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Create and Attach the EFS File System

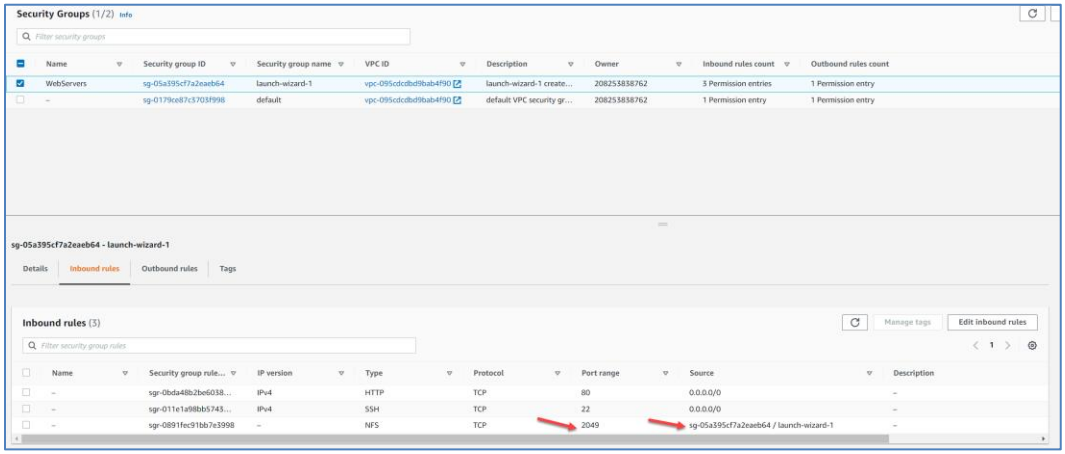
You have been asked to:

1. Create an EFS and connect it to 3 different EC2 instances. Make sure all instances have

Different Operating Systems. For instance, Ubuntu, Red Hat Linux, and Amazon Linux 2.

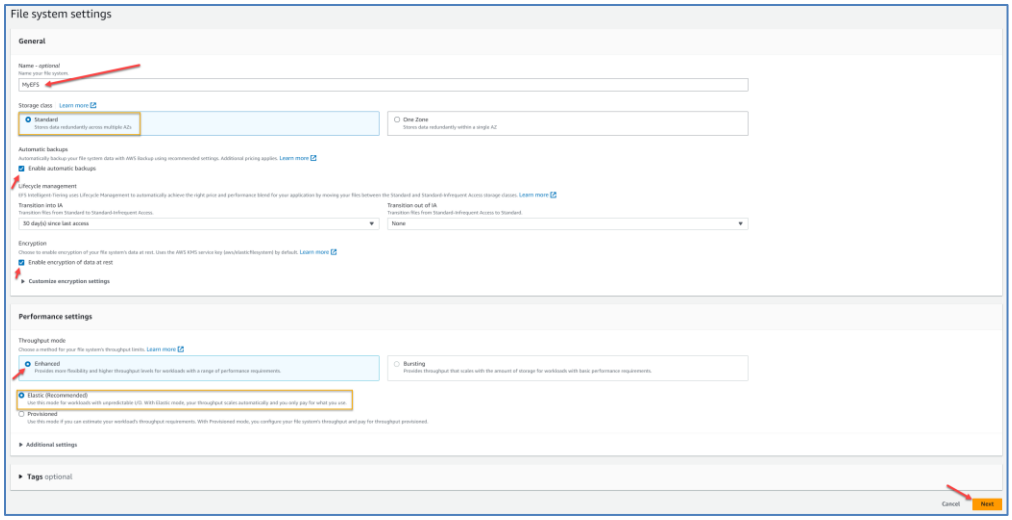
Security Groups:

Modify the security group to allow NFS port (2049)



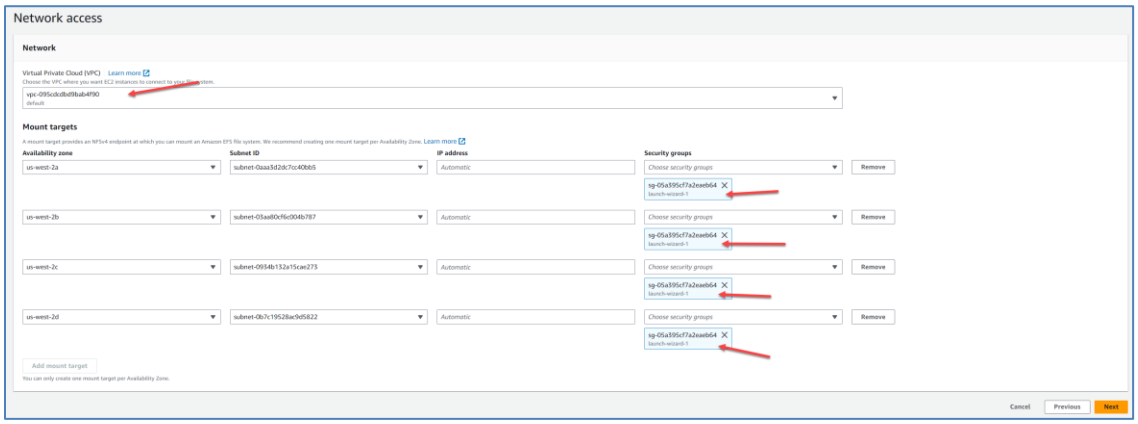
Creating the EFS (Elastic File System)

