and Amazon Linux 2.

IntelliPaat

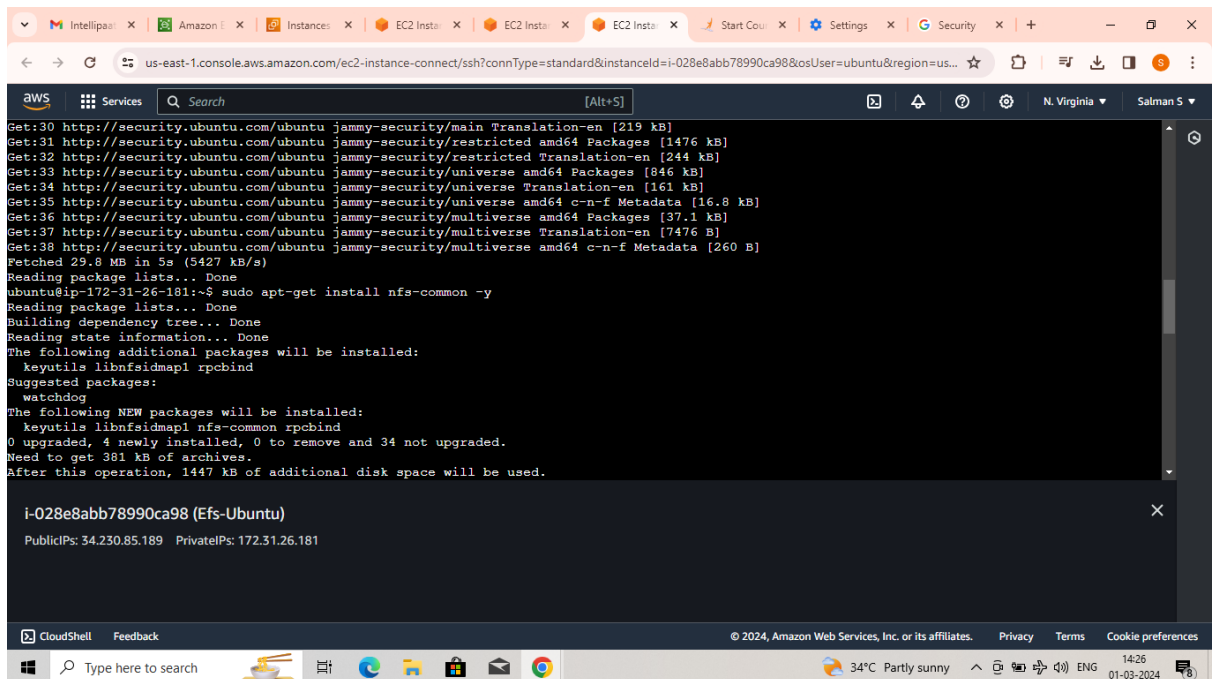
1. Created 3 Different EC2 as per the Assignment Instances



