

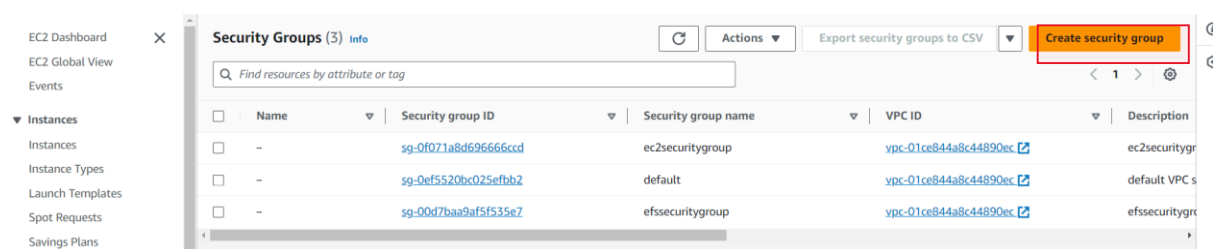
## Day 3 - AWS - EBS ,Snapshot (28/06/2024)

### Elastic file system (efs):

- elastic file system is one of your storage service in aws.
- you can access this Efs with multiple aws resources simultaneously. So you can connect this Efs with multiple Ec 2 instances.
- In EBS scaling not possible .in EFS scaling possible.
- Scaling means we can increase or decrease memory size /vol size.
- if this supports the network file system version 4, that is nfs version 4.1 and Nfs version 4.0 protocol.nfs – protocol.
- how do you create this protocol for Ec, 2. Instance to access your Ec 2. Instance? We need Ssh protocol. So you open up the port Number 22
- wherein for accessing your Efs volume ,they are saying that you need a network file system protocol, which means Nfs protocol has to be open.
- So you create a security group before you create before you launch. Efs, you create a security group with your Nfs protocol and you attach this security group to your Efs volume.

### Create security group for ec2:

1. One for security group for ec2 (ec2securitygroup)
2. Another security group for efs (efs securitygroup)



## Yasmine o/p screen

EC2 > Security Groups > Create security group

### Create security group [Info](#)

A security group acts as a virtual firewall for your instance to control inbound and outbound traffic. To create a new security group, complete the fields below.

**Basic details**

Security group name [Info](#)

Name cannot be edited after creation.

Description [Info](#)

VPC [Info](#)

**Inbound rules** [Info](#)

Type <a href="#">Info</a>	Protocol <a href="#">Info</a>	Port range <a href="#">Info</a>	Source <a href="#">Info</a>	Description - optional <a href="#">Info</a>
Custom TCP ▼	TCP	22	Anyw... ▼	
<input type="text" value="0.0.0.0/0"/> X				
<input type="button" value="Add rule"/>				
<input type="button" value="Delete"/>				

## Click create security group

### 2. Another security group for efs

**Basic details**

Security group name [Info](#)

Name cannot be edited after creation.

Description [Info](#)

VPC [Info](#)

**Inbound rules** [Info](#)

Type <a href="#">Info</a>	Protocol <a href="#">Info</a>	Port range <a href="#">Info</a>	Source <a href="#">Info</a>	Description - optional <a href="#">Info</a>
NFS ▼	TCP	2049	Custom ▼	
<input type="text" value="sg-0f071a8d696666cc"/> X				
<input type="text" value="sg-0f071a8d696666cccd"/> X				

Efs run in NFS protocol .click myec2forfs (s.g name for ec2)

EC2 Dashboard

EC2 Global View

Events

▼ Instances

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Security Groups (3) Info

Find resources by attribute or tag

< 1 >

⚙

<input type="checkbox"/>	Name	Security group ID	Security group name	VPC ID	Description
<input type="checkbox"/>	-	sg-0f071a8d696666ccd	ec2securitygroup	ypc-01ce844a8c44890ec	ec2securitygr
<input type="checkbox"/>	-	sg-0ef5520bc025efbb2	default	ypc-01ce844a8c44890ec	default VPC s
<input type="checkbox"/>	-	sg-00d7baa9af5f535e7	efssecuritygroup	ypc-01ce844a8c44890ec	efssecuritygr

