aws

Amazon S3 Glacier

At the core of the lesson

You will learn how to define Amazon Simple Storage Service Glacier (Amazon S3 Glacier), what its key data model concepts are, and how to access it.

What is Amazon S3 Glacier?

Amazon S3 Glacier

Amazon S3 Glacier is a storage service purpose-built for data archiving. It provides high performance, flexible retrieval, and low-cost archive storage in the cloud.

Amazon S3 Glacier storage classes

S3 Glacier Instant Retrieval

Delivers the low-cost storage for long-lived data that is rarely accessed and requires retrieval in milliseconds
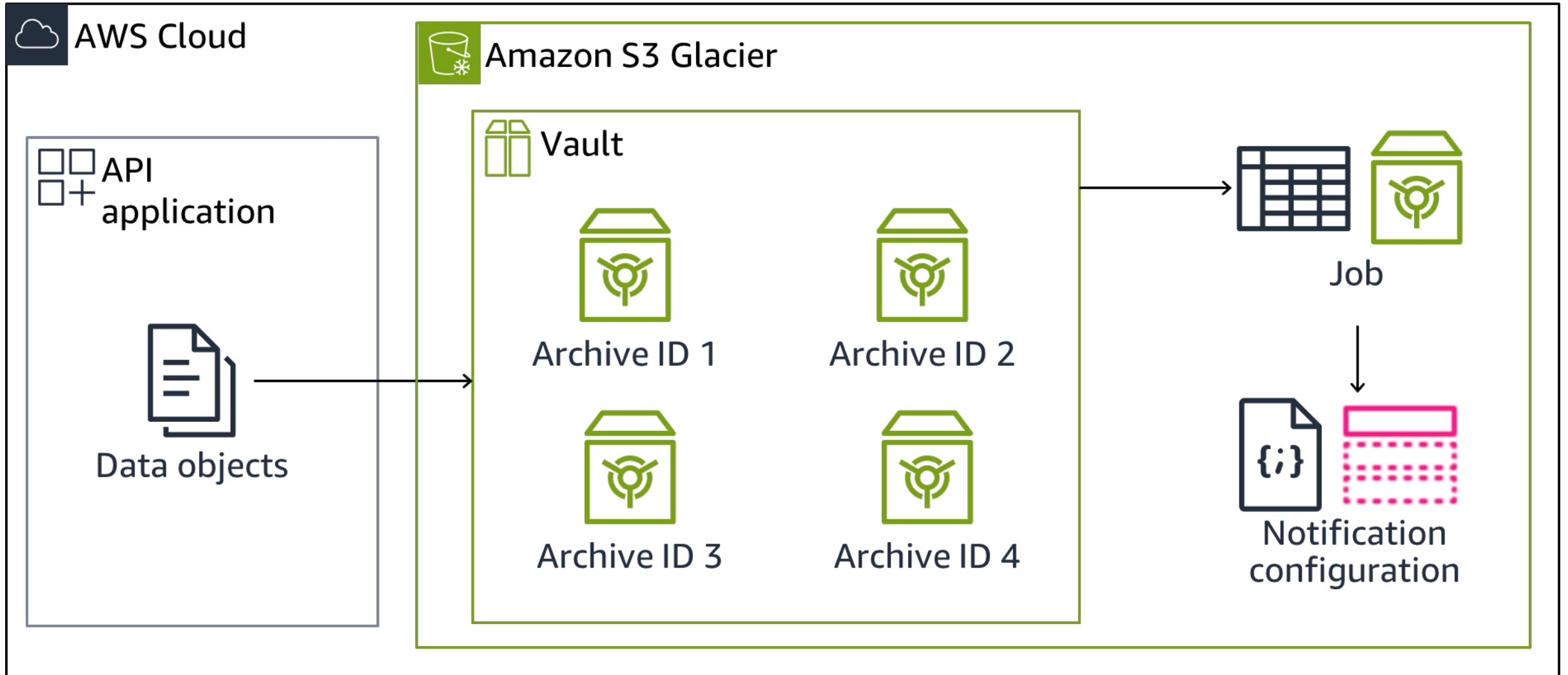
S3 Glacier Flexible Retrieval

Delivers low-cost storage for archive data that is accessed 1–2 times per year and is retrieved asynchronously

S3 Glacier Deep Archive

Supports long-term retention and digital preservation for data that may be accessed 1–2 times per year

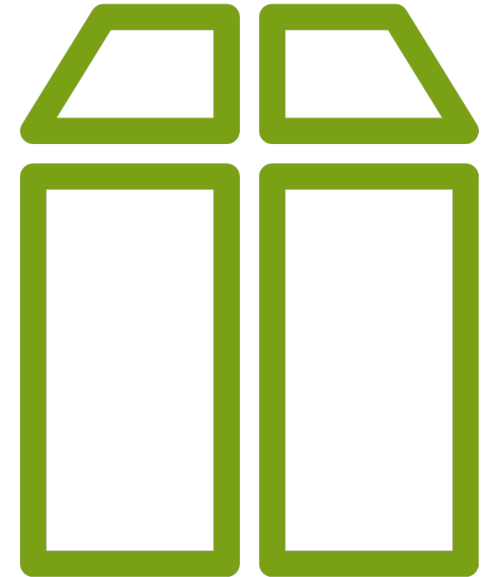# Amazon S3 Glacier data model concept overview

Vault

A vault is a container for storing archives.

