
ondia

AWS S3

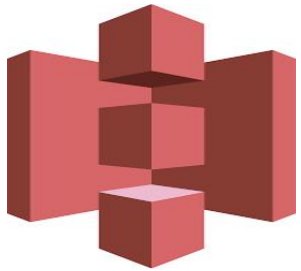
AGENDA

- Introduction to S3
- Bucket & Object Components
- Storage Classes
- Versioning
- S3 Static Website Hosting

Introduction to S3

Introduction to S3

What is S3?



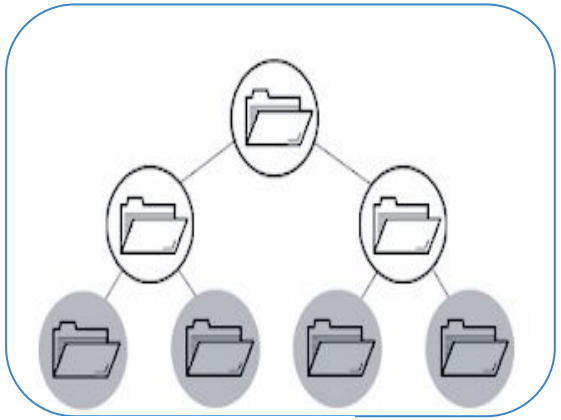
- S3 stands for Simple Storage Service.
- One of AWS's oldest services, Amazon S3 could be defined as AWS object-based file storage service.

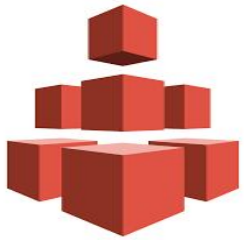
Introduction to S3

Storage Options

Amazon Elastic Block Storage (EBS)

File Storage

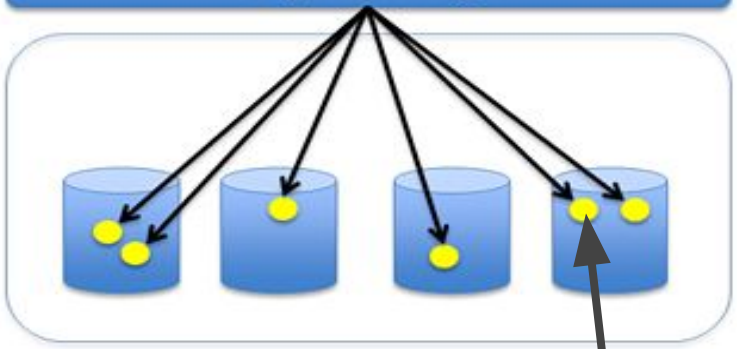




Amazon EFS

HTTP(S) Interface

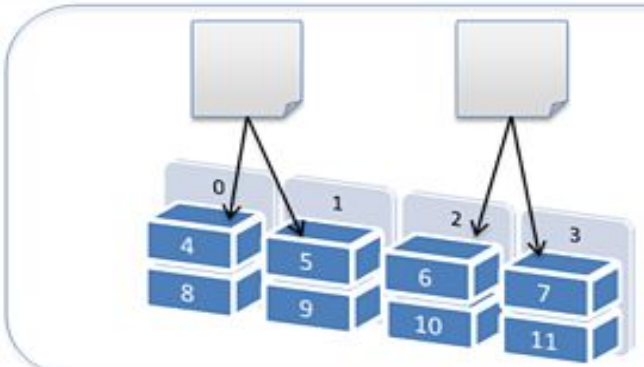
Object Storage



- Store virtually unlimited files.
- Maintain file revisions.
- HTTP(S) based interface.
- Files are distributed in different physical nodes.

Object=
File+
Unique ID+
Metadata+

Block Storage



- File is split and stored in fixed sized blocks.
- Capacity can be increased by adding more nodes.
- Suitable for applications which require high IOPS, database, transactional data.