Export security groups to CSV

Create security group

**To launch new instance:**

EC2 > Instances > Launch an instance

Launch an instance

Info

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags

Info

Name

efs vm

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

aws

macOS

Mac

Ubuntu

ubuntu

Windows

Microsoft

Red Hat

Red Hat

SUSE Linux

SUS

Browse more AMIs

Including AMIs from AWS, Marketplace and the Community

▼

Network settings

Info

VPC - required

Info

vpc-01ce844a8c44890ec

(default) ▼

172.31.0.0/16

↻

Subnet

Info

No preference ▼

↻

Create new subnet

↗

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 ▼

↻

Compare security group rules

ec2securitygroup sg-0f071a8d696666ccd ✕

VPC: vpc-01ce844a8c44890ec

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

## Click launch instance

Instances (1)

Info

↻

Connect

Instance state ▼

Actions ▼

Launch instances

▼

Find Instance by attribute or tag (case-sensitive)

All states ▼

< 1 >

⚙

<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4
<input type="checkbox"/>	efs vm	i-0ac64f22fb76887fc	Running	t2.micro	2/2 checks passed	View alarms	ap-south-1a	ec2-3-108-

efs

×

⌵

🔔

Search results for 'efs'

Services (18)

Features (19)

Resources New

Documentation (9,232)

Knowledge Articles (373)

Marketplace (105)

Services

See all 18 results

efs

☆

Managed File Storage for EC2

Top features

File systems Access points

## Elastic File System ×

File systems  
Access points

AWS Backup [↗](#)  
AWS DataSync [↗](#)  
AWS Transfer [↗](#)

Documentation [↗](#)

# Amazon Elastic File System

## Scalable, elastic, cloud-native NFS file system

Amazon Elastic File System (Amazon EFS) provides a simple, scalable, elastic file system for general purpose workloads for use with AWS Cloud services and on-premises resources.

### Create file system

Create an EFS file system with recommended settings.

[Create file system](#)

## Create file system ×

Create an EFS file system with recommended settings. [Learn more](#) [↗](#)

### Name - *optional*

Name your file system.

EFSD014

Name can include letters, numbers, and +-=.\_:/ symbols, up to 256 characters.

### Virtual Private Cloud (VPC)

Choose the VPC where you want EC2 instances to connect to your file system.

vpc-0a2846da1af1ddf8b

default

Cancel

Customize

Create

Click customize ,below settings available .total 4 steps

## Step 1:

☒ **Regional**  
Offers the highest levels of availability and durability by storing file system data across multiple Availability Zones within an AWS Region.

☐ **One Zone**  
Provides continuous availability to data within a single Availability Zone within an AWS Region.

**Automatic backups**  
Automatically backup your file system data with AWS Backup using recommended settings. Additional pricing applies. [Learn more](#)

☒ **Enable automatic backups**

**Lifecycle management**  
Automatically save money as access patterns change by moving files into the Infrequent Access (IA) or Archive storage class. [Learn more](#)

**Transition into Infrequent Access (IA)**  
Transition files to IA based on the time since they were last accessed in Standard storage.  

30 day(s) since last access ▼

**Transition into Archive**  
Transition files to Archive based on the time since they were last accessed in Standard storage.  

90 day(s) since last access ▼

⊗ Throughput mode must be Elastic.

**Transition into Standard**  
Transition files back to Standard storage based on when they are first accessed in IA or Archive storage.  

None ▼

**Encryption**  
Choose to enable encryption of your file system's data at rest. Uses the AWS KMS service key (aws/elasticfilesystem) by default. [Learn more](#)

☐ **Enable encryption of data at rest**

**Automatic backups**  
Automatically backup your file system data with AWS Backup using recommended settings. Additional pricing applies. [Learn more](#)

☐ **Enable automatic backups**

⚠ We recommend that you create a backup policy for your file system

**Lifecycle management**  
Automatically save money as access patterns change by moving files into the Infrequent Access (IA) or Archive storage class. [Learn more](#)

**Transition into Infrequent Access (IA)**  
Transition files to IA based on the time since they were last accessed in Standard storage.  

30 day(s) since last access ▼

**Transition into Archive**  
Transition files to Archive based on the time since they were last accessed in Standard storage.  

None ▼

**Transition into Standard**  
Transition files back to Standard storage based on when they are first accessed in IA or Archive storage.  

None ▼

Bursting is free so we select this

### Performance settings

**Throughput mode**  
Choose a method for your file system's throughput limits. [Learn more](#)

☐ **Enhanced**  
Provides more flexibility and higher throughput levels for workloads with a range of performance requirements.