2. Created EFS



3. In Ubuntu installed nfs client

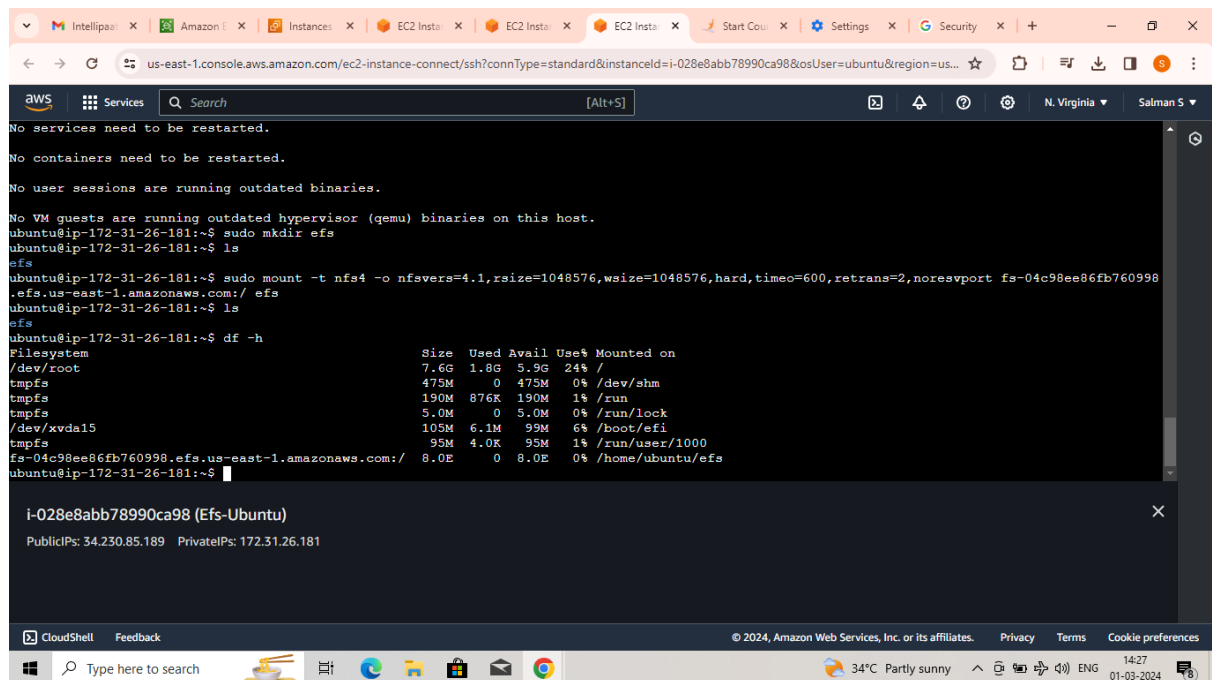


The screenshot shows an AWS CloudShell terminal window with the following output:

```
Get:30 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [219 kB]
Get:31 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [1476 kB]
Get:32 http://security.ubuntu.com/ubuntu jammy-security/restricted Translation-en [244 kB]
Get:33 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [846 kB]
Get:34 http://security.ubuntu.com/ubuntu jammy-security/universe Translation-en [161 kB]
Get:35 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 c-n-f Metadata [16.8 kB]
Get:36 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [37.1 kB]
Get:37 http://security.ubuntu.com/ubuntu jammy-security/multiverse Translation-en [7476 B]
Get:38 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 c-n-f Metadata [260 B]
Fetched 29.8 MB in 5s (5427 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-26-181:~$ sudo apt-get install nfs-common -y
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 34 not upgraded.
Need to get 381 kB of archives.
After this operation, 1447 kB of additional disk space will be used.
```

i-028e8abb78990ca98 (Efs-Ubuntu)
PublicIPs: 34.230.85.189 PrivateIPs: 172.31.26.181

4. Created directory EFS and and mounted successfully in ubuntu



The screenshot shows an AWS CloudShell terminal window with the following output:

```
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.
ubuntu@ip-172-31-26-181:~$ sudo mkdir efs
ubuntu@ip-172-31-26-181:~$ ls
efs
ubuntu@ip-172-31-26-181:~$ sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsiz=1048576,hard,timeo=600,retrans=2,noresvport fs-04c98ee86fb760998
.efs.us-east-1.amazonaws.com:/ efs
ubuntu@ip-172-31-26-181:~$ ls
efs
ubuntu@ip-172-31-26-181:~$ 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	190M	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-04c98ee86fb760998.efs.us-east-1.amazonaws.com:/	8.0E	0	8.0E	0%	/home/ubuntu/efs

ubuntu@ip-172-31-26-181:~\$

i-028e8abb78990ca98 (Efs-Ubuntu)
PublicIPs: 34.230.85.189 PrivateIPs: 172.31.26.181

-
- The screenshot shows a terminal session on an Amazon EC2 instance. The user runs several commands to update the system, install nfs-utils, create an efs directory, and mount an EFS file system.
- ```
[ec2-user@ip-172-31-28-145 ~]$ sudo yum update
Last metadata expiration check: 0:05:01 ago on Fri Mar 1 08:52:34 2024.
Dependencies resolved.
Nothing to do.
Complete!

