

Amazon Elastic File System (Amazon EFS) Report

Lab: Introducing Amazon Elastic File System (Amazon EFS)

Objectives

- 10 Access the AWS console, create an EFS file system, and launch an Amazon Linux EC2 instance.
- 10 Connect to the EC2 instance and mount the EFS file system.
- 10 Review and monitor the file system's performance.

Lab Environment Setup

- 10 This lab introduces you to Amazon Elastic File System (Amazon EFS) by using the AWS Management Console.
- 10 A timer-based lab session was started using the “Start Lab” button.
- 10 Pop-up windows were allowed in the browser to open the AWS Management Console in a new tab.
- 10 Resources were named exactly as specified in the instructions to ensure the lab scoring script works properly.

The screenshot shows the AWS Academy lab interface in a web browser. The URL is awsacademy.instructure.com/courses/131613/assignments/1511958?module_item_id=12598718. The page title is "Guided lab: Introducing Amazon Elastic File System (Amazon EFS)".

On the left is a sidebar with navigation links: Account, Dashboard, Courses, Calendar, Inbox, History, and Help. The "Courses" link is highlighted.

The main content area has a header "Guided lab: Introducing Amazon Elastic File System (Amazon EFS)". Below it, there are tabs for "Due", "No Due Date", "Points 15", and "Submitting an external tool". A timer shows "00:00". There are buttons for "Start Lab", "End Lab", "AWS Details", and "Details". A "Submit" button is also visible.

The lab content is titled "Guided Lab: Introducing Amazon Elastic File System (Amazon EFS)". It includes a section "Lab overview and objectives" with the following text:

This lab introduces you to Amazon Elastic File System (Amazon EFS) by using the AWS Management Console.

After completing this lab, you should be able to:

- Log in to the AWS Management Console
- Create an Amazon EFS file system
- Log in to an Amazon Elastic Compute Cloud (Amazon EC2) instance that runs Amazon Linux
- Mount your file system to your EC2 instance
- Examine and monitor the performance of your file system

On the right side, there is a "Submission" section with the following information:

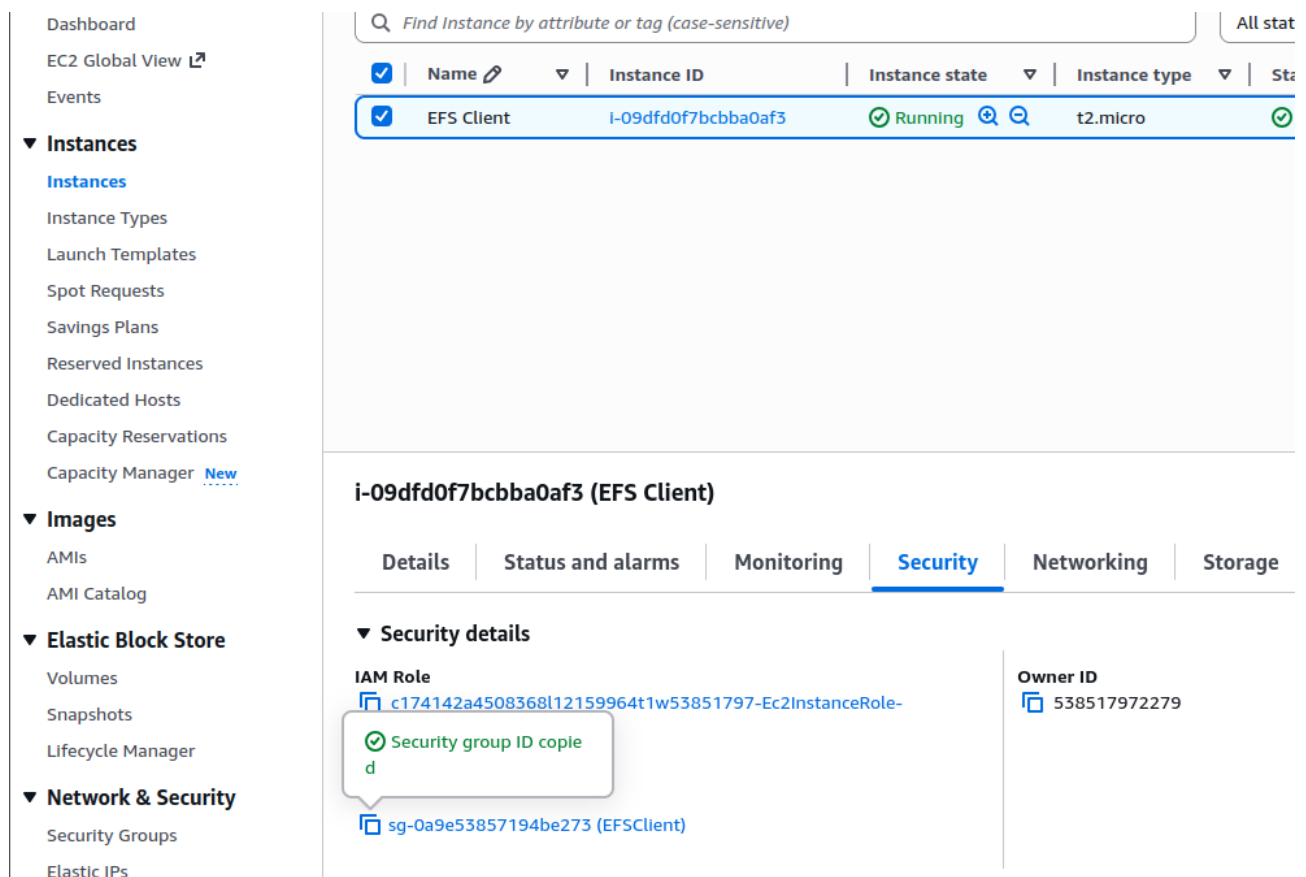
- Oct 28 at 1:41pm
- [Submission Details](#)
- Grade: 5 (15 pts possible)
- Graded Anonymously: no
- Comments: No Comments