☒ **Bursting**  
Provides throughput that scales with the amount of storage for workloads with basic performance requirements.

▼ **Additional settings**

**Performance mode**  
Set your file system's performance mode based on IOPS required. [Learn more](#)

☒ **General Purpose (Recommended)**  
Ideal for a variety of diverse workloads, including high performance and latency-sensitive applications

☐ **Max I/O**  
Designed for highly parallelized workloads that can tolerate higher latencies

► **Tags optional**

Cancel Next

## Step 2:

Amazon EFS > File systems > Create

Step 1  
File system settings

Step 2  
**Network access**

Step 3 - optional  
File system policy

Step 4  
Review and create

### Network access

**Network**

Virtual Private Cloud (VPC) [Learn more](#)  
Choose the VPC where you want EC2 instances to connect to your file system.

vpc-0a2846da1af1ddf8b  
default

**Mount targets**

**Delete all default security group add our created security group. Click next**

Step 3 - optional  
File system policy

Step 4  
Review and create

**Virtual Private Cloud (VPC)** [Learn more](#)  
Choose the VPC where you want EC2 instances to connect to your file system.

vpc-01ce844a8c44890ec  
default

**Mount targets**

A mount target provides an NFSv4 endpoint at which you can mount an Amazon EFS file system. We recommend creating one mount target per Availability Zone. [Learn more](#)

Availability zone	Subnet ID	IP address	Security groups	
ap-south-1a	subnet-0c4b81f9c...	Automatic	Choose security gro... sg-00d7baa9af5f535e7 efssecuritygroup	Remove
ap-south-1b	subnet-01dd6ce47...	Automatic	Choose security gro... sg-00d7baa9af5f535e7 efssecuritygroup	Remove
ap-south-1c	subnet-0e34c2e16...	Automatic	Choose security gro... sg-00d7baa9af5f535e7 efssecuritygroup	Remove

Add mount target

### Step 3:

Step 1  
File system settings

Step 2  
Network access

Step 3 - optional  
**File system policy**

Step 4  
Review and create

### File system policy - optional

**Policy options**

Select one or more of these common policy options, or create a custom policy using the editor. [Learn more](#)

- ☐ Prevent root access by default\*
- ☐ Enforce read-only access by default\*
- ☐ Prevent anonymous access
- ☐ Enforce in-transit encryption for all clients

\* Identity-based policies can override these default permissions.

► [Grant additional permissions](#)

**Policy editor {JSON}** Clear

1

Manual changes will prevent the use of the policy options on the left until the editor is cleared.

Cancel Previous Next

### Step 4:

No change ..click create f.s.file system created

File system (fs-06ef1607c3fe904a1) is creating.

Amazon EFS > File systems

**File systems (1)** Refresh View details Delete Create file system

Filter by property values

	Name	File system ID	Encrypted	Total size	Size in Standard	Size in IA	Size in Archive	Provisioned Throughput (MiB/s)
<input type="radio"/>	<a href="#">efsfilessystem</a>	<a href="#">fs-06ef1607c3fe904a1</a>	<input checked="" type="checkbox"/> Encrypted	0 Bytes	0 Bytes	0 Bytes	0 Bytes	-

Now f.s created .how to attach this with ec2. 1<sup>st</sup> create access point

Elastic File System

File systems  
[Access points](#)

AWS Backup [AWS DataSync](#) [AWS Transfer](#)

Documentation

Amazon EFS > Access points

**Access points (0)** Refresh View details Delete Create access point

Search access points by name or ID

Name	Access point ID	File system ID	Path	POSIX user	Creation info	State
No resources						

Create access point



## Details

### File system

Choose the file system to which your access point is associated.

fs-0121dbd19dd35571b

### Name - optional

EFS-AP

Name can include letters, numbers, and +-=.\_:/ symbols, up to 256 characters.

### Root directory path - optional

Connections use the specified path as the file system's virtual root directory [Learn more](#)

Defaults to /

Example: "/foo/bar"

POSIX user ID to apply to path

Accepts values from 0 to 4294967295

### Owner group ID

Owner group ID for the access point's root directory, if the directory does not already exist.

POSIX group ID to apply to path

Accepts values from 0 to 4294967295

### Access point permissions

POSIX permissions to apply to the root directory path

Example: "0755"

An octal number representing the file's mode bits.