Introduction to S3

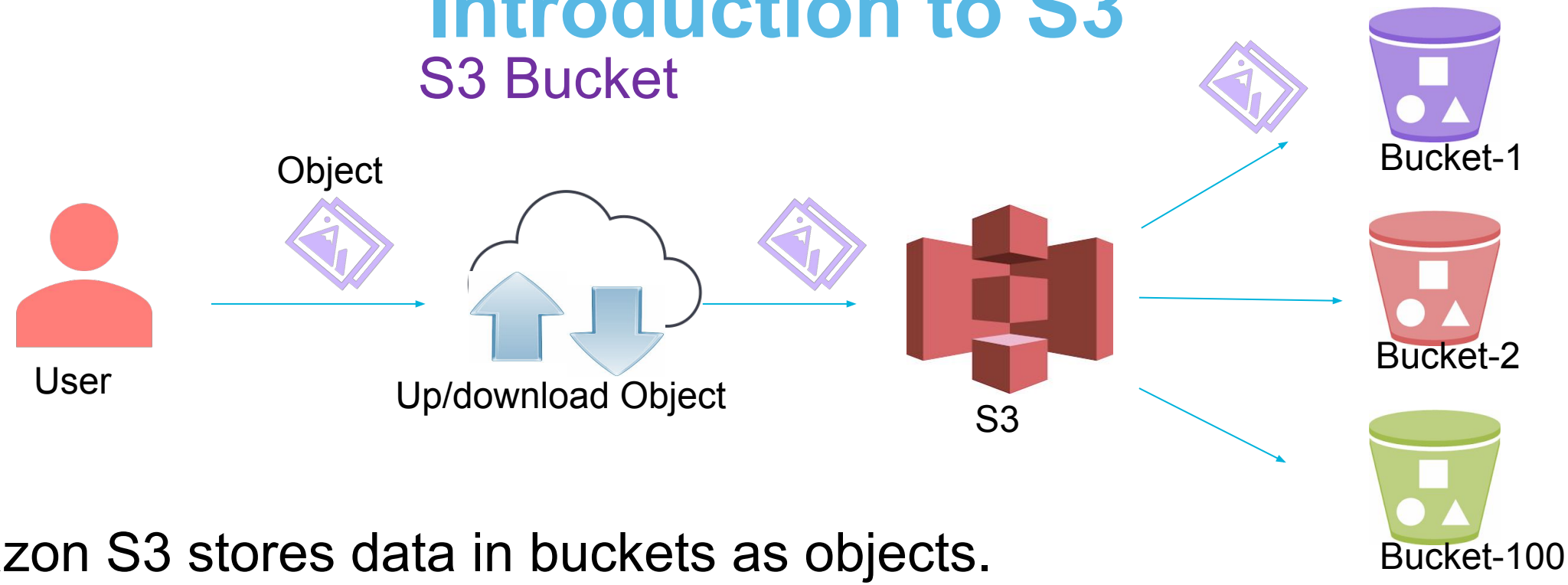
What is S3 Bucket?

S3 Bucket

- A bucket is a logical storage unit used to store objects in AWS.
- A bucket can also be considered as a container.