At the bottom, there are "Previous" and "Next" navigation buttons.

Task 1: Creating a security group to access your EFS file system

Steps:

1. At the top of the AWS Management Console, in the search box, search for and choose EC2.
2. In the navigation pane on the left, choose **Security Groups**.
3. Copy the **Security group ID** of the *EFSClient* security group to your text editor. The Group ID should look similar to *sg-03727965651b6659b*.



4. Choose **Create security group** then configure:

- ⑩ **Security group name:** EFS Mount Target
- ⑩ **Description:** Inbound NFS access from EFS clients
- ⑩ **VPC:** *Lab VPC*

5. Under the **Inbound rules** section, choose **Add rule** then configure:

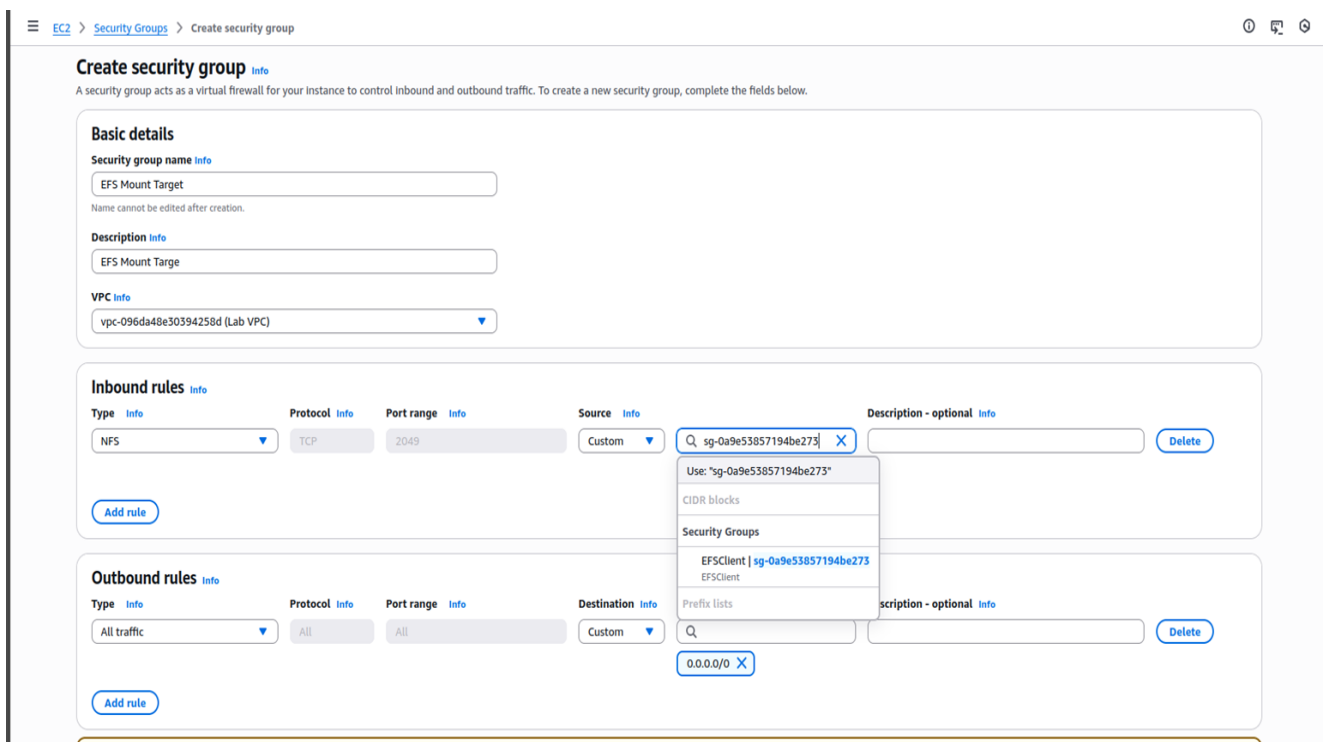
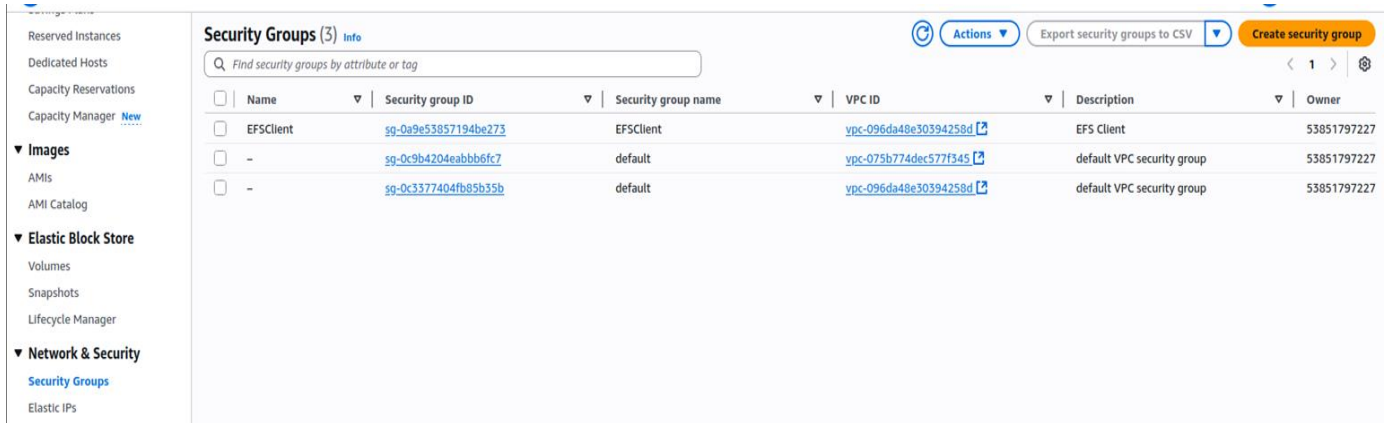
⑩ **Type:** *NFS*

⑩ **Source:**

⑩ *Custom*

⑩ In the *Custom* box, paste the security group's **Security group ID** that you copied to your text editor

⑩ Choose **Create security group**.