## Tags - optional

Add tags to associate key-value pairs to your resource. [Learn more](#)

### Tag key

Enter key

### Tag value - optional

Enter value

Remove tag

Add tag

You can add 49 more tag(s)

Cancel

Create access point

## Elastic File System

File systems  
Access points

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Documentation

Success! Access point (fsap-030c07d6f6c94abe4) is available.

View access point

Amazon EFS > Access points

Access points (1)

Refresh

View details

Delete

Create access point

Search access points by name or ID

< 1 >

	Name	Access point ID	File system ID	Path	POSIX user	Creation info	State
	EFS-AP	fsap-030c07d6f6c94abe4	fs-0121dbd1...	/	-	-	Available

Access point created .then go to ec2 attach that efs.click ec2 →connect that ec2

This is amazon linux

<https://docs.aws.amazon.com/efs/latest/ug/installing-amazon-efs-utils.html>

installation step for efs

```
_/m/'
[ec2-user@ip-172-31-39-25 ~]$ sudo yum update
Last metadata expiration check: 0:12:04 ago on Fri Jul 5 14:44:03 2024.
Dependencies resolved.
Nothing to do.
Complete!
[ec2-user@ip-172-31-39-25 ~]$
```

That cmd copy from installation docu.link is above

```
_/m/'
[ec2-user@ip-172-31-39-25 ~]$ sudo yum update
Last metadata expiration check: 0:12:04 ago on Fri Jul 5 14:44:03 2024.
Dependencies resolved.
Nothing to do.
Complete!
[ec2-user@ip-172-31-39-25 ~]$ sudo yum install -y amazon-efs-utils
Last metadata expiration check: 0:13:48 ago on Fri Jul 5 14:44:03 2024.
Dependencies resolved.
=====
Package                                Architecture      Version
=====
Installing:
amazon-efs-utils                       x86_64            2.0.2-1.amzn2023
Installing dependencies:
stunnel                                x86_64            5.58-1.amzn2023.0.2
=====
```

Efs connected with ec2 via access point

1. Create mount point then attach it to efs volume
2. Copy that cmd in vi editor

<https://docs.aws.amazon.com/efs/latest/ug/automount-with-efs-mount-helper.html>

below cmd available in that link

- To automatically mount a file system using an EFS access point, add the following line to the `/etc/fstab` file.

```
file-system-id:/ efs-mount-point efs _netdev,noresvport,tls
```

```
[ec2-user@ip-172-31-6-47 image]$ sudo vi /etc/fstab
```

i-0c40b326e9fb32644 (demo-efs)

PublicIPs: 13.233.151.30 PrivateIPs: 172.31.6.47

Get file system id and access point that we created .give init.give mountpoint also

### 1. file system id

```
#
UUID=05e00135-ca0b-48fe-9205-36fc6b4f82a7 / xfs defaults,noatime 1 1
UUID=6725-1E34 /boot/efi vfat defaults,noatime,uid=0,gid=0,umask=0077,shortname=winnt,x-systemd.automount 0 2
file-system-id: efs-mount-point efs _netdev,noresvport,tls,iam,accesspoint=access-point-id 0 0
```

Search efs → get into that → already created file system → file system id available  
.copy and paste it in vi editor

[Amazon EFS](#) > [File systems](#) > fs-0121dbd19dd35571b

EFSD014 (fs-0121dbd19dd35571b)

```
#
UUID=36d29e5b-3776-49ee-a4d6-5868c3a57848 / xfs defaults,noatime 1 1
UUID=BE57-6C57 /boot/efi vfat defaults,noatime,uid=0,gid=0,umask=0077,shortname=winnt,x-systemd.automount 0 2
fs-06ef1607c3fe904a1:/ /home/ec2-user/myefsvolume efs _netdev,noresvport,tls,accesspoint=fsap-0cda3a6edf3e4a919 0 0
```

### 2. access point id:

click create access point .give name and all

## Create access point

An access point is an application-specific entry point into an EFS file system that makes it easier to manage application access to shared datasets. [Learn more](#)

### Details

#### File system

Choose the file system to which your access point is associated.

fs-06ef1607c3fe904a1

#### Name - optional

efsaccesspoint

Name can include letters, numbers, and +-=.\_:/ symbols, up to 256 characters.

