



Hands-on Creating and mounting an EFS Volume

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Creating and mounting an EFS Volume

Step 1: Launch an EC2 Ubuntu or an Amazon Linux instance to attach the EFS volume

Instance summary for i-0706cd64232bc3f18 (efs-vm) [Info](#)

Updated less than a minute ago

Instance ID

i-0706cd64232bc3f18 (efs-vm)

Instance state

Running

Instance type

t2.micro

AWS Compute Optimizer finding

Opt-in to AWS Compute Optimizer for recommendations. | [Learn more](#)

Public IPv4 address

[open address](#)

Public IPv4 DNS

[open address](#)

Elastic IP addresses

–

IAM Role

–

Private IPv4 addresses

[open address](#)

Private IPv4 DNS

[open address](#)

VPC ID

[vpc-5501a928](#)

Subnet ID

[subnet-1b1e3156](#)

Note: Make sure to set up your EC2 instances security group accordingly. Either allow All TCP traffic or allow NFS.

- This is for NFS port alone:

Inbound rules

Outbound rules

Tags

Inbound rules (3)

Edit inbound rules

Type	Protocol	Port range	Source	Description - optional
SSH	TCP	22	0.0.0.0/0	–
NFS	TCP	2049	0.0.0.0/0	–
NFS	TCP	2049	::/0	–

- This is for All TCP traffic:

Inbound rules

Outbound rules

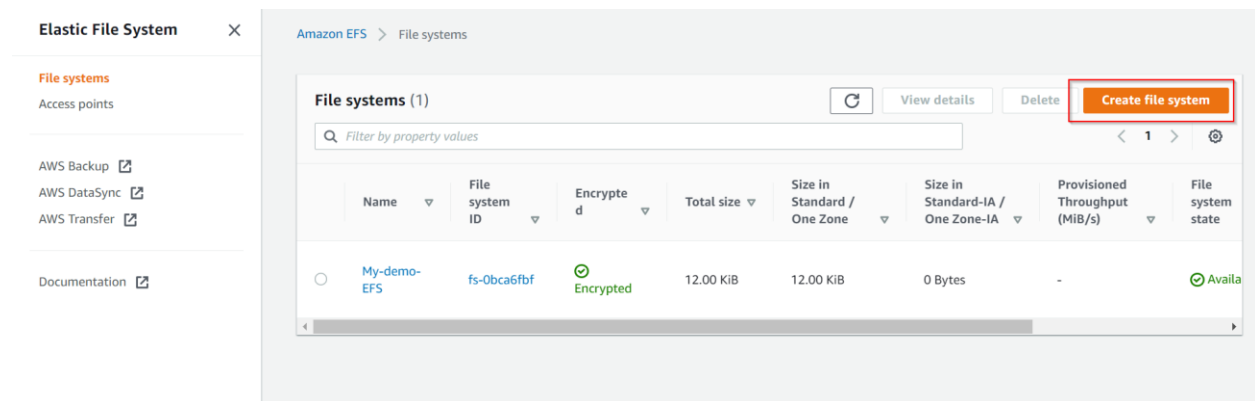
Tags

Inbound rules (3)

