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**2KE20CS032**

### **Assignment 45**

*Understood. To follow the provided instructions and create the files/directory using the same name and case as provided in the task steps, please provide me with the specific names and case instructions for the files/directory you want to create.*

**AWS**

## **Assignment: 11 : 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

### **METHOD-01**

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

The screenshot shows the AWS EFS service page. At the top, a green banner displays the message "Success! File system (fs-00fb2f5105c983282) is available." On the right, there is a "View file system" button. Below the banner, the page title is "Amazon EFS > File systems". A header bar includes "File systems (1)" and a "Create file system" button. The main table lists one file system entry:

Name	File system ID	Encrypted	Total size	Size in Standard	Size in IA	Size in Archive	Provisioned Throughput (MiB/s)	File system state	Creation time	Availability Z
amz-efs-01	fs-00fb2f5105c983282	Encrypte d	6.00 KiB	6.00 KiB	0 Bytes	0 Bytes	-	Available	Thu, 07 Dec 2023 02:17:01 GMT	Regi

You need to have specific security groups to perform the mount, follow the document attached with the assignment and configure

## 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)

The screenshot shows the AWS Security Groups list. There is one item in the table:

Name	Security group ID	Security group name	VPC ID	Description
-	sg-07456bc3880288d4b	EFS target	vpc-0e190ca43b317839f	This is a security group for EFS assign...

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

The screenshot shows the 'Create security group' wizard. The 'Basic details' step is selected.

**Basic details**

**Security group name** [Info](#)  
EFS mount  
Name cannot be edited after creation.

**Description** [Info](#)  
This is a security group for EFS mount

**VPC** [Info](#)  
vpc-0e190ca43b317839f (my-vpc-01)

The screenshot shows the 'Outbound rules' configuration screen.

Type <a href="#">Info</a>	Protocol <a href="#">Info</a>	Port range <a href="#">Info</a>	Destination <a href="#">Info</a>	Description - optional <a href="#">Info</a>
NFS	TCP	2049	Custom	sg-07456bc3880288d4b

Add rule

Security Groups (2) <a href="#">Info</a>					
<input type="text"/> Find resources by attribute or tag		<a href="#">Actions</a> ▾		<a href="#">Export security groups to CSV</a>	<a href="#">CSV</a>
<a href="#">EFS</a>	<a href="#">X</a>	<a href="#">Clear filters</a>			
□	Name	▼	Security group ID	▼	Security group name
□	-		<a href="#">sg-04a6b2e370b2e1356</a>		EFS mount
□	-		<a href="#">sg-07456bc3880288d4b</a>		EFS target

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

The screenshot shows the AWS CloudWatch Metrics Insights interface. At the top, there's a search bar with placeholder text "Find metric by attribute or tag (case-sensitive)". Below it is a table with columns: Metric name, Metric namespace, Metric type, and Metric value. One row is selected, showing "AWS/CloudWatchMetrics" as the metric name, "CloudWatchMetrics" as the namespace, "Value" as the type, and "1" as the value.

Metric name	Metric namespace	Metric type	Metric value
AWS/CloudWatchMetrics	CloudWatchMetrics	Value	1

The screenshot shows the AWS CloudWatch Metrics Insights feature. A query has been run, resulting in a single row of data. The data is displayed in a table with columns: Metric name, Metric namespace, Metric type, and Metric value. The row shows "AWS/CloudWatchMetrics" as the metric name, "CloudWatchMetrics" as the namespace, "Value" as the type, and "1" as the value.

Metric name	Metric namespace	Metric type	Metric value
AWS/CloudWatchMetrics	CloudWatchMetrics	Value	1

### 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

Metered size	Monitoring	Tags	File system policy	Access points	<b>Network</b>	Replication
<b>Network</b>						
Availability zone	Mount target ID	Subnet ID	Mount target state	IP address	Network interface ID	Security groups
ap-south-1a	fsmt-0082be0f56f66a315	subnet-01fd6175ad052e506	Available	10.0.85.24	eni-04d30315f4558f9cc	sg-025e3c77b92134dee (default)
ap-south-1b	fsmt-014d8ec91d720db98	subnet-01e1b5812ebecfe9	Available	10.0.4.143	eni-00c9f54f27b6ccfb0	sg-025e3c77b92134dee (default)

## VPC Default group

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**

```
ec2-user@ip-10-0-1-178.ap-south-1.compute.internal:~ (0.162s)

A newer release of "Amazon Linux" is available.
Version 2023.2.20231113:
Run "/usr/bin/dnf check-release-update" for full release and version update info

ec2-user@ip-10-0-1-178.ap-south-1.compute.internal ~ (0.158s)
sudo mkdir efs

ec2-user@ip-10-0-1-178.ap-south-1.compute.internal ~ (0.106s)
cd efs

ec2-user@ip-10-0-1-178.ap-south-1.compute.internal ~/efs (0.185s)
sudo mkdir fs2
```

