

+ S3: Amazon Simple Storage Service is a massively scalable storage service based on object storage technology. It provides a very high level of durability with high availability & high performance. Data can be accessed from anywhere via the Internet through the Amazon console & the powerful S3 API.

S3 storage provides the following key features -

- i) Buckets - data is stored in buckets. Each bucket can store an unlimited amount of unstructured data.
- ii) Elastic scalability - S3 has no storage limit. Individual objects can be upto 5TB in size.
- iii) Flexible data structure - each object is identified using a unique key, and you can use ~~use~~ metadata to flexible organize data.
- iv) Downloading data - easily share data with anyone inside or outside your organisation & enable them to download data over the Internet.
- v) Permissions - assign permission at the bucket or object level to ensure only authorized users can access data.
- vi) APIs - the S3 API provided both as REST & SOAP interface has become an industry standard.

standard & is integrated with a large number of existing tools.

5. Use cases of S3 storage

1. Backup and Archival:

One of the primary use cases for S3 storage is backup & archival. Organizations can leverage S3's durability & availability to ensure the safety & longevity of their data. S3's redundant architecture & distributed data storage make it possible to store critical data that needs to be accessed quickly & securely.

S3 also offers seamless integration with various backup & archival software. This allows business to automate the backup & archival processes, reducing the risk of human error & ensuring data is consistently protected. With S3's versioning capabilities, organisations can also retain multiple versions of their files, enabling roll back to previous versions if needed.

2. Content distribution & hosting:

By leveraging S3's global networks of edge locations, content creators can distribute their files seamlessly to end-users, reducing latency &

improving user experience. S3's integration with content delivery networks (CDNs) further enhances its content distribution capabilities, ensuring the files are delivered quickly.

3. Disaster Recovery:

With S3's cross-region replication, businesses can automatically save their data in multiple Amazon regions, ensuring that it is protected against regional disasters. In the event of a disaster, organisations can quickly restore their data.

4. Big Data & Analytics:

S3's low-cost storage object make it suitable for storing large volumes of raw data. Organisations can ingest data from various sources into S3, including log files, sensor data and social media feeds.

5. Software & Object Distribution:

S3 is commonly used by organisations to distribute software packages, firmware updates & other digital assets to users, customers or employees. S3's global network of edge locations ensure fast & efficient delivery of these files regardless of the user's location.

* Steps for S3

Step 1) Create a Bucket

To get started off, the first step is to create an S3 Bucket. A bucket is a container for storing objects in S3. Follow these steps to create S3 bucket:

- i) Log into the AWS Management console & navigate to S3 service.
- ii) Click on 'Create Bucket' button.
- iii) Enter a unique Bucket Name.
- iv) Choose region where you want to create.
- v) Configure settings as needed.
- vi) Click on 'Create Bucket'.

Step 2) Uploading object on Bucket

This step is straightforward. You can upload images, files, videos or any type of data.

Steps :

1. Open S3 console & navigate your bucket.
2. Click on upload button.
3. Choose files you want to upload from device.
4. Optionally, set permissions, metadata & encryption options for uploaded objects.
5. Click upload button to start the upload process.

CC_prac2

The screenshot shows the AWS S3 Buckets page. At the top, there's an account snapshot with the message "updated every 24 hours". Below it, a search bar and a "View Storage Lens dashboard" button. On the left, a sidebar lists "Buckets", "Access Grants", "Access Points", "Object Lambda Access Points", "Multi-Region Access Points", "Batch Operations", "IAM Access Analyzer for S3", and "Storage Lens" (with sub-options: Dashboards, Storage Lens groups, AWS Organizations settings). A "Find buckets by name" search bar is at the top of the main content area. Below it, a table header for "General purpose buckets" includes columns for Name, AWS Region, IAM Access Analyzer, and Creation date. The main content area displays a message: "No buckets. You don't have any buckets." with a "Create bucket" button.

Create bucket

Buckets are containers for data stored in S3.

General configuration

AWS Region: Europe (Stockholm) eu-north-1

Bucket type: General purpose
Recommended for most use cases and access patterns.
General purpose buckets are the original S3 bucket type. They allow a mix of storage classes that redundantly store objects across multiple Availability Zones.

Directory - New
Recommended for low-latency use cases. These buckets use only the S3 Express One Zone storage class, which provides faster processing of data within a single Availability Zone.

Bucket name:
Bucket name must be unique within the global namespace and follow the bucket naming rules. [See rules for bucket naming](#).

Copy settings from existing bucket - optional:
Only the bucket settings in the following configuration are copied.

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Serverside encryption is automatically applied to new objects stored in this bucket.

Encryption type [Info](#)

Server-side encryption with Amazon S3 managed keys (SSE-S3)

Server-side encryption with AWS Key Management Service keys (SSE-KMS)

Dual-layer server-side encryption with AWS Key Management Service keys (DSSE-KMS)

Secure your objects with two separate layers of encryption. For details on pricing, see [DSSE-KMS pricing](#) on the Storage tab of the [Amazon S3 pricing page](#).