Task 2: Creating an EFS file system

Steps:

1. At the top of the AWS Management Console, in the search box, search for and choose EFS.
2. Choose **Create file system**.
3. In the **Create file system** window, choose **Customize**.
4. On **Step 1**:
 - ⑩ Uncheck Enable Automatic backups.
 - ⑩ **Lifecycle management**:
 - ⑩ for **Transition into IA** Select *None*.
 - ⑩ In the **Tags optional** section, configure:
 - ⑩ **Key**: Name
 - ⑩ **Value**: myefs
5. Choose **Next**.
6. For **VPC**, select *Lab VPC*.
7. Detach the default security group from each *Availability Zone* mount target by choosing the check box on each default security group.
8. Attach the **EFS Mount Target** security group to each *Availability Zone* mount target by choosing **EFS Mount Target** for each Availability Zone.
9. Choose **Next**.
10. On **Step 3**, choose **Next**.
11. On **Step 4**:
 - Review your configuration.
 - Choose **Create**.

- Step 2
○ Network access
- Step 3 - optional
○ File system policy
- Step 4
○ Review and create

General

Name - optional

Name your file system.

myefs

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

File system type

Choose to either store data across multiple Availability Zones or within a single Availability Zone. [Learn more](#)

☒ 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

⚠ 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.

90 day(s) since last access

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

☐ Enable encryption of data at rest

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.

☒ Elastic (Recommended)

Use this mode for workloads with unpredictable I/O. With Elastic Throughput, performance automatically scales with your workload activity and you only pay for the throughput you use (data transferred for your file systems per month). [Learn more](#)

☐ Provisioned

Use this mode if you can estimate your workload's throughput requirements. With Provisioned mode, you configure your file system's throughput and pay for throughput provisioned.

Additional settings

Tags optional

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

Tag key

Q Name

X

Use: "myefs"

Q myefs

X

Remove tag

Add tag

You can add 49 more tag(s)

Cancel

Next

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-096da48e30394258d
Lab VPC

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 type	IPv4 address	IPv6 address	Security groups
us-east-1a	subnet-015...	IPv4 only	Optional	-	Choose secur... Remove sg-0b3c3b0df 0110b9b0 EFS Mount Target Show more (+1)
us-east-1b	subnet-00ff...	IPv4 only	Optional	-	Choose secur... Remove sg-0b3c3b0df 0110b9b0 EFS Mount Target

Add mount target

Cancel Previous Next

Amazon EFS > File systems

Elastic File System

File systems
Access points

AWS Backup
AWS DataSync
AWS Transfer
Documentation

Success!
File system (fs-0570cbaed7532b4f) is available. [View file system](#)

File systems (1)

Filter by property values

	Name	File system ID	Encryption	Total size	Size in Standard	Size in IA	Size in Archive	Provisioned Throughput (MiB/s)	File system state	Creation time	Availability Zone
<input type="radio"/>	myefs	fs-0570cbaed7532b4f	Unencrypted	6.00 KiB	6.00 KiB	0 Bytes	0 Bytes	-	Available	Tue, 18 Nov 2025 11:06:49 GMT	Regional

[View details](#) [Delete](#) [Create file system](#)

Task 3: Connecting to your EC2 instance

1. To connect to the **EC2 instance**, from the top of this page, choose **i AWS Details** and copy the value for *InstanceSessionURL*.
2. Paste it into the new browser tab or window to connect to the EC2 instance using AWS Systems Manager Session Manager.

You should now be connected to the instance.

01:50
▶ Start Lab
■ End Lab
ⓘ AWS Details
ⓘ Details
✕

Submit
Submission Report
Grades

ht of the command prompt

efs.

r and choose EFS.

Attach to open the Amazon

sing the **NFS client** section.

=600,retrans=2,noresvport fs-

Cloud Access
Close

AWS CLI: Show

Cloud Labs

Remaining session time: 01:50:33(111 minutes)

Session started at: 2025-11-18T06:07:59-0800

Session to end at: 2025-11-18T08:07:59-0800

Accumulated lab time: 05:24:00 (324 minutes)

ips -- public:52.1.203.163, private:10.0.1.118

SSH key Show Download PEM Download PPK

AWS SSO Download URL

InstanceSessionURL https://us-east-1.console.aws.amazon.com/systems-manager/session-manager/i-0b459763e87d1273e

Task 4: Creating a new directory and mounting the EFS file system

1. In your EC2 terminal session, run the following command to install the required utilities:

```
sudo su -l ec2-user
sudo yum install -y amazon-efs-utils
```

2. Run the following command to create directory for mount: `sudo mkdir efs`.

3. At the top of the AWS Management Console, in the search box, search for and choose EFS.

4. Choose **myefs**.

5. In the **Amazon EFS Console**, on the top right corner of the page, choose **Attach** to open the Amazon EC2 mount instructions.

