

Create an Amazon EFS File System and Mount to an EC2 Instance

Overview:

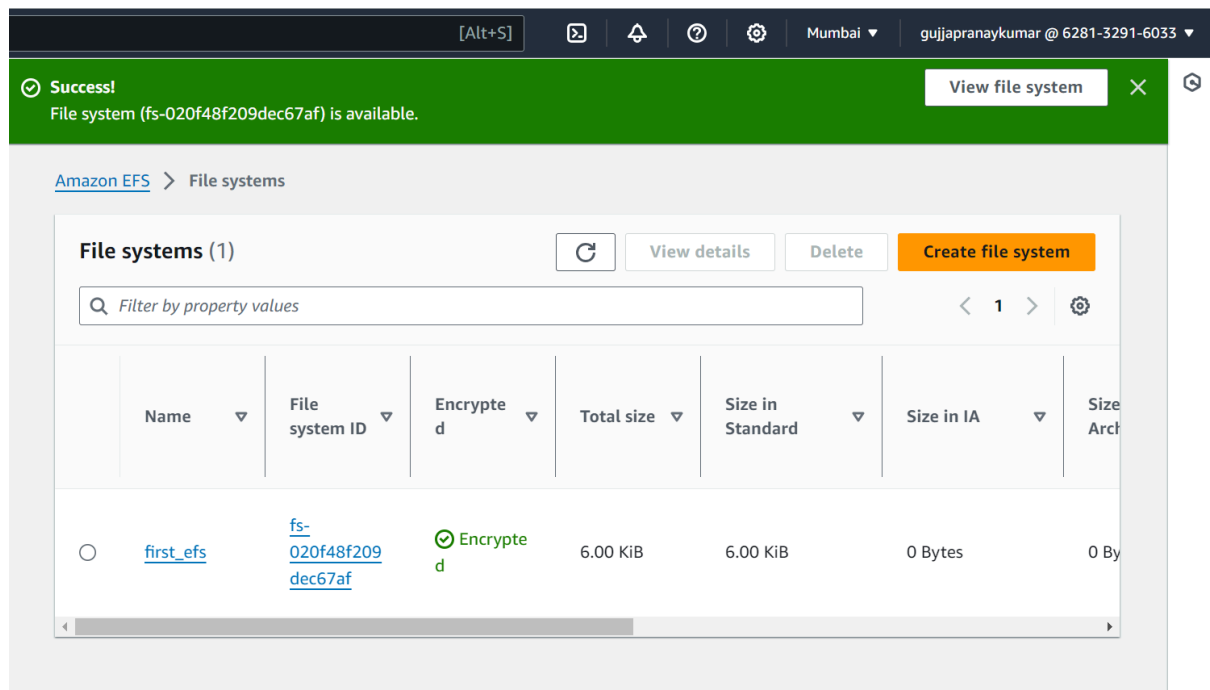
- Creating EFS file system
- Mounting it with two instances (you can have it mounted with 2 public instances that we have launched)

Steps:

1.Navigate to EFS service page and click on “create file system”

2.Provide the Name, select the VPC and click on “create” and file system is created
You need to have specific security groups to perform the mount, follow the document attached with the assignment and configure

A:



3.
Navigate to your instance where you added the security group you need to create a

directory where you will mount the EFS. Navigate to /mnt and run
sudo mkdir efs
cd efs
sudo mkdir fs2

A:

```
Last login: Thu Jan 18 07:09:29 2024 from 152.58.196.127
[ec2-user@ip-10-0-0-58 ~]$ cd /mnt
[ec2-user@ip-10-0-0-58 mnt]$ sudo mkdir efs
[ec2-user@ip-10-0-0-58 mnt]$ cd efs
[ec2-user@ip-10-0-0-58 efs]$ sudo mkdir fs2
[ec2-user@ip-10-0-0-58 efs]$
```

4.Now, you need to install the amazon efs utils library, which will allow us to run the connection command and mount the EFS. Run the command

sudo yum install -y amazon-efs-utils

A:

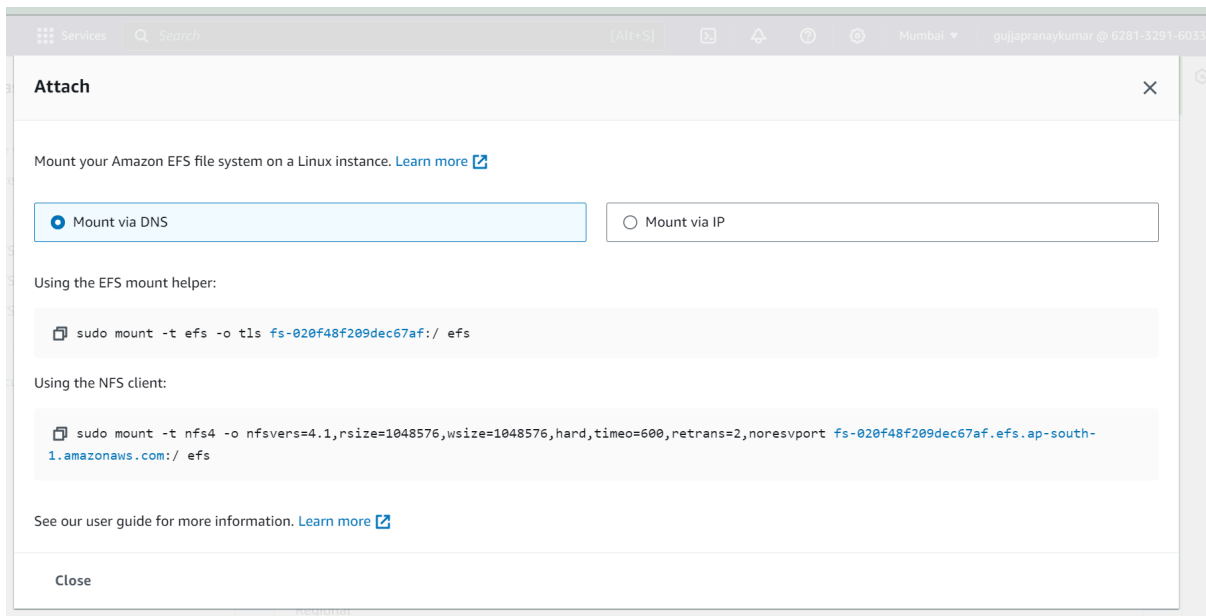
```
[ec2-user@ip-10-0-0-58 ~]$ sudo yum install -y amazon-efs-utils
Last metadata expiration check: 0:02:42 ago on Sat Jan 27 06:51:17 2024.
Dependencies resolved.
=====
Package                                Architecture      Version            Repository          Size
=====
Installing:
amazon-efs-utils                        noarch            1.35.0-1.amzn2023  amazonlinux          56 k
Installing dependencies:
stunnel                                x86_64            5.58-1.amzn2023.0.2  amazonlinux          156 k
=====
Transaction Summary
=====
Install 2 Packages

Total download size: 212 k
Installed size: 556 k
Downloading Packages:
(1/2): amazon-efs-utils-1.35.0-1.amzn2023.noarch.rpm 959 kB/s | 56 kB 00:00
```

5. Access the file system that you created, and click on the button "Attach."

6. Copy the command as marked below

A:



7. Navigate to your instance and paste the copied command and you need to include the path where you have created the folder

mnt/efs/fs2

sudo mount -t efs -o tls fs-0c77a44e51e7f72ee:/mnt/efs/fs2

(Note : you need to copy the highlighted command from your efs mount)

8. Run the command in your instance and successful mount will return no error

9. Verify you have successfully mounted using the command df -h

a:

```
[ec2-user@ip-10-0-0-58 ~]$ sudo mount -t efs -o tls fs-020f48f209dec67af:/mnt/efs/fs2
[ec2-user@ip-10-0-0-58 ~]$ 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  3.0M  187M   2% /run
/dev/xvda1       8.0G  2.1G   6.0G  26% /
tmpfs           475M   0   475M   0% /tmp
/dev/xvda128     10M   1.3M   8.7M  13% /boot/efi
tmpfs           95M   0    95M   0% /run/user/1000
127.0.0.1:/      8.0E   0   8.0E   0% /mnt/efs/fs2
[ec2-user@ip-10-0-0-58 ~]$
```

10. Similarly you can access another instance and mount the efs using the same command

(create file directory structure /mnt/efs/fs2 before running)

(you need to add the EFS Target group to this EC2 instance)

`sudo mount -t efs -o tls fs-0c77a44e51e7f72ee:/mnt/efs/fs2`

(Note : you need to copy the highlighted command from your efs mount)

11. Run the command in your instance and successful mount will return no error

12. Verify you have successfully mounted using the command `df -h`

A: **another instance**

The screenshot shows the AWS Management Console for a network interface. The 'Associated security groups' section is expanded, showing a list of security groups associated with the network interface. The security groups are:

Security group name	Security group ID	Action
launch-wizard-8	sg-001f1581bc22686c3	Remove
efs_target	sg-087a56875711965df	Remove

```
[ec2-user@ip-10-0-1-106 ~]$ sudo mount -t efs -o tls fs-020f48f209dec67af:/mnt/efs/fs2
[ec2-user@ip-10-0-1-106 ~]$ 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  2.9M  187M   2% /run
/dev/xvda1       8.0G  2.1G  6.0G  26% /
tmpfs           475M  0    475M   0% /tmp
/dev/xvda128     10M  1.3M  8.7M  13% /boot/efi
tmpfs           95M  0    95M   0% /run/user/1000
127.0.0.1:/      8.0E  0    8.0E   0% /mnt/efs/fs2
[ec2-user@ip-10-0-1-106 ~]$
```

13. Now create any file say in any one of the instance in the path /mnt/efs/fs2, it should be

reflected in the other instance as well

A:

```
[ec2-user@ip-10-0-1-106 fs2]$ sudo vi test.txt
[New] 4L, 76B written
[ec2-user@ip-10-0-1-106 fs2]$
```

```
[ec2-user@ip-10-0-0-58 ~]$ cd /mnt/efs
[ec2-user@ip-10-0-0-58 efs]$ cd fs2/
[ec2-user@ip-10-0-0-58 fs2]$ ls
test.txt
[ec2-user@ip-10-0-0-58 fs2]$ cat test.txt
hey hi i'm testing the efs

if this file is shown then efs is working good
[ec2-user@ip-10-0-0-58 fs2]$
```

END

Security groups

Security Group configuration for EFS

1. Create a new security group name it EFS Target, and leave all the rules blank and save it (There will be no inbound or outbound rules)

A:

The screenshot shows the AWS Management Console interface for a security group named 'sg-087a56875711965df - efs_target'. The breadcrumb navigation shows 'EC2 > Security Groups > sg-087a56875711965df - efs_target'. The title of the page is 'sg-087a56875711965df - efs_target' with an 'Actions' dropdown menu. Below the title is a 'Details' section containing a table with the following information:

Security group name efs_target	Security group ID sg-087a56875711965df	Description efs	VPC ID vpc-0358873cfff60846f
Owner 628132916033	Inbound rules count 0 Permission entries	Outbound rules count 1 Permission entry	

Below the details section are tabs for 'Inbound rules', 'Outbound rules', and 'Tags'. The 'Inbound rules' tab is currently selected, showing a section titled 'Inbound rules' with buttons for 'Manage tags' and 'Edit inbound rules'.

2. Create another security group named EFS Mount, and in this one add the inbound rule for NFS. Set the SOURCE for this rule to the EFS Target security group

a:

aws Services Search [Alt+S] Mumbai gujjapranaykumar @ 6281-3291-6033

Description Info
efs mount

VPC Info
vpc-0358873cfff60846f

Inbound rules Info

Type Info	Protocol Info	Port range Info	Source Info	Description - optional Info
NFS	TCP	2049	Cu... sg-087a56875711965df	

Add rule Delete

3. Add the EFS Target group to your EC2 instance, follow the screenshots

A:

aws Services Search [Alt+S] Mumbai gujjapranaykumar @ 6281-3291-6033

Instance ID
i-068ad9d293ad79166 (firstinstance)

Network interface ID
eni-04aef0a000dfd0aaa

Associated security groups
Add one or more security groups to the network interface. You can also remove security groups.

Q sg-087a56875711965df Add security group

Security groups associated with the network interface (eni-04aef0a000dfd0aaa)

Security group name	Security group ID	
launch-wizard-3	sg-0e87280b200c20730	Remove
efs_target	sg-087a56875711965df	Remove

Cancel Save

4. Go to the EFS dashboard navigate to the network tab for each EFS Mount Target (availability zone), you need to add the EFS Mount security group and remove the VPC Default group

A:

[Alt+S]⌵🔔🔗⚙️Mumbai▼gujjapranaykumar @ 6281-3291-6033▼

🟢 Enabled🔗

Metered sizeMonitoringTagsFile system policyAccess pointsNetworkReplication

Network🔄Manage⚙️

Availability zone▲	Mount target ID▼	Subnet ID▼	Mount target state▼	IP address▼	Network interface ID▼	Security groups▼
ap-south-1a	fsmt-099472919709c6d1f	subnet-000034a8c50f4335a	🟢 Available	10.0.4.110	eni-02a0d9c2c2cd19b8c	sg-0276326b9019eabad (efs_mount)
ap-south-1b	fsmt-0c59620906f0d2f0d	subnet-05b2613988662102c	🟢 Available	10.0.6.164	eni-093f8577cc3b38e97	sg-0276326b9019eabad (efs_mount)