LES CLASSES DE STOCKAGE

**1. EBS (Elastic Block Store)**

* **Type**: Stockage de niveau bloc.
* **Usage**: Utilisé principalement avec les instances Amazon EC2, comme un disque dur pour votre ordinateur.

**Exemple**: Imaginez EBS comme un disque dur externe que vous branchez à votre ordinateur pour installer des programmes ou stocker des fichiers.

**2. EFS (Elastic File System)**

* **Type**: Stockage de niveau fichier.
* **Usage**: Peut être utilisé par plusieurs instances EC2 en même temps, comme un espace de stockage partagé.

**Exemple**: Imaginez EFS comme un dossier partagé en réseau dans une entreprise où tous les employés peuvent sauvegarder et accéder à leurs documents.

**3. Amazon FSx**

C'est une famille de systèmes de fichiers gérés.

* **Amazon FSx pour NetApp ONTAP et OpenZFS**: Offrent les fonctionnalités natives de systèmes de fichiers populaires.
* **Amazon FSx pour Windows File Server**: Un système de fichiers Windows natif et géré, compatible avec Active Directory.
* **Amazon FSx pour Lustre**: Conçu pour des calculs de haute performance.

**Exemple**: Une entreprise utilisant principalement des ordinateurs Windows pourrait choisir FSx pour Windows File Server pour avoir un espace de stockage compatible.

**4. S3 (Simple Storage Service)**

* **Type**: Stockage de niveau objet.
* **Usage**: Pour stocker et récupérer de grandes quantités de données, accessible de n'importe où sur le web.

**Exemple**: Imaginez S3 comme un immense album photo en ligne où un photographe stocke toutes ses photos. Plutôt que de les garder sur son ordinateur, il les télécharge sur S3 et peut partager un lien avec ses clients pour qu'ils les voient.

**En résumé**:

* **EBS**: Comme un disque dur externe pour les ordinateurs.
* **EFS**: Comme un dossier partagé en réseau pour une équipe.
* **FSx**: Pour des besoins spécifiques de systèmes de fichiers, comme un espace de stockage compatible Windows.
* **S3**: Comme un immense album photo en ligne ou un espace de stockage pour un site web.

J'espère que cela rend les choses plus claires!

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Let's go through each of the AWS storage solutions:

**1. EBS (Elastic Block Store)**

* **Type**: Block-level storage.
* **Use Case**: EBS is primarily used with Amazon EC2 instances. It's like the hard drive for your computer. You can install operating systems, applications, and databases on it.

**Example**: Imagine you're running a high-performance database. You would want to use EBS to provide the block storage for that database because it offers low latency and fast read/write operations.

**2. EFS (Elastic File System)**

* **Type**: File-level storage.
* **Use Case**: EFS can be used by multiple EC2 instances or AWS services simultaneously, making it suitable for shared storage solutions, content management, and web serving.

**Example**: Think of a team of developers working on a project. They need a common space to store and access their codebase. Instead of each having a copy on their individual machines, they can use EFS to have a centralized repository that they all can access concurrently.

**3. Amazon FSx**

This is a family of fully-managed third-party file systems.

* **Amazon FSx for NetApp ONTAP and OpenZFS**: These offer native capabilities of popular file systems.
* **Amazon FSx for Windows File Server**: This provides a fully managed native Microsoft Windows file system, integrated with Active Directory.
* **Amazon FSx for Lustre**: Designed for high-performance computing, ML, and media data processing workloads.

**Example**: A company that has a Windows-based application and needs a compatible storage solution would opt for FSx for Windows File Server. Similarly, a research institution running complex simulations might opt for FSx for Lustre due to its high-throughput capabilities.

**4. S3 (Simple Storage Service)**

* **Type**: Object-level storage.
* **Use Case**: It's used for backup and recovery, data archiving, big data analytics, static website hosting, and much more. It's highly scalable, durable, and accessible from anywhere on the web.

**Example**: A photographer takes thousands of photos for events. Instead of storing them on a local computer, which might crash or run out of space, he uploads them to S3. This way, he can access the photos from anywhere and share them with clients via web links. Similarly, if a startup wanted to host their website's images and videos, they might use S3 because it can handle large amounts of data and provide URLs for each asset.

**In Summary**:

* **EBS**: Like a hard drive for EC2. Use when you need a persistent block storage for applications, databases, etc.
* **EFS**: Like a shared drive that multiple instances or services can access at once. Use for shared file storage solutions.
* **FSx**: For specific file system needs, such as Windows-compatible storage or high-performance computing tasks.
* **S3**: For storing and retrieving large amounts of data in the form of objects. Useful for backups, web hosting, and much more.

I hope this gives a clearer picture!

<https://k21academy.com/amazon-web-services/difference-between-aws-efs-ebs-and-s3/>

<https://www.msp360.com/resources/blog/amazon-s3-vs-ebs-vs-efs/>

<https://www.youtube.com/watch?v=8S4kplD9MFc> (minute 21.26)

<https://bdrsuite.medium.com/what-are-the-difference-between-ebs-vs-efs-vs-fsx-vs-s3-965832b5f01c>

99.999999999% (11 9’s) of data durability of objects over a given year. This durability level corresponds to an

<https://www.justaftermidnight247.com/insights/ebs-efs-and-s3-when-to-use-awss-three-storage-solutions/>

<https://www.techtarget.com/searchaws/tip/Amazon-FSx-vs-EFS-Compare-the-AWS-file-services>

<https://docs.aws.amazon.com/fr_fr/efs/latest/ug/whatisefs.html>