Navigate to **EFS Service** → Click "**Create File System**" →



1. Provide EFS a Name i.e..MyEFS
2. Select the storage class depending on your requirement “Standard” is recommended. One Zone option is cost reduction and non-critical data.
3. If you want backups for the EFS check mark for “Enable automatic backups”
4. For more security you can enable “Enable encryption of data at rest”
5. Select Throughput Mode “Enhanced” is recommended

Click “**Next**”



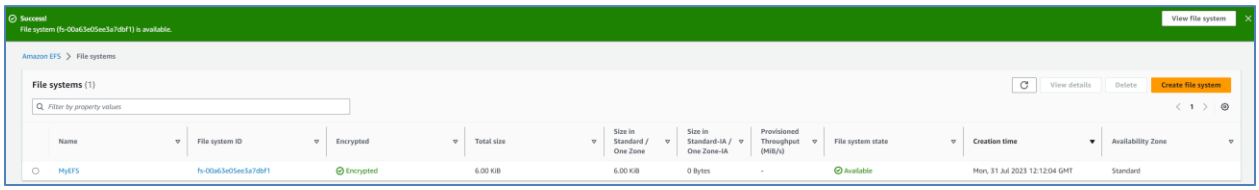
Select the correct VPC where all the EC2 instances are located

Assign security correct group (Otherwise network traffic is not allowed)

Click “**Next**”

File system policy Do not select anything just click “**Next**”

Click “**Create**”



EFS is created and available in few seconds

Now click on file system name to collect the EFS path for the mount

Click “**Attach**”

Copy the commands

Launch multiple EC2 instances and assign same security group which is assigned to EFS File system.

1. Ubuntu Server – EC2 instance
2. RHEL 9 Server – EC2 instance
3. Amazon Linux 2023 – EC2 instance

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```
ubuntu@ip-172-31-21-32:~$ sudo -s
root@ip-172-31-21-32:/home/ubuntu# cd
root@ip-172-31-21-32:~# lsb_release -a
No LSB modules are available.
Distributor ID: Ubuntu
Description:    Ubuntu 22.04.2 LTS
Release:        22.04
Codename:       jammy
root@ip-172-31-21-32:~# date
Mon Jul 31 12:29:28 UTC 2023
root@ip-172-31-21-32:~# df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/root       7.6G  1.6G  6.0G  21% /
tmpfs           483M     0  483M   0% /dev/shm
tmpfs           194M  832K  193M   1% /run
tmpfs           5.0M     0  5.0M   0% /run/lock
/dev/xvda15     105M  6.1M   99M   6% /boot/efi
tmpfs            97M  4.0K   97M   1% /run/user/1000
root@ip-172-31-21-32:~# /myefs
bash: /myefs: No such file or directory
root@ip-172-31-21-32:~# mkdir /myefs
root@ip-172-31-21-32:~# sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,retrans=2,noresvport fs-00a63e05ee3a7dbf1.efs.us-west-2.amazonaws.com:/ /myefs
mount: /myefs: bad option; for several filesystems (e.g. nfs, cifs) you might need a /sbin/mount.<type> helper program.
root@ip-172-31-21-32:~#
```

Install the nfs-common package using the below command to resolve the above error message

```
apt-get install nfs-common -y
```

Attempt to remount

```
root@ip-172-31-21-32:~# sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,retrans=2,noresvport fs-00a63e05ee3a7dbf1.efs.us-west-2.amazonaws.com:/ /myefs
root@ip-172-31-21-32:~# df -h
Filesystem                                      Size  Used Avail Use% Mounted on
/dev/root                                       7.6G  1.6G  6.0G  21% /
tmpfs                                           483M     0  483M   0% /dev/shm
tmpfs                                           194M  852K  193M   1% /run
tmpfs                                           5.0M     0  5.0M   0% /run/lock
/dev/xvda15                                     105M  6.1M   99M   6% /boot/efi
tmpfs                                            97M  4.0K   97M   1% /run/user/1000
fs-00a63e05ee3a7dbf1.efs.us-west-2.amazonaws.com:/  8.0E     0  8.0E   0% /myefs
root@ip-172-31-21-32:~# date
Mon Jul 31 12:40:23 UTC 2023
```

Mounted successfully on Ubuntu and Amazon Linux as shown in screen shot