Bucket Key

Using an S3 Bucket Key for SSE-KMS reduces encryption costs by lowering calls to AWS KMS. S3 Bucket Keys aren't supported for DSSE-KMS. [Learn more](#)

Disable

Enable

Advanced settings

After creating the bucket, you can upload files and folders to the bucket, and configure additional bucket settings.

[Create bucket](#)

Successfully created bucket "faridas3". To upload files and folders, or to configure additional bucket settings, choose [View details](#).

Amazon S3 > Buckets

Account snapshot - updated every 24 hours [All AWS Regions](#)

Storage lens provides visibility into storage usage and activity trends. [Learn more](#)

[View Storage Lens dashboard](#)

[General purpose buckets](#) [Directory buckets](#)

General purpose buckets (1) [Info](#) [All AWS Regions](#)

Buckets are containers for data stored in S3.

Find buckets by name

Name	AWS Region	IAM Access Analyzer	Creation date
faridas3	Europe (Stockholm) eu-north-1	View analyzer for eu-north-1	August 10, 2024, 10:25:45 (UTC+05:30)

[Create bucket](#)

Screenshot of the AWS S3 console showing the bucket 'faridas3'.

The top navigation bar includes the AWS logo, Services, Search, and a menu icon. The top right shows Stockholm and Farida_Attar.

The main content area shows the 'Objects' tab selected. A toolbar at the top of the list contains actions: Copy S3 URI, Copy URL, Download, Open, Delete, Actions, Create folder, and Upload. Below the toolbar is a search bar labeled 'Find objects by prefix'.

A table header row includes columns for Name, Type, Last modified, Size, and Storage class. The table body displays a message: 'No objects' and 'You don't have any objects in this bucket.' A large 'Upload' button is located at the bottom of the list.

Screenshot of the AWS CloudShell interface showing an upload progress bar.

The top navigation bar includes CloudShell, Feedback, Services, Search, and a menu icon. The top right shows © 2024, Amazon Web Services, Inc. or its affiliates., Privacy, Terms, and Cookie preferences. It also shows Stockholm and Farida_Attar.

The main content area shows an 'Uploading' progress bar at 100%. Below it, a message says 'Total remaining: 1 file: 0 B(0%)' and 'Estimated time remaining: a few seconds'. The transfer rate is listed as 'Transfer rate: 579.3 kB/s'.

A table shows upload status for 's3://faridas3':

Destination	Succeeded	Failed
s3://faridas3	0 files, 9.0 MB (100.00%)	0 files, 0 B (0%)

Below the table are tabs for 'Files and folders' and 'Configuration'. The 'Files and folders' tab shows a list of 1 total file: 'CC_Prac1.pdf' (9.0 MB, application/pdf, In progress).

Screenshot of the AWS S3 object details page for 'CC_Prac1.pdf'.

The top navigation bar includes CloudShell, Feedback, Services, Search, and a menu icon. The top right shows © 2024, Amazon Web Services, Inc. or its affiliates., Privacy, Terms, and Cookie preferences. It also shows Stockholm and Farida_Attar.

The main content area shows the object path: Amazon S3 > Buckets > faridas3 > CC_Prac1.pdf. To the right are actions: Copy S3 URI, Download, Open, and Object actions.

The 'Properties' tab is selected. The 'Object overview' section contains the following details:

Owner	S3 URI
22c0784839e251cfccbd2cb4e84c5d3a0f6d76b932b05ac867ec246e860a0d97	s3://faridas3/CC_Prac1.pdf
AWS Region	Amazon Resource Name (ARN)
Europe (Stockholm) eu-north-1	arn:aws:s3:::faridas3/CC_Prac1.pdf
Last modified	Entity tag (Etag)
August 10, 2024, 10:28:59 (UTC+05:30)	f1aae8744350dabd4f2ebc862bb917d5
Size	Object URL
9.0 MB	https://faridas3.s3.eu-north-1.amazonaws.com/CC_Prac1.pdf
Type	

Below the properties table are tabs for 'Permissions' and 'Versions'.

The screenshot shows a browser window with a handwritten note on cloud computing architecture and its upload to AWS S3.

Handwritten Note:

Cloud Computing Architecture

Architecture of cloud computing is the combination of both SAA (Service oriented architecture) and EDA (Event driven architecture). Client infrastructure, application, service, runtime, cloud, storage, infrastructure, management and security all these are the components of cloud computing architecture.

The cloud architecture is divided into 2 parts, i.e.

. Frontend

AWS S3 Upload Confirmation:

Upload succeeded

View details below.

Summary

Destination	Succeeded	Failed
s3://faridas3	1 file, 67.0 B (100.00%)	0 files, 0 B (0%)

Files and folders (1 Total, 67.0 B)

Name	Folder	Type	Size	Status	Error
farida.html	-	text/html	67.0 B	Succeeded	-

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