6. In your EC2 terminal session, Copy and run the entire command in the **Using the NFS client section**.

```
sudo mount -t nfs4 -o
nfsvers=4.1,rsize=1048576,wsiz=1048576,hard,timeo=600,retrans=2,noresvport fs-
bce57914.efs.us-west-2.amazonaws.com:/ efs
```

7. Get a full summary of the available and used disk space usage by entering:

```
sudo df -hT
```

```
Session ID: user4312501-SNEHA_S_SHETTY-4z2gxap4747vbtvaygbileuu Shortcuts Instance ID: i-09df0f7bcbba0af3 Terminate
```

```
sh-5.2$ sudo su -l ec2-user
[ec2-user@ip-10-0-1-52 ~]$ sudo yum install -y amazon-efs-utils
Last metadata expiration check: 0:28:41 ago on Tue Nov 18 10:47:13 2025.
Dependencies resolved.
=====
Package                                Architecture    Version          Repository        Size
=====
Installing:
amazon-efs-utils                       x86_64          2.4.0-1.amzn2023 amazonlinux        4.7 M
Installing dependencies:
stunnel                                x86_64          5.58-1.amzn2023.0.2 amazonlinux        156 k
=====
Transaction Summary
=====
Install 2 Packages

Total download size: 4.9 M
Installed size: 9.9 M
Downloading Packages:
(1/2): stunnel-5.58-1.amzn2023.0.2.x86_64.rpm                                4.1 MB/s | 156 kB  00:00
(2/2): amazon-efs-utils-2.4.0-1.amzn2023.x86_64.rpm                          46 MB/s | 4.7 MB  00:00
-----
Total                                                                           36 MB/s | 4.9 MB  00:00
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing      : 1/1
  Installing     : stunnel-5.58-1.amzn2023.0.2.x86_64 1/2
  Running scriptlet: stunnel-5.58-1.amzn2023.0.2.x86_64 1/2
  Installing     : amazon-efs-utils-2.4.0-1.amzn2023.x86_64 2/2
  Running scriptlet: amazon-efs-utils-2.4.0-1.amzn2023.x86_64 2/2
  Verifying      : amazon-efs-utils-2.4.0-1.amzn2023.x86_64 1/2
  Verifying      : stunnel-5.58-1.amzn2023.0.2.x86_64 2/2

Installed:
amazon-efs-utils-2.4.0-1.amzn2023.x86_64                                stunnel-5.58-1.amzn2023.0.2.x86_64

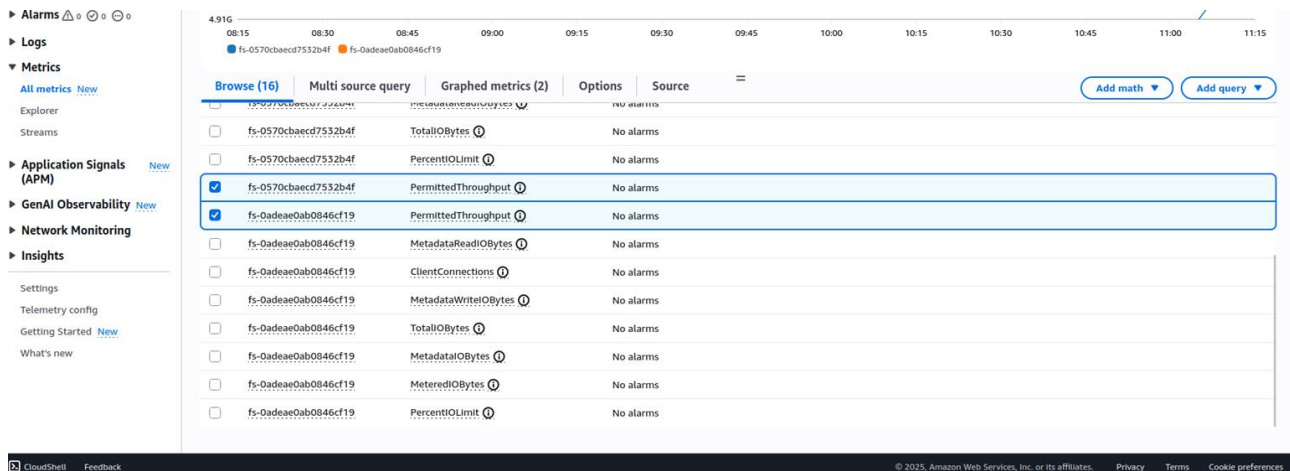
Complete!
[ec2-user@ip-10-0-1-52 ~]$
```

```
[ec2-user@ip-10-0-1-52 ~]$ sudo mkdir efs
[ec2-user@ip-10-0-1-52 ~]$ sudo mount -t efs -o tls fs-0570cbaecd7532b4f:/ efs
[ec2-user@ip-10-0-1-52 ~]$ sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsiz=1048576,hard,timeo=600,retrans=2,noresvport fs-0570cbaecd7532b4f.efs.us-east-1.amazonaws.com:/ efs
[ec2-user@ip-10-0-1-52 ~]$
```