```
[root@ip-172-31-24-116 ~]# 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  2.8M  188M   2% /run
/dev/xvda1      8.0G  1.6G  6.4G  20% /
tmpfs           475M     0  475M   0% /tmp
tmpfs            95M     0   95M   0% /run/user/0
[root@ip-172-31-24-116 ~]# mkdir /myefs
[root@ip-172-31-24-116 ~]# sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,retrans=2,noresvport fs-00a63e05ee3a7dbf1.efs.us-west-2.amazonaws.com:/ /myefs
[root@ip-172-31-24-116 ~]# 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  2.8M  188M   2% /run
/dev/xvda1                                      8.0G  1.6G  6.4G  20% /
tmpfs                                           475M     0  475M   0% /tmp
tmpfs                                            95M     0   95M   0% /run/user/0
fs-00a63e05ee3a7dbf1.efs.us-west-2.amazonaws.com:/  8.0E     0  8.0E   0% /myefs
[root@ip-172-31-24-116 ~]# date
Mon Jul 31 12:34:25 UTC 2023
[root@ip-172-31-24-116 ~]# cat /etc/os-release
NAME="Amazon Linux"
VERSION="2023"
ID="amzn"
ID_LIKE="fedora"
VERSION_ID="2023"
PLATFORM_ID="platform:al2023"
PRETTY_NAME="Amazon Linux 2023"
ANSI_COLOR="0;33"
CPE_NAME="cpe:2.3:o:amazon:amazon_linux:2023"
HOME_URL="https://aws.amazon.com/linux/"
BUG_REPORT_URL="https://github.com/amazonlinux/amazon-linux-2023"
SUPPORT_END="2028-03-01"
[root@ip-172-31-24-116 ~]#
```

```
root@ip-172-31-26-240:~
[ec2-user@ip-172-31-26-240 ~]$
[ec2-user@ip-172-31-26-240 ~]$ sudo -s
[root@ip-172-31-26-240 ec2-user]# cd
[root@ip-172-31-26-240 ~]#
[root@ip-172-31-26-240 ~]# cat /etc/redhat-release
Red Hat Enterprise Linux release 9.2 (Plow)
[root@ip-172-31-26-240 ~]# uptime
 12:29:03 up 12 min,  1 user,  load average: 0.00, 0.00, 0.00
[root@ip-172-31-26-240 ~]# date
Mon Jul 31 12:29:05 PM UTC 2023
[root@ip-172-31-26-240 ~]# df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        4.0M     0  4.0M   0% /dev
tmpfs           385M     0  385M   0% /dev/shm
tmpfs           154M  4.4M  150M   3% /run
/dev/xvda4      9.4G  1.2G  8.2G  13% /
/dev/xvda3      495M  153M  343M  31% /boot
/dev/xvda2      200M  8.0K  200M   1% /boot/efi
tmpfs            77M     0   77M   0% /run/user/1000
[root@ip-172-31-26-240 ~]# mkdir /myefs
[root@ip-172-31-26-240 ~]# sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,retrans=2,noresvport fs-00a63e05ee3a7dbf1.efs.us-west-2.amazonaws.com:/ /myefs
mount: /myefs: bad option; for several filesystems (e.g. nfs, cifs) you might need a /sbin/mount.<type> helper program.
[root@ip-172-31-26-240 ~]# yum install nfs-utils -y
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.

Last metadata expiration check: 0:02:17 ago on Mon 31 Jul 2023 12:30:22 PM UTC.
Dependencies resolved.
```

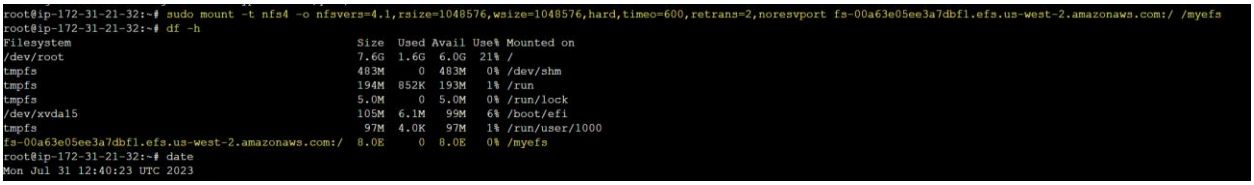
Get the similar error message in RHEL 9

```
[root@ip-172-31-26-240 ~]# sudo mount -t nfs4 -o
nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,
retrans=2,noresvport fs-00a63e05ee3a7dbf1.efs.us-west-
2.amazonaws.com:/ /myefs
```

```
mount: /myefs: bad option; for several filesystems
(e.g. nfs, cifs) you might need a /sbin/mount.<type>
helper program.
```

Install nfs-utils package using the below command

```
yum install nfs-utils -y
```



Attempt to mount is successful on RHEL 9