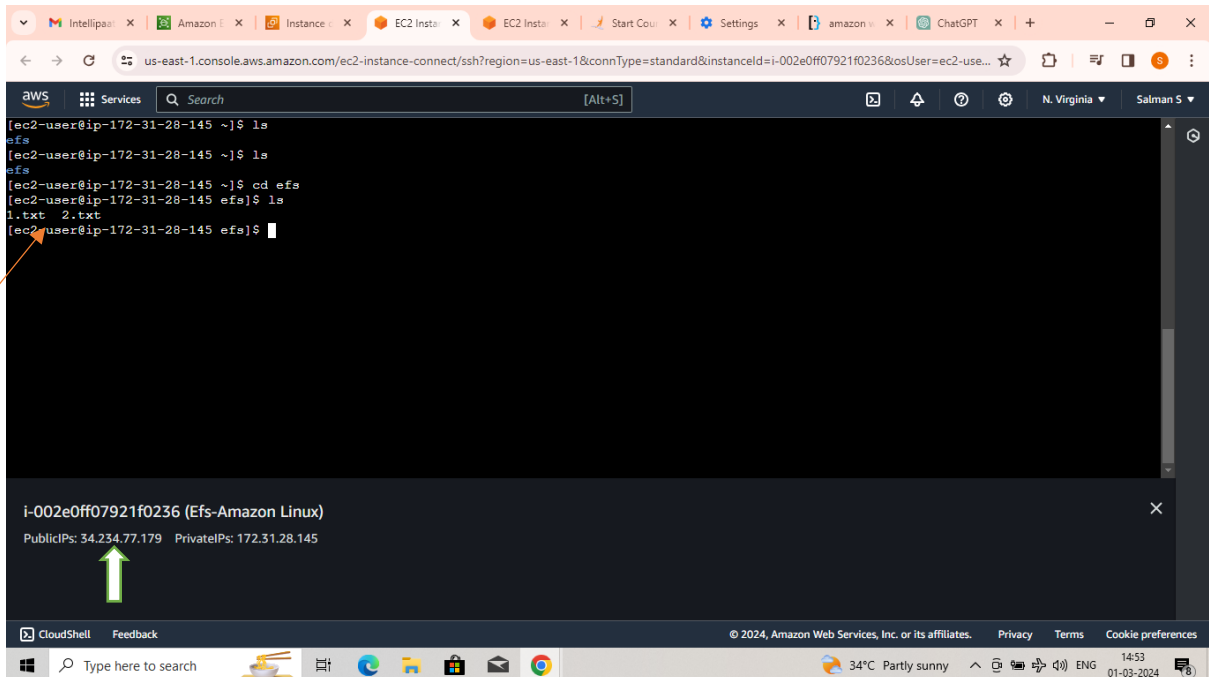
[ec2-user@ip-172-31-28-145 ~]$ sudo yum install nfs-utils -y
Last metadata expiration check: 0:05:24 ago on Fri Mar 1 08:52:34 2024.
Package nfs-utils-1:2.5.4-2.rc3.amzn2023.0.3.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!