Edit inbound rules

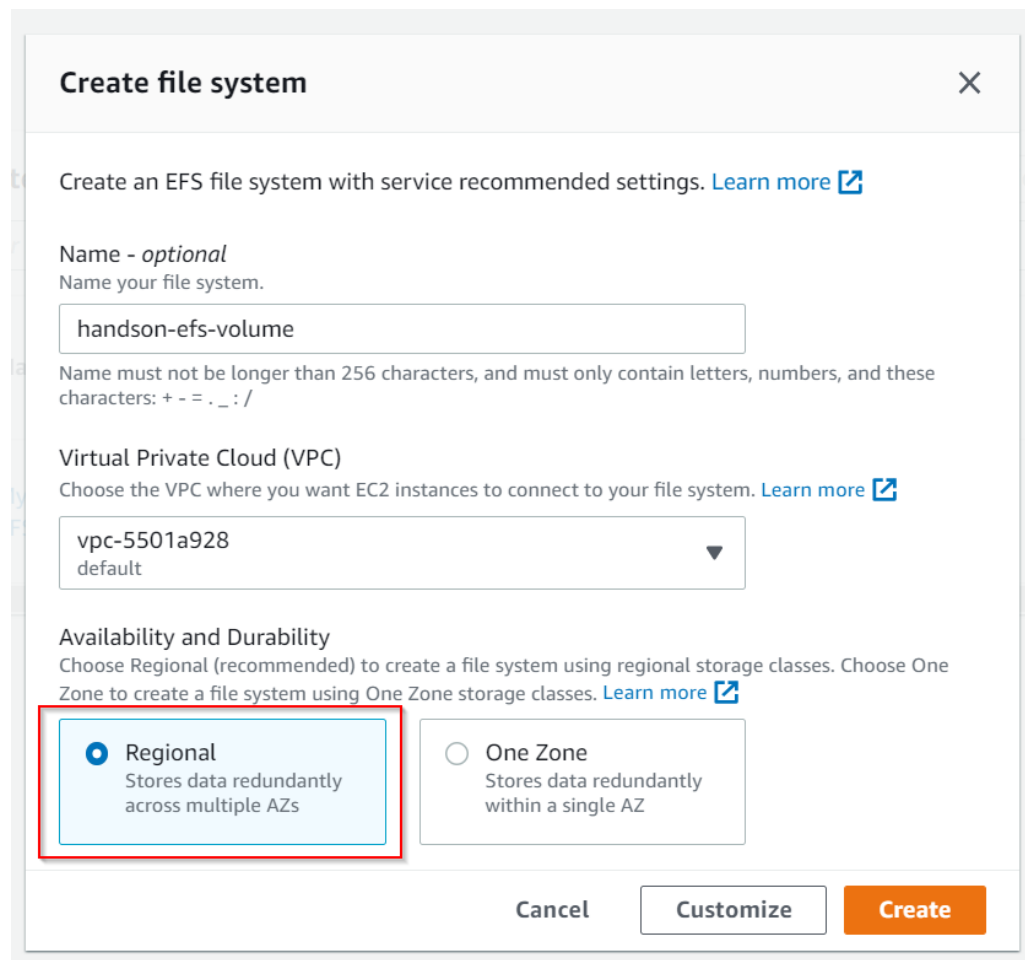
Type	Protocol	Port range	Source	Description - optional
All TCP	TCP	0 - 65535	0.0.0.0/0	–
All TCP	TCP	0 - 65535	::/0	–
SSH	TCP	22	0.0.0.0/0	–

Step 2: Click on Create File System in the EFS console to start the process.



Step 3: Then proceed to provide it a Name which is optional but would be easier to identify. Leave the VPC as default. Finally, choose between Regional or One-zone.

- **Regional** will let you connect with EC2 instances across multiple availability zones.



The screenshot shows the 'Create file system' dialog box. It has a title bar with a close button. The main content area includes instructions to create an EFS file system with service recommended settings. There are three sections: 'Name - optional' with a text input field containing 'handson-efs-volume'; 'Virtual Private Cloud (VPC)' with a dropdown menu showing 'vpc-5501a928 default'; and 'Availability and Durability' with two radio button options. The 'Regional' option is selected and highlighted with a red box. The 'One Zone' option is also visible. At the bottom, there are three buttons: 'Cancel', 'Customize', and 'Create'.

Create file system

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

Name - optional
Name your file system.
handson-efs-volume
Name must not be longer than 256 characters, and must only contain letters, numbers, and these characters: + - = . _ : /

Virtual Private Cloud (VPC)
Choose the VPC where you want EC2 instances to connect to your file system. [Learn more](#)
vpc-5501a928 default

Availability and Durability
Choose Regional (recommended) to create a file system using regional storage classes. Choose One Zone to create a file system using One Zone storage classes. [Learn more](#)

☒ **Regional**
Stores data redundantly across multiple AZs

☐ **One Zone**
Stores data redundantly within a single AZ

Cancel Customize Create

- **One Zone** will let you create a Volume which is only available in one availability zone in the region. Your EC2 instance should be of the same region as the EFS volume for this to work.

Availability and Durability

Choose Regional (recommended) to create a file system using regional storage classes. Choose One Zone to create a file system using One Zone storage classes. [Learn more](#)

☐ **Regional**
Stores data redundantly across multiple AZs

☒ **One Zone**
Stores data redundantly within a single AZ

Availability Zone
Choose the Availability Zone where you want to create your file system

us-east-1a

- Choose between Regional or One Zone and click the create button. In this hands-on, we are choosing Regional.