#### Root directory path - optional

Connections use the specified path as the file system's virtual root directory [Learn more](#)

Defaults to /

Example: "/foo/bar"

### Access points (1)

Search access points by name or ID

Name	Access point ID	File system ID	Path	POSIX user	Creation info	State
efsaccesspoint	fsap-0cda3a6edf3e4a919	fs-06ef1607c3...	/	-	-	Available

### Elastic File System

File systems  
Access points

AWS Backup  
AWS DataSync  
AWS Transfer

Documentation

efsaccesspoint (fsap-0cda3a6edf3e4a919)

Delete

Attach

### Details

#### File system ID

fs-06ef1607c3fe904a1

#### Root directory path

/

#### State

Available

#### POSIX user

User ID

-

Group ID

-

Secondary group IDs

-

#### Root directory creation permissions

Owner user ID

-

Owner group ID

-

Permissions

-

```
#
UUID=36d29e5b-3776-49ee-a4d6-5868c3a57848 / xfs defaults,noatime 1 1
UUID=BE57-6C57 /boot/efi vfat defaults,noatime,uid=0,gid=0,umask=0077,shortname=winnt,x-systemd.automount 0 2
fs-06ef1607c3fe904a1: /home/ec2-user/myefsvolume efs_netdev,noresvport,tls,accesspoint=fsap-0cda3a6edf3e4a919 0 0
```

### 3. mountpoint: duplicate the tab check the m.p (/home /)

```
~/m/'
Last login: Fri Jul  5 14:55:49 2024 from 13.233.177.4
[ec2-user@ip-172-31-39-25 ~]$ mkdir myefsvolume
[ec2-user@ip-172-31-39-25 ~]$ cd myefsvolume/
[ec2-user@ip-172-31-39-25 myefsvolume]$ pwd
/home/ec2-user/myefsvolume
[ec2-user@ip-172-31-39-25 myefsvolume]$ ^C
[ec2-user@ip-172-31-39-25 myefsvolume]$
```

### Remove iam

```
#
UUID=05e00135-ca0b-48fe-9205-36fc6b4f82a7 / xfs defaults,noatime 1 1
UUID=6725-1E34 /boot/efi vfat defaults,noatime,uid=0,gid=0,umask=0077,shortname=winnt,x-systemd.automount 0 2
fs-0121dbd19dd35571b:/home/ec2-user/image efs _netdev,noresvport,tls,iam,accesspoint=fsap-030c07d6f6c94abe4 0 0
```

```
#
UUID=05e00135-ca0b-48fe-9205-36fc6b4f82a7 / xfs defaults,noatime 1 1
UUID=6725-1E34 /boot/efi vfat defaults,noatime,uid=0,gid=0,umask=0077,shortname=winnt,x-systemd.automount 0 2
fs-0121dbd19dd35571b:/home/ec2-user/image efs _netdev,noresvport,tls,accesspoint=fsap-030c07d6f6c94abe4 0 0
```

### My output file:

```
#
UUID=36d29e5b-3776-49ee-a4d6-5868c3a57848 / xfs defaults,noatime 1 1
UUID=BE57-6C57 /boot/efi vfat defaults,noatime,uid=0,gid=0,umask=0077,shortname=winnt,x-systemd.automount 0 2
fs-06ef1607c3fe904a1:/efs-mount-point efs _netdev,noresvport,tls,accesspoint=fsap-0cda3a6edf3e4a919 0 0
```

```
#
UUID=36d29e5b-3776-49ee-a4d6-5868c3a57848 / xfs defaults,noatime 1 1
UUID=BE57-6C57 /boot/efi vfat defaults,noatime,uid=0,gid=0,umask=0077,shortname=winnt,x-systemd.automount 0 2
fs-06ef1607c3fe904a1:/home/ec2-user/myefsvolume efs _netdev,noresvport,tls,accesspoint=fsap-0cda3a6edf3e4a919 0 0
```

```
[ec2-user@ip-172-31-39-25 ~]$ sudo mount -fav
/ : ignored
/boot/efi : already mounted
/home/ec2-user/myefsvolume: successfully mounted
[ec2-user@ip-172-31-39-25 ~]$
```

Df-h cmd used for check the what are all drive attached efs vol mounted in that particular path

```
[ec2-user@ip-172-31-39-25 ~]$ 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  504K   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
127.0.0.1:/      8.0E   0    8.0E   0% /home/ec2-user/myefsvolume
[ec2-user@ip-172-31-39-25 ~]$
```