**cd efs**  
**sudo mkdir fs2**

4. Now, you need to install the amazon efs utils library, which will allow us to run the

```
ec2-user@ip-10-0-1-178.ap-south-1.compute.internal ~/efs (2.719s)
sudo yum install -y amazon-efs-utils

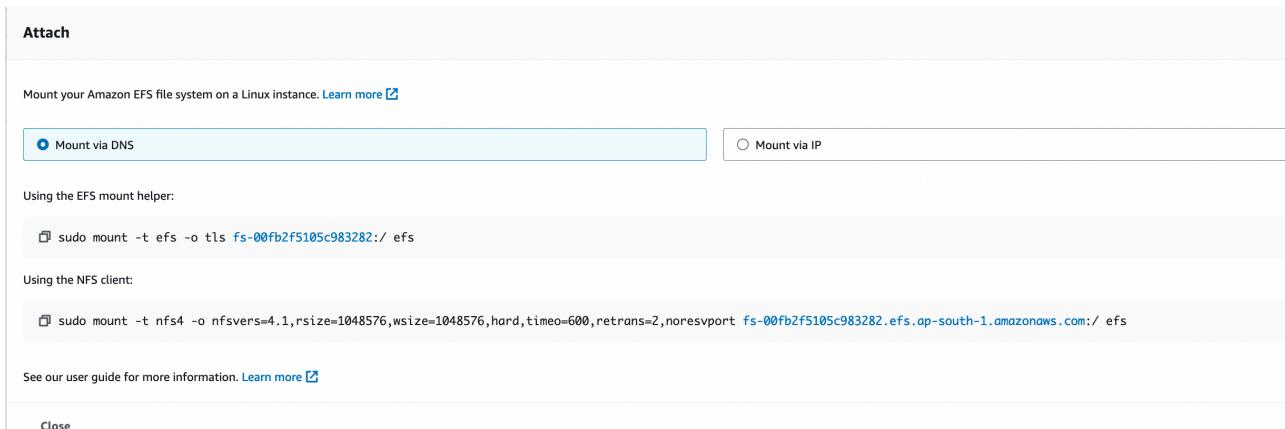
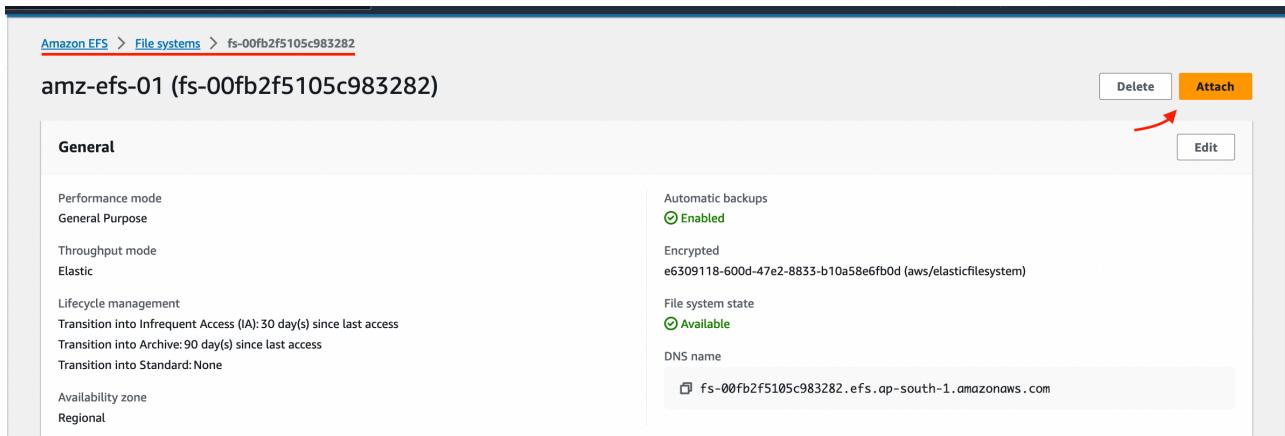
nginx repo
Errors during downloading metadata for repository 'nginx':
- Status code: 404 for http://nginx.org/packages/centos/2023.2.20231030/x86_64/repodata/repomd.xml
Error: Failed to download metadata for repo 'nginx': Cannot download repomd.xml: Cannot
mirrors were tried
Ignoring repositories: nginx
Last metadata expiration check: 0:03:24 ago on Thu Dec 7 02:31:39 2023.
Dependencies resolved.
=====
 Package                               Architecture      Version
=====
Installing:
amazon-efs-utils                      noarch          1.35.0-1.amzn2023
Installing dependencies:
stunnel                                x86_64          5.58-1.amzn2023.0.2

Transaction Summary
```

