

# SETTING UP A SCALABLE FILE STORAGE SYSTEM USING AMAZON ELASTIC FILE SYSTEM

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## AIM

To setting up a scalable file storage system using Amazon Elastic File System (EFS) for two EC2 instances in different availability zones.

## PROBLEM STATEMENT

This experiment demonstrates how to configure Amazon EFS to provide a shared storage solution for two Linux EC2 instances across different availability zones, enabling easy data sharing. The aim is to ensure both instances can mount and access the EFS file system and validate data consistency across instances.

## ALGORITHM

Step 1: Create two EC2 instances in different availability zones. Step 2: Set up a security group that allows necessary communication between the instances and EFS. Step 3: Create an EFS file system and mount it to both EC2 instances. Step 4: Ensure that the EC2 instances can access the file system and share data between them.

## COMMANDS

### EC2 Instance 1

```
sudo su
yum install httpd -y
yum install -y amazon-efs-utils
mount -t efs -o tls fs-064645ac116a12816:/ /var/www/html
cd /var/www/html
vi file # Create a file and add some text
```



### EC2 Instance 2

```
sudo su
yum install httpd -y
yum install -y amazon-efs-utils
mount -t efs -o tls fs-064645ac116a12816:/ /var/www/html
cd /var/www/html
ls
cat file
```



## OUTPUT

Amazon EFS - File system configuration

eu-north-1.console.aws.amazon.com/efs/home?region=eu-north-1#/file-systems/fs-0e94c5b3b20675f54

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### Elastic File System

File systems  
Access points

AWS Backup  
AWS DataSync  
AWS Transfer

Documentation

## ZZ (fs-0e94c5b3b20675f54)

Delete Attach

#### General

Edit

Performance mode  
General Purpose

Throughput mode  
Elastic

Lifecycle management  
Transition into Infrequent Access (IA): 30 day(s) since last access  
Transition into Archive: 90 day(s) since last access  
Transition into Standard: None

Availability zone  
Regional

Automatic backups  
Disabled

Encrypted  
No

File system state  
Available

DNS name  
fs-0e94c5b3b20675f54.efs.eu-north-1.amazonaws.com

Replication overwrite protection  
Enabled

Metered size Monitoring Tags File system policy Access points Network Replication

CloudShell Feedback

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EC2 Instance Connect | eu-north-1

eu-north-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-05e049f7cb615fa54&osUser=ec2-user&region=eu-north-1&sshPort=22#

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```
Complete!
[root@ip-172-31-20-165 ec2-user]# mount -t efs -o tls fs-0e94c5b3b20675f54:/ /var/www/html
Mount attempt 1/3 failed due to timeout after 15 sec, wait 0 sec before next attempt.
Mount attempt 2/3 failed due to timeout after 15 sec, wait 0 sec before next attempt.
b'mount.nfs4: mount system call failed'
[root@ip-172-31-20-165 ec2-user]# mount -t efs -o tls fs-0e94c5b3b20675f54:/ /var/www/html
Mount attempt 1/3 failed due to timeout after 15 sec, wait 0 sec before next attempt.
Mount attempt 2/3 failed due to timeout after 15 sec, wait 0 sec before next attempt.

^~Z
[1]+ Stopped mount -t efs -o tls fs-0e94c5b3b20675f54:/ /var/www/html
[root@ip-172-31-20-165 ec2-user]# mount -t efs -o tls fs-0e94c5b3b20675f54:/ /var/www/html
Mount attempt 1/3 failed due to timeout after 15 sec, wait 0 sec before next attempt.
Mount attempt 2/3 failed due to timeout after 15 sec, wait 0 sec before next attempt.