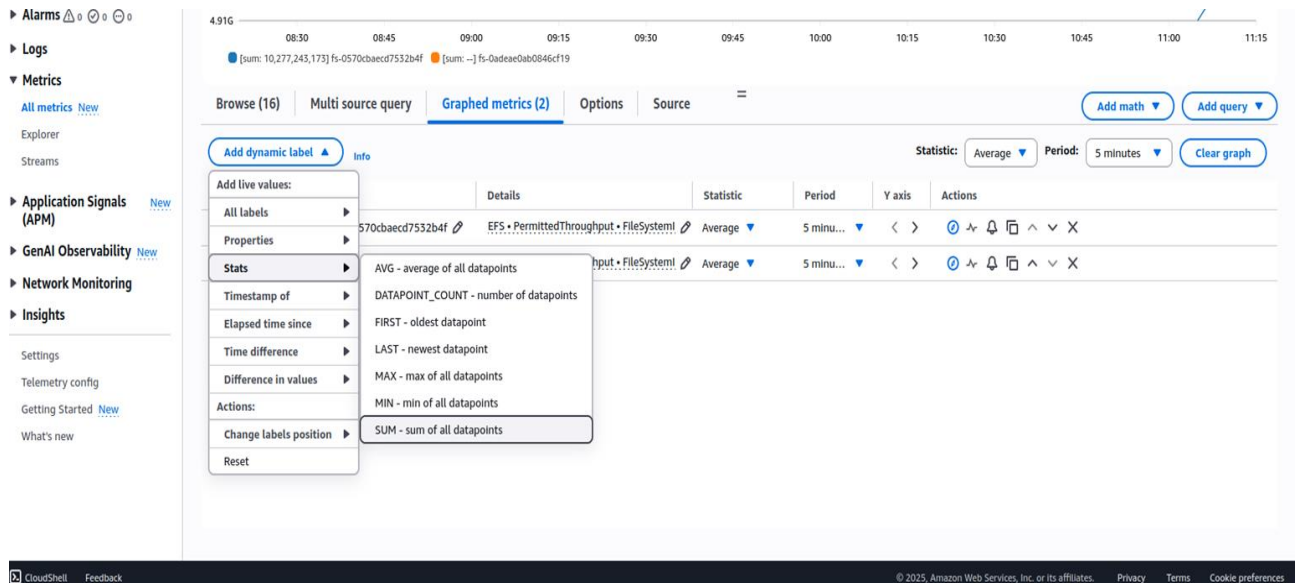
Task 5: Examining the performance behavior of your new EFS file system

Monitoring performance by using Amazon CloudWatch

1. At the top of the AWS Management Console, in the search box, search for and choose CloudWatch.
2. In the navigation pane on the left, choose **All Metrics**.
3. In the **All metrics** tab, choose **EFS**.
4. Choose **File System Metrics**.
5. Select all the options that has the **PermittedThroughput** Metric Name.



6. Choose the **Graphed metrics** tab.
7. On the **Statistics** column, select **Sum**.
8. On the **Period** column, select **1 Minute**.



9. Note the the peak value, which is around 7.6G. Take this number (in bytes) and divide it by the duration in seconds (60 seconds). The result gives you the write throughput (B/s) of your file system during your test.