[ec2-user@ip-172-31-28-145 ~]$ mkdir efs
[ec2-user@ip-172-31-28-145 ~]$ ls
efs

[ec2-user@ip-172-31-28-145 ~]$ sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,retrans=2,noresvport fs-04c98ee86fb76e0998.efs.us-east-1.amazonaws.com:/ efs
```
- The terminal output indicates that the system is up-to-date, nfs-utils is already installed, and the EFS file system is successfully mounted at /efs.

- [illegible]

7. Its reflected in the amazon machine u check with ips address too



The screenshot shows the AWS CloudShell interface. The terminal window displays the following commands and output:

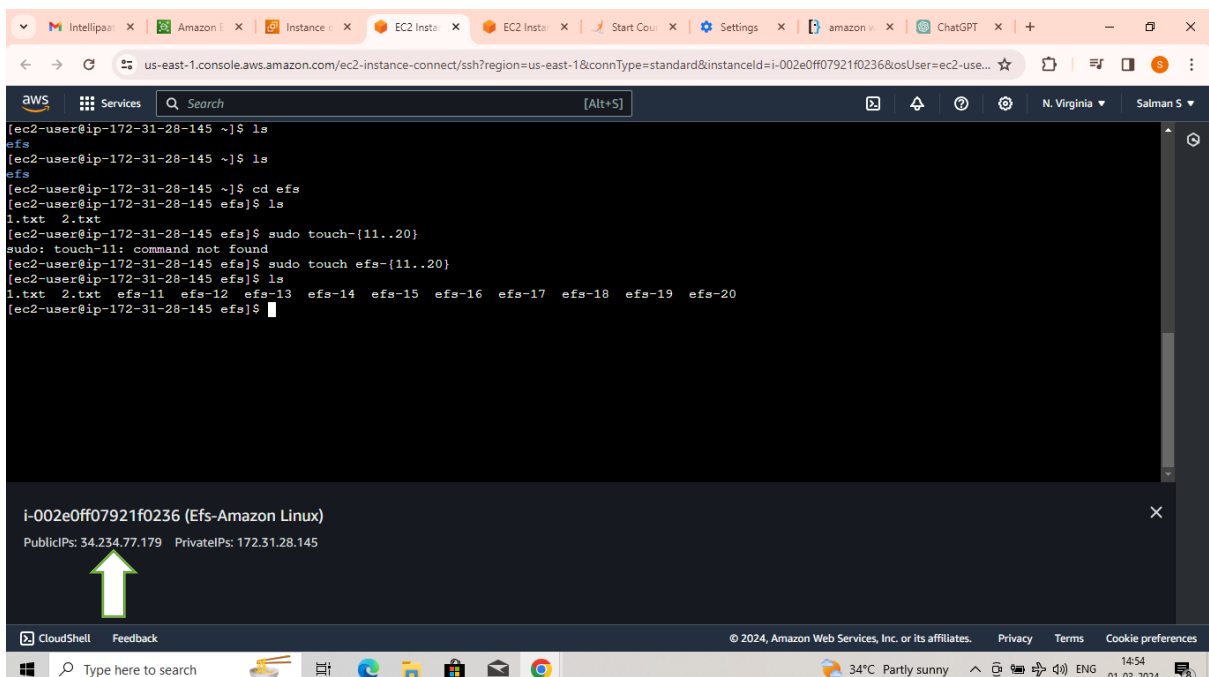
```
(ec2-user@ip-172-31-28-145 ~)$ ls
efs
(ec2-user@ip-172-31-28-145 ~)$ ls
efs
(ec2-user@ip-172-31-28-145 ~)$ cd efs
(ec2-user@ip-172-31-28-145 efs)$ ls
1.txt 2.txt
(ec2-user@ip-172-31-28-145 efs)$
```

An orange arrow points to the prompt of the last command. Below the terminal, a box displays instance information for `i-002e0ff07921f0236 (Efs-Amazon Linux)`:

```
PublicIPs: 34.234.77.179 PrivateIPs: 172.31.28.145
```

A green arrow points to the PublicIPs field. The bottom of the screen shows the Windows taskbar with the search bar and various application icons.

8. Now I am going to created many files in **amazon linux** and it will open in **ubuntu**



The screenshot shows the AWS CloudShell interface. The terminal window displays the following commands and output:

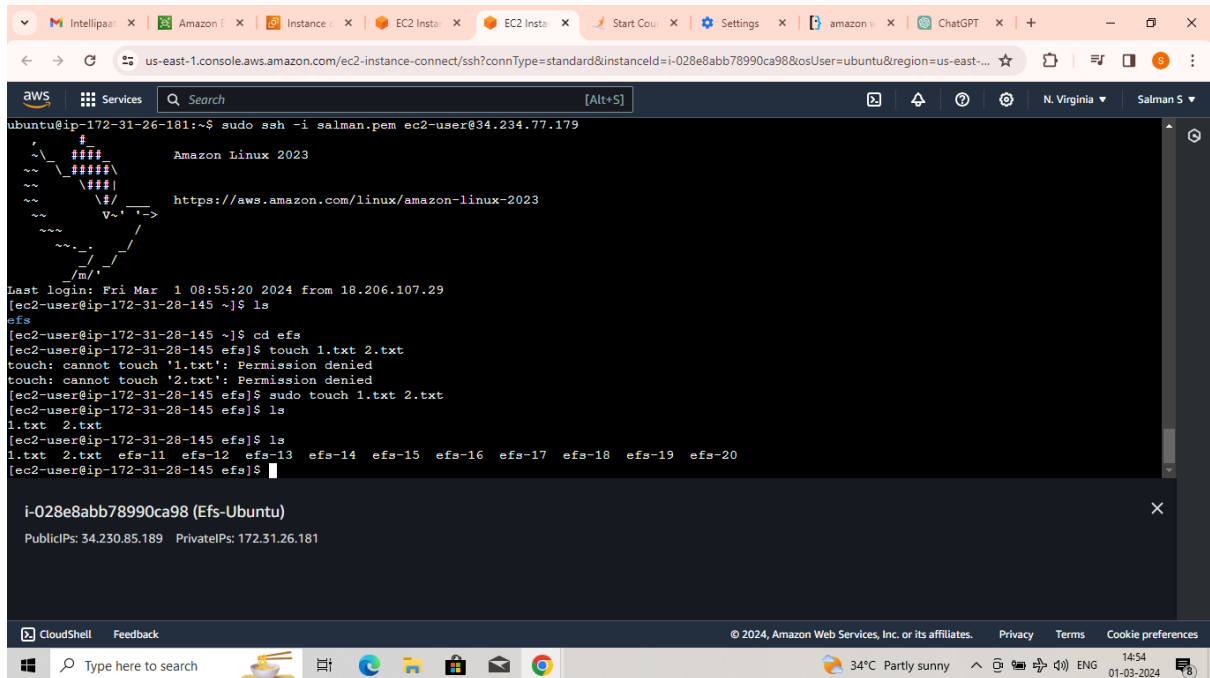
```
(ec2-user@ip-172-31-28-145 ~)$ ls
efs
(ec2-user@ip-172-31-28-145 ~)$ ls
efs
(ec2-user@ip-172-31-28-145 ~)$ cd efs
(ec2-user@ip-172-31-28-145 efs)$ ls
1.txt 2.txt
(ec2-user@ip-172-31-28-145 efs)$ sudo touch-{11..20}