^~Z
[2]+ Stopped mount -t efs -o tls fs-0e94c5b3b20675f54:/ /var/www/html
[root@ip-172-31-20-165 ec2-user]# yum install -y amazon-efs-utils
Last metadata expiration check: 0:43:53 ago on Fri Sep 6 04:58:46 2024.
Package amazon-efs-utils-2.0.4-1.amzn2023.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-20-165 ec2-user]# mount -t efs -o tls fs-0e94c5b3b20675f54:/ /var/www/html
Mount attempt 1/3 failed due to timeout after 15 sec, wait 0 sec before next attempt.
Mount attempt 2/3 failed due to timeout after 15 sec, wait 0 sec before next attempt.
b'mount.nfs4: Connection timed out'
[root@ip-172-31-20-165 ec2-user]# mount -t efs -o tls fs-0e94c5b3b20675f54:/ /var/www/html
[root@ip-172-31-20-165 ec2-user]#
```

i-05e049f7cb615fa54 (ZAFlinux)

PublicIPs: 51.20.67.254 PrivateIPs: 172.31.20.165

WSH - PIT Video highlight

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EC2 Instance Connect | eu-north-1 | eu-north-1 | +

eu-north-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=eu-north-1&connType=standard&instanceId=i-0a5bc4ee63767f7b2&osUser=ec2-user&sshPort=22#

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```
Last login: Fri Sep 6 05:05:06 2024 from 13.48.4.203
[ec2-user@ip-172-31-45-210 ~]$ yum install -y amazon-efs-utils
Error: This command has to be run with superuser privileges (under the root user on most systems).
[ec2-user@ip-172-31-45-210 ~]$ ^[[200~mount -t efs -o tls fs-0e94c5b3b20675f54:/ /var/www/html
-bash: $'\E[200~mount': command not found
[ec2-user@ip-172-31-45-210 ~]$ mount -t efs -o tls fs-0e94c5b3b20675f54:/ /var/www/html
only root can run mount.efs
[ec2-user@ip-172-31-45-210 ~]$ sudo su
[root@ip-172-31-45-210 ec2-user]# mount -t efs -o tls fs-0e94c5b3b20675f54:/ /var/www/html
Mount attempt 1/3 failed due to timeout after 15 sec, wait 0 sec before next attempt.
Mount attempt 2/3 failed due to timeout after 15 sec, wait 0 sec before next attempt.
^[[z
[!]+ Stopped mount -t efs -o tls fs-0e94c5b3b20675f54:/ /var/www/html
[root@ip-172-31-45-210 ec2-user]# yum install -y amazon-efs-utils
Last metadata expiration check: 0:43:09 ago on Fri Sep 6 04:59:45 2024.
Package amazon-efs-utils-2.0.4-1.amzn2023.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-45-210 ec2-user]# mount -t efs -o tls fs-0e94c5b3b20675f54:/ /var/www/html
Mount attempt 1/3 failed due to timeout after 15 sec, wait 0 sec before next attempt.
Mount attempt 2/3 failed due to timeout after 15 sec, wait 0 sec before next attempt.
b'mount.nfs4: Connection timed out'
[root@ip-172-31-45-210 ec2-user]# mount -t efs -o tls fs-0e94c5b3b20675f54:/ /var/www/html
[root@ip-172-31-45-210 ec2-user]#
```

i-0a5bc4ee63767f7b2 (ZAFREENlinux)

PublicIPs: 13.48.57.238 PrivateIPs: 172.31.45.210

CloudShell Feedback

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Course: 19AI411-Neural N x TTM4: S5-M4-D3-L1-String x Load balancer details | EC2 x EC2 Instance Connect x classic12-159305461.eu-north-1.elb.amazonaws.com/linux.html

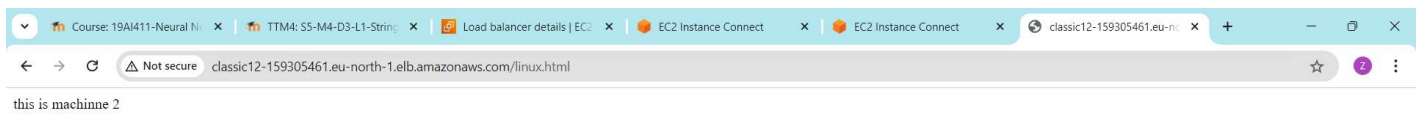
Not secure classic12-159305461.eu-north-1.elb.amazonaws.com/linux.html

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31°C Partly sunny

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## RESULT

Thus, The setting up a scalable file storage system using Amazon Elastic File System (EFS) for two EC2 instances in different availability zones, enabling shared access to data is executed successfully.