Network							Manage
Availability zone ▲	Mount target ID ▼	Subnet ID ▼	Mount target state ▼	IP address ▼	Network interface ID ▼	Security groups ▼	
us-east-1a	fsmt-bb55e20e	subnet-1b1e3156	Available	172.31.21.16	eni-01ad590309c26f695	sg-02d2870f (default)	
us-east-1b	fsmt-a455e211	subnet-df811980	Available	172.31.45.24	eni-0538118565cb7e6e3	sg-02d2870f (default)	
us-east-1c	fsmt-a555e210	subnet-32f46b54	Available	172.31.5.12	eni-0fc0d29f01f18ff03	sg-02d2870f (default)	
us-east-1d	fsmt-a755e212	subnet-0377ed22	Available	172.31.94.38	eni-03e7b00627f5d19b7	sg-02d2870f (default)	
us-east-1e	fsmt-a155e214	subnet-3c48eb0d	Available	172.31.54.27	eni-03d6de9267d679eb3	sg-02d2870f (default)	
us-east-1f	fsmt-a055e215	subnet-06530208	Available	172.31.70.26	eni-06cf029f00992581f	sg-02d2870f (default)	

Step 4: The volume has been created. Now we can start with the mounting process. Open your EC2 instance first and follow the steps to install the required client which supports EFS.

Note: Here are the required commands for both Ubuntu EC2 instance and Amazon Linux EC2 instance.

For Ubuntu instance:

```
$ sudo apt-get update
```

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

```
$ mkdir efs
```

For Linux and Redhat AMIs:

```
$ sudo yum update -y
```

```
$ sudo yum install amazon-efs-utils -y
```

```
$ mkdir efs
```

In this hands-on, the instance used is an Ubuntu instance and because of that we will be using the commands from the Ubuntu section. If you are running an Amazon Linux instance, just substitute the command which is provided for Linux instances.

Mounting process steps:

- First, update your EC2 instance if not updated before using this below command:
 - **sudo apt-get update**

```
ubuntu@ip-172-31-30-221:~$ sudo apt-get update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports InRelease [101 kB]
Get:4 http://security.ubuntu.com/ubuntu focal-security InRelease [109 kB]
```

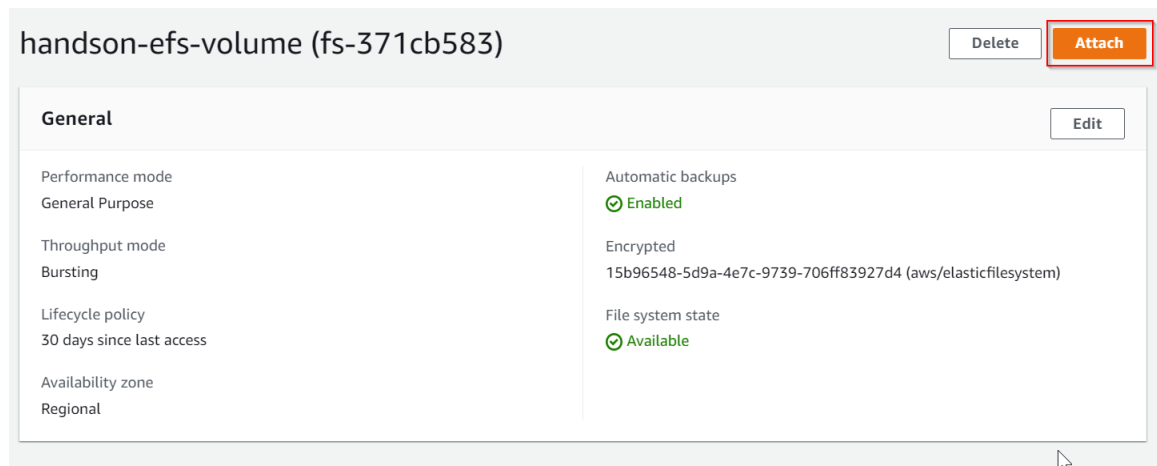
- Then install the NFS client using the below command:
 - **sudo apt-get install nfs-common -y**

```
ubuntu@ip-172-31-30-221:~$ sudo apt-get install nfs-common -y
Reading package lists... Done
Building dependency tree
Reading state information... Done
```