sudo: touch-11: command not found
(ec2-user@ip-172-31-28-145 efs)$ sudo touch efs-{11..20}
(ec2-user@ip-172-31-28-145 efs)$ ls
1.txt 2.txt efs-11 efs-12 efs-13 efs-14 efs-15 efs-16 efs-17 efs-18 efs-19 efs-20
(ec2-user@ip-172-31-28-145 efs)$
```

Below the terminal, a box displays instance information for `i-002e0ff07921f0236 (Efs-Amazon Linux)`:

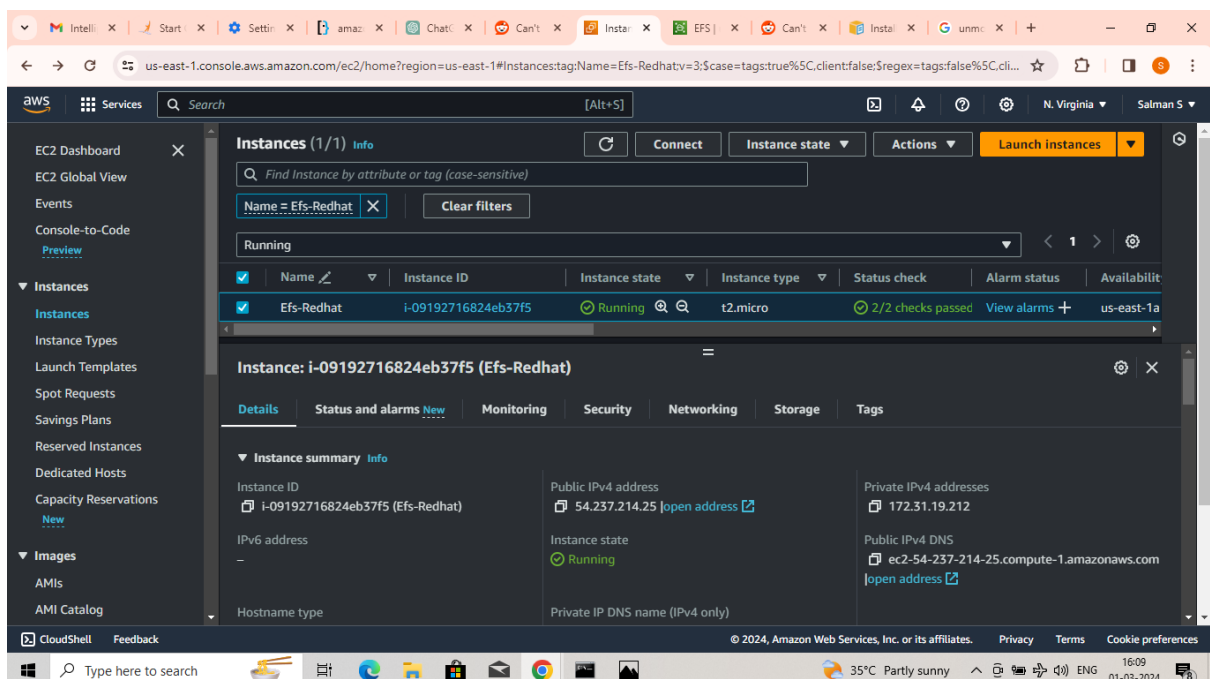
```
PublicIPs: 34.234.77.179 PrivateIPs: 172.31.28.145
```

A green arrow points to the PublicIPs field. The bottom of the screen shows the Windows taskbar with the search bar and various application icons.

## 9. In Ubuntu its reflected



## 10. Redhat instance



## 11. Connected to the Local Machine