connection command and mount the EFS. Run the command

sudo yum install -y amazon-efs-utils

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



Now you can mount and enjoy the EFS

```
ec2-user@ip-10-0-1-132.ap-south-1.compute.internal /efs (0.682s)
sudo mount -t efs -o tls fs-0c0f51d2b600d1bdc:/ /efs/fs2
```

```
ec2-user@ip-10-0-1-132.ap-south-1.compute.internal /efs
```

```
ec2-user@ip-10-0-1-132.ap-south-1.compute.internal /efs (0.166s)
```

```
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	188M	2%	/run
/dev/xvda1	8.0G	1.6G	6.4G	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%	/efs
127.0.0.1:/	8.0E	0	8.0E	0%	/efs/fs2

## METHOD-02

1: I have created my new instance for c= test the file system

<input type="checkbox"/>	public-inst(nginx)-1	i-059f3bb15a76aad7d	<span>Stopped</span>	<span>Q Q</span>	t2.micro
<input type="checkbox"/>	private-inst(appserver)-1	i-0e7568659b5b24589	<span>Stopped</span>	<span>Q Q</span>	t2.micro
<input type="checkbox"/>	private-inst(dbserver)	i-0a6d610ce310ab3bf	<span>Stopped</span>	<span>Q Q</span>	t2.micro
<input type="checkbox"/>	private-inst(dbserver)-tire	i-0898c865452d4facf	<span>Stopped</span>	<span>Q Q</span>	t2.micro
<input type="checkbox"/>	<u>efs-server</u>	i-0fce9807752b7fa85	<span>Running</span>	<span>Q Q</span>	t2.micro

2: creating the security group

### Basic details

Security group name [Info](#)

Name cannot be edited after creation.

Description [Info](#)

VPC [Info](#)

### 3: creating the inbound rules

VPC > Security Groups > sg-0fbca66a413fb6b5 - efs-mount > Edit inbound rules

Edit inbound rules [Info](#)

Inbound rules [Info](#)

Security group rule ID Type [Info](#) Protocol [Info](#) Port range [Info](#) Source [Info](#) Description - optional [Info](#)

sgr-06cef6b7fd8ae6aa NFS TCP 2049 Custom   Delete

Add rule This is my instance id

Cancel Preview changes Save rules

Details Security Networking Storage Status checks Monitoring Tags

▼ Security details

IAM Role Owner ID

- 405819896469

Security groups

sg-004e2700a205d766b (launch-wizard-49)

for same security group i have attached

▼ Inbound rules

Filter rules

### 4: network access

Network access

Network

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

vpc-0e190ca43b317839f my-vpc-01

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-01fd6175ad052e506	Automatic	Choose security groups sg-0fbca66a413fb6b5 X efs-mount

Add mount target Cancel Previous Next

## 5: creating the file system

File systems (1)										
<input type="button" value="Create file system"/> View details Delete										
Name	File system ID	Encrypted	Total size	Size in Standard	Size in IA	Size in Archive	Provisioned Throughput (MiB/s)	File system state	Creation time	Activity
efs-server01	<a href="#">fs-0c0f51d2b600d1bdc</a>	Encrypted	6.00 KiB	6.00 KiB	0 Bytes	0 Bytes	-	Available	Sat, 16 Dec 2023 04:35:10 GMT	Re

## 6:login to your instance

```
ec2-user@ip-10-0-1-132.ap-south-1.compute.internal ~ (2.606s)
sudo yum install -y amazon-efs-utils
Last metadata expiration check: 0:13:59 ago on Sat Dec 16 04:22:15 2023.
Dependencies resolved.
=====
 Package           Architecture      Version            Repository
=====
 Installing:
  amazon-efs-utils        noarch        1.35.0-1.amzn2023    amazonlinux
 Installing dependencies:
  stunnel              x86_64        5.58-1.amzn2023.0.2    amazonlinux

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          591 kB/s |  56
(2/2): stunnel-5.58-1.amzn2023.0.2.x86_64.rpm                1.1 MB/s | 156
-----
Total                                         1.0 MB/s | 212

Running transaction check
Transaction check succeeded.
Running transaction test
```

## 7:creating the mount point directory

```
ec2-user@ip-10-0-1-132.ap-south-1.compute.internal ~ (0.15s)
sudo mkdir /efs
```

## 8: mount using if file-system id

```
ec2-user@ip-10-0-1-132.ap-south-1.compute.internal ~ (1.512s)
sudo mount -t efs -o tls fs-0c0f51d2b600d1bdc:/ /efs

ec2-user@ip-10-0-1-132.ap-south-1.compute.internal ~
```

9: verify and enjoy the EFS

```
ec2-user@ip-10-0-1-132.ap-south-1.compute.internal ~ (0.163s)
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 188M   2% /run
/dev/xvda1      8.0G  1.6G 6.4G  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% /efs
```