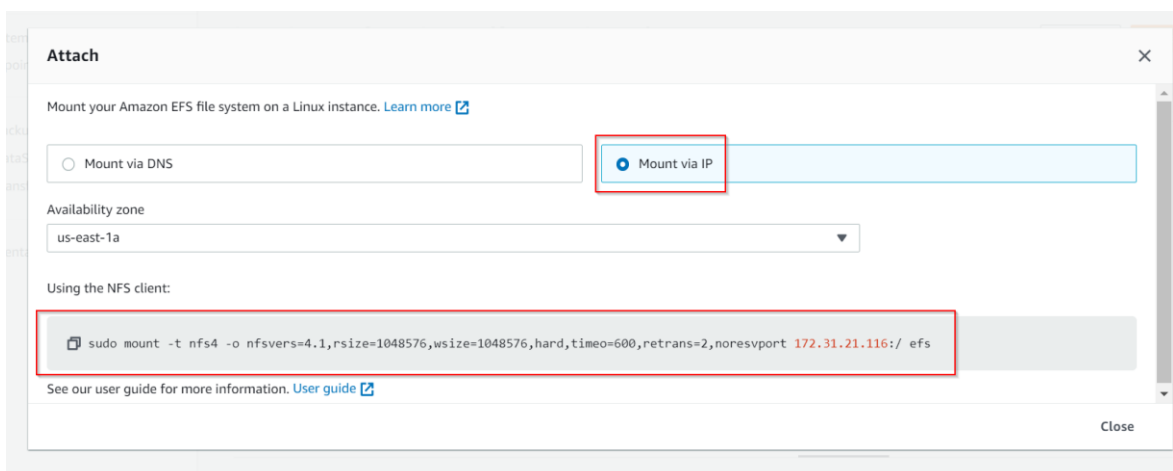
- Create a folder named “efs” in the current directory.
 - **sudo mkdir efs**

```
ubuntu@ip-172-31-28-201:~$ sudo mkdir efs
ubuntu@ip-172-31-28-201:~$ ls
efs
ubuntu@ip-172-31-28-201:~$ █
```

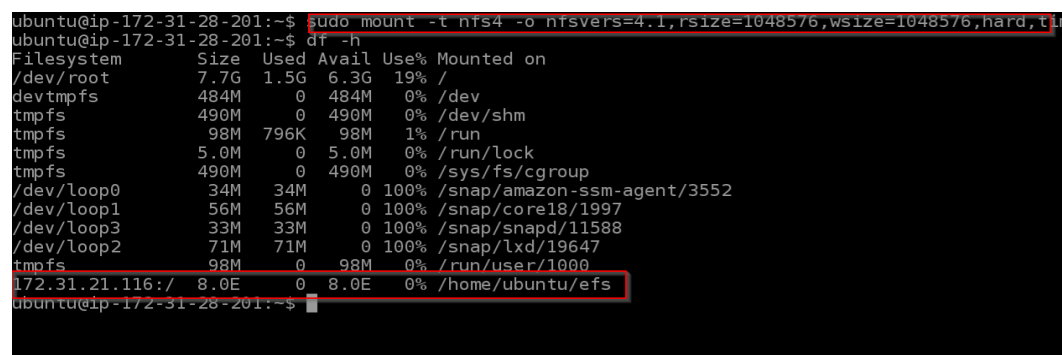
- Then open EFS and select your volume. Click on the Attach button at the top.



- Choose Mount via IP option and copy the given command. It will be the same command for both Linux and Ubuntu instances.



- Run the given command in your EC2 instance to mount your EFS volume to the “efs” directory. Once mounted, you can check it with this command – **df -h**



Step 5: Let's test and check if the volume is successfully mounted by creating files within the mounted directory and then unmounting the volume. If the file is not present in the directory, that means we have successfully created a file inside the volume and also unmounted the volume.

```
ubuntu@ip-172-31-28-201:~$ ls
efs
ubuntu@ip-172-31-28-201:~$ cd efs
ubuntu@ip-172-31-28-201:~/efs$ touch 1.txt
touch: cannot touch '1.txt': Permission denied
ubuntu@ip-172-31-28-201:~/efs$ sudo touch 1.txt
ubuntu@ip-172-31-28-201:~/efs$ ls
1.txt
ubuntu@ip-172-31-28-201:~/efs$
```

In the below image, you will see we use **sudo umount efs** to unmount the volume. Then when we see inside the directory, the file is not there. This is because the file is inside the EFS volume.

```
ubuntu@ip-172-31-28-201:~/efs$ sudo touch 1.txt
ubuntu@ip-172-31-28-201:~/efs$ ls
1.txt
ubuntu@ip-172-31-28-201:~/efs$ cd ..
ubuntu@ip-172-31-28-201:~$ umount efs
umount: /home/ubuntu/efs: umount failed: Operation not permitted.
ubuntu@ip-172-31-28-201:~$ sudo umount efs
ubuntu@ip-172-31-28-201:~$ cd efs
ubuntu@ip-172-31-28-201:~/efs$ ls
ubuntu@ip-172-31-28-201:~/efs$
```

We have successfully completed the EFS creation and mounting!