```
ec2-user@ip-172-31-19-212:~$ ssh -i "Salman.pem" ec2-user@ec2-54-237-214-25.compute-1.amazonaws.com
Microsoft Windows [Version 10.0.19045.3803]
(c) Microsoft Corporation. All rights reserved.

C:\Users\shaik>cd downloads
C:\Users\shaik\Downloads>ls
'ls' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\shaik\Downloads>ssh -i "Salman.pem" ec2-user@ec2-54-237-214-25.compute-1.amazonaws.com
The authenticity of host 'ec2-54-237-214-25.compute-1.amazonaws.com (54.237.214.25)' can't be established.
ECDSA key fingerprint is SHA256:wt3puX3/F459pUa2tiEgJubt0Xz0cMgLI1F5tqtRgQ.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-54-237-214-25.compute-1.amazonaws.com,54.237.214.25' (ECDSA) to the list of known hosts.
Register this system with Red Hat Insights: insights-client --register
Create an account or view all your systems at https://red.ht/insights-dashboard
[ec2-user@ip-172-31-19-212 ~]$ whoami
ec2-user
[ec2-user@ip-172-31-19-212 ~]$ sudo yum update
Updating Subscription Management repositories.
Unable to read consumer identity

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

Red Hat Enterprise Linux 9 for x86_64 - AppStream from RHUI (RPMs) 47 MB/s | 29 MB | 00:00
Red Hat Enterprise Linux 9 for x86_64 - BaseOS from RHUI (RPMs) 32 MB/s | 17 MB | 00:00
Red Hat Enterprise Linux 9 Client Configuration 23 kB/s | 2.2 kB | 00:00
Dependencies resolved.
=====
Version Repository Size Package Architecture
=====
Upgrading:
gnutls x86_64 3.7.6-23.el9_3.3 rhel-9-baseos-rhui-rpms 1.1 M
nspr x86_64 4.35.0-6.el9_3 rhel-9-appstream-rhui-rpms 138 k
nss x86_64 3.90.0-6.el9_3 rhel-9-appstream-rhui-rpms 709 k
nss-softokn x86_64 3.90.0-6.el9_3 rhel-9-appstream-rhui-rpms 387 k
nss-softokn-freebl x86_64 3.90.0-6.el9_3 rhel-9-appstream-rhui-rpms 309 k
nss-sysinit x86_64 3.90.0-6.el9_3 rhel-9-appstream-rhui-rpms 21 k
nss-util x86_64 3.90.0-6.el9_3 rhel-9-appstream-rhui-rpms 90 k
openssl x86_64 1:3.0.7-25.el9_3 rhel-9-baseos-rhui-rpms 1.2 M
openssl-libs x86_64 1:3.0.7-25.el9_3 rhel-9-baseos-rhui-rpms 2.2 M
rh-amazon-rhui-client noarch 4.0.14-1.el9 rhui-client-config-server-9 39 k
selinux-policy noarch 38.1.23-1.el9_3.2 rhel-9-baseos-rhui-rpms 56 k
selinux-policy-targeted noarch 38.1.23-1.el9_3.2 rhel-9-baseos-rhui-rpms 6.8 M
sudo x86_64 1.9.5p2-10.el9_3 rhel-9-baseos-rhui-rpms 1.1 M
```

## 12. Installing Nfs Client in redhat

The screenshot shows the AWS Management Console with the EC2 instance 'ip-172-31-19-212' selected. The 'Details' tab is active, showing the instance is in the 'running' state. A terminal window is open, displaying the command `sudo yum install nfs-utils -y` and its output, which lists the packages to be installed and their sizes. The terminal output shows that the installation is complete.

```
ec2-user@ip-172-31-19-212:~$ sudo yum install nfs-utils -y
Installing : nfs-utils-2:4.2.0-12.el9_3.x86_64
Installing dependencies: nfs-utils-lib-2:4.2.0-12.el9_3.x86_64
Installing : nfs-utils-lib-2:4.2.0-12.el9_3.x86_64
Installing : nfs-utils-2:4.2.0-12.el9_3.x86_64
Complete!
```



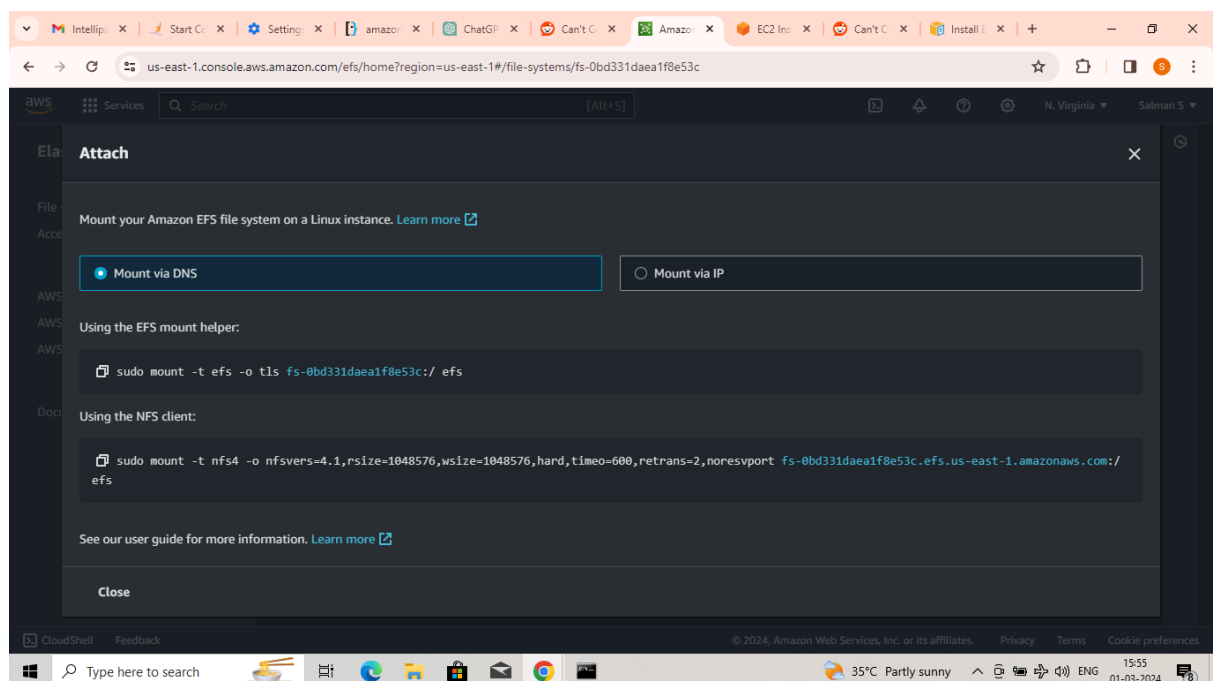
### 13. Installed nfs client and created directory