Unique URI form:

https://**region-specific-endpoint**/**account-id**/vaults/**vault-name**

Example URI:

https://glacier.us-west-2.amazonaws.com/111122223333/vaults/example vault

Archive

An archive is any data, such as a photo, video, or document.

Unique URI form:

https://**region-specific-endpoint**/**account-id**/vaults/**vault-name**/archives/**archive-id**

Example URI:

https://glacier.us-west-2.amazonaws.com/111122223333/vaults/example vault/archives/Nk...lqrEXAMPLEArchiveId

Job

An Amazon S3 Glacier job can retrieve an archive or get an inventory of a vault.

Unique URI form:

https://**region-specific-endpoint**/**account-id**/vaults/**vault-name**/jobs/**job-id**

Example URI:

https://glacier.us-west-2.amazonaws.com/111122223333/vaults/examplevault/jobs/HkF9p6o7yjhFx-K3CGl6fuSm6VzW9T7esGQfco8nUXVYwS0jlb5gq1JZ55yHgt5vP54ZShjoQzQVVh7vEXAMPLEjobID

Notification configuration

An Amazon S3 Glacier notification configuration can notify you when a job is completed.

Unique URI form:

https://**region-specific-endpoint**/**account-id**/vaults/**vault-name**/**notification-configuration**

Example JSON vault notification configuration:

```
{
    "Topic": "arn:aws:sns:us-west-2:111122223333:mytopic",
    "Events": ["ArchiveRetrievalCompleted", "InventoryRetrievalCompleted"]
}
```

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Amazon S3 access to archives

Amazon S3 Glacier provides three archive retrieval options:

- Expedited: 1–5 minutes
- Standard: 3–5 hours
- Bulk: 5–12 hours

Security features

AWS Identity and Access Management (IAM) policies

IAM contains Amazon S3 Glacier supported policies to manage access to data.

Data encryption

Amazon S3 Glacier encrypts your data automatically with AES-256.

Key management

Amazon S3 Glacier manages your keys for you.

Resource-based security policies

Both **vault access policies** and **Vault Lock policies** manage permissions. However, only vault access policies can be modified at any time.

Sample portion of a vault access policy for cross-account permissions →
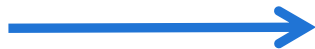
```
{
  "Version":"2012-10-17",
  "Statement":[
    {
      "Sid":"cross-account-upload",
      "Principal": {
        "AWS": [
          "arn:aws:iam::123456789012:root",
          "arn:aws:iam::444455556666:root"   ]
      },
      "Effect":"Allow",
      "Action": [
        "glacier:UploadArchive",
        "glacier:InitiateMultipartUpload",
        "glacier:CompleteMultipartUpload"
      ],
      "Resource": [ "arn:aws:glacier:us-west-2:999999999999:vaults/examplevault"
      ]
    }...
```

Comparing Amazon S3 and Amazon S3 Glacier

Category	Amazon S3	Amazon S3 Glacier
Data volume	No limit	No limit
Average latency	Milliseconds	Minutes or hours
Item size	5 TB max	40 TB max
Cost per GB per month	¢ ¢	¢
Billed requests	PUT, COPY, POST, LIST, and GET	UPLOAD and retrieval
Retrieval pricing	¢	¢ ¢

Security comparison
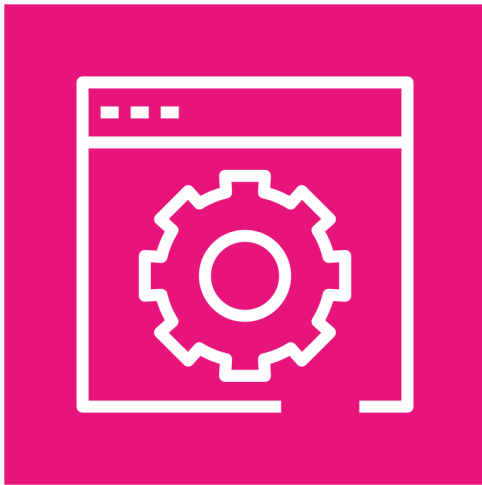

Amazon S3

Encryption is an optional step.

Amazon S3 Glacier

Data is encrypted by default.

How to access Amazon S3 Glacier

Ways to store, access, or interact with data stored in Amazon S3 Glacier include the following:

AWS Management Console

Amazon S3 Glacier REST API

Java or .NET AWS SDKs

Amazon S3 lifecycle policies

Amazon S3 Glacier

Demonstration

Create a vault by using the AWS Management Console.

Checkpoint questions

1. What are the three storage classes that make up Amazon S3 Glacier?

2. What is created in order to retrieve an archive or create an inventory of a vault?

3. Which information does the vault description provide?

Key ideas

- Amazon S3 Glacier is a data archiving service designed for security, durability, and an extremely low cost.

- The extremely low cost of Amazon S3 Glacier makes it a good option for long-term archiving.

- It includes three archive storage classes:
  - S3 Glacier Instant Retrieval
  - S3 Glacier Flexible Retrieval
  - S3 Glacier Deep Archive

- Any data that is archived in Amazon S3 Glacier is encrypted by default.

Thank you

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