```
ec2-user@ip-172-31-19-212:~$ sudo yum install nfs-utils sssd-nfs-idmap -y
Running scriptlet: gssproxy-0.8.4-6.el9.x86_64 9/11
Running scriptlet: nfs-utils-1:2.5.4-20.el9.x86_64 10/11
Installing : nfs-utils-1:2.5.4-20.el9.x86_64 10/11
Running scriptlet: nfs-utils-1:2.5.4-20.el9.x86_64 10/11
Installing : sssd-nfs-idmap-2.9.1-4.el9_3.5.x86_64 11/11
Running scriptlet: sssd-nfs-idmap-2.9.1-4.el9_3.5.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 : rpcbind-1.2.6-5.el9.x86_64 5/11
Verifying : keyutils-1.6.3-1.el9.x86_64 6/11
Verifying : gssproxy-0.8.4-6.el9.x86_64 7/11
Verifying : libnfsidmap-1:2.5.4-20.el9.x86_64 8/11
Verifying : libtirpc-1.3.3-2.el9.x86_64 9/11
Verifying : nfs-utils-1:2.5.4-20.el9.x86_64 10/11
Verifying : sssd-nfs-idmap-2.9.1-4.el9_3.5.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-1:2.5.4-20.el9.x86_64 libtirpc-1.3.3-2.el9.x86_64 libverto-libev-0.3.2-3.el9.x86_64
nfs-utils-1:2.5.4-20.el9.x86_64 quota-1:4.06-6.el9.x86_64 quota-nls-1:4.06-6.el9.noarch
rpcbind-1.2.6-5.el9.x86_64 sssd-nfs-idmap-2.9.1-4.el9_3.5.x86_64

Complete!
[ec2-user@ip-172-31-19-212 ~]$ sudo mkdir efs
[ec2-user@ip-172-31-19-212 ~]$ ls
efs
[ec2-user@ip-172-31-19-212 ~]$
```

### 14. Copying NFS Command



## 15. Successfully mounted

```
ec2-user@ip-172-31-19-212:~
C:\Users\shaik>cd download
The system cannot find the path specified.
C:\Users\shaik>cd downloads
C:\Users\shaik\Downloads>ssh -i "Salman.pem" ec2-user@ec2-54-237-214-25.compute-1.amazonaws.com
Register this system with Red Hat Insights: insights-client --registerRegister 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: Fri Mar 1 10:19:52 2024 from 49.43.217.193
[ec2-user@ip-172-31-19-212 ~]$ ls
efs
[ec2-user@ip-172-31-19-212 ~]$ efs
-bash: efs: command not found
[ec2-user@ip-172-31-19-212 ~]$
[ec2-user@ip-172-31-19-212 ~]$
[ec2-user@ip-172-31-19-212 ~]$ whoami
ec2-user
[ec2-user@ip-172-31-19-212 ~]$ sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsiz=1048576,hard,timeo=600,retr=2,noresvport fs-0bd331daea1f8e53c.efs.us-east-1.amazonaws.com:/ efs
[ec2-user@ip-172-31-19-212 ~]$ ls
efs
[ec2-user@ip-172-31-19-212 ~]$ 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 5.0M 146M 4% /run
/dev/xvda4 9.2G 1.4G 7.8G 16% /
/dev/xvda3 536M 161M 376M 31% /boot
/dev/xvda2 200M 7.0M 192M 4% /boot/efi
tmpfs 76M 0 76M 0% /run/user/1000
fs-0bd331daea1f8e53c.efs.us-east-1.amazonaws.com:/ 8.0E 0 8.0E 0% /home/ec2-user/efs
[ec2-user@ip-172-31-19-212 ~]$
```