Introduction to S3

S3 Bucket

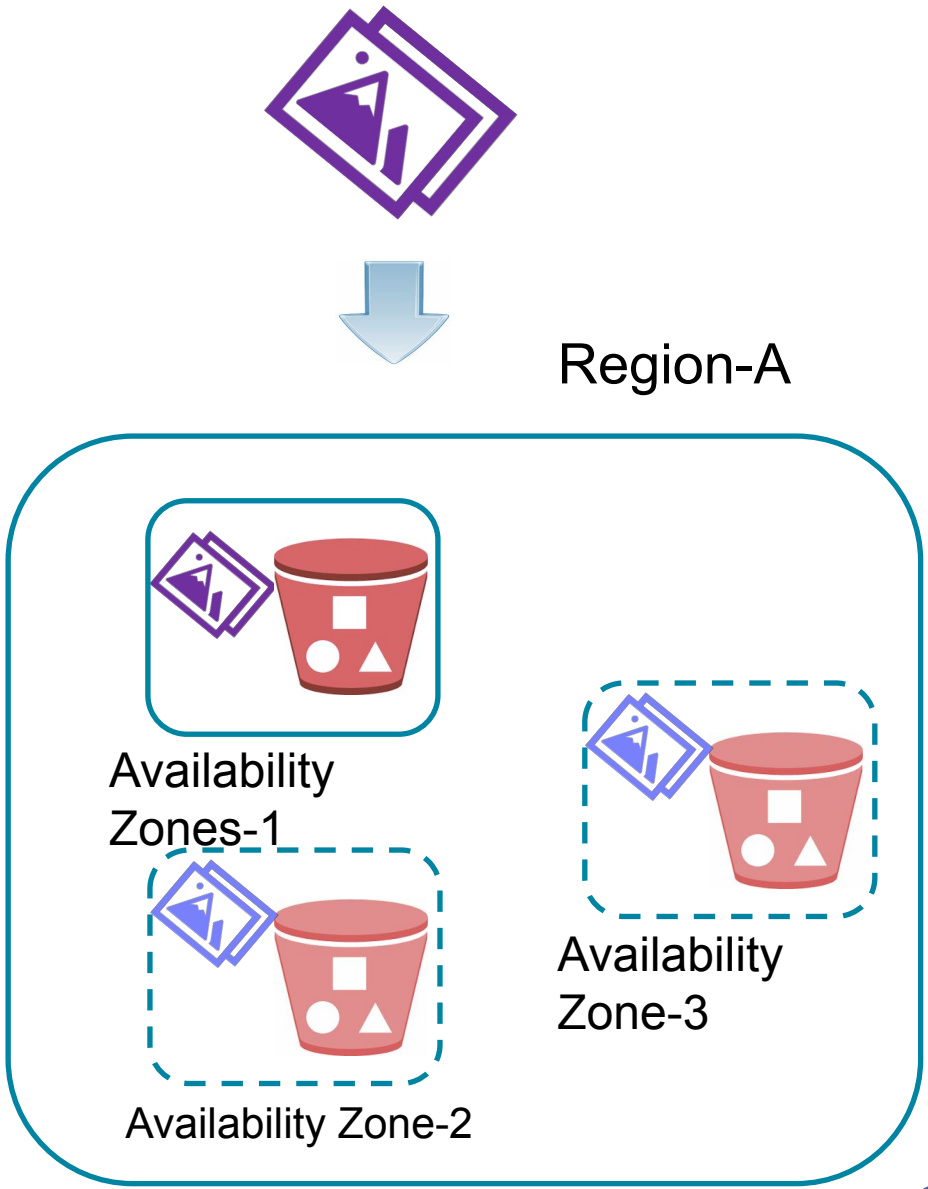


- Amazon S3 stores data in buckets as objects.
- The number of objects that can be stored in a bucket is not limited, but each AWS account can only have 100 buckets at once.

Introduction to S3

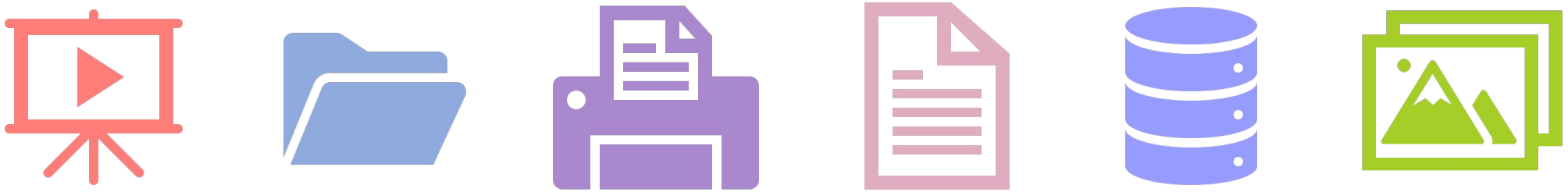
S3 Bucket

- S3 is a global service, but a region must be selected
- Bucket's name must be unique.
- Objects is stored in a minimum of 3 Availability Zones (AZs) in an Amazon S3 Region.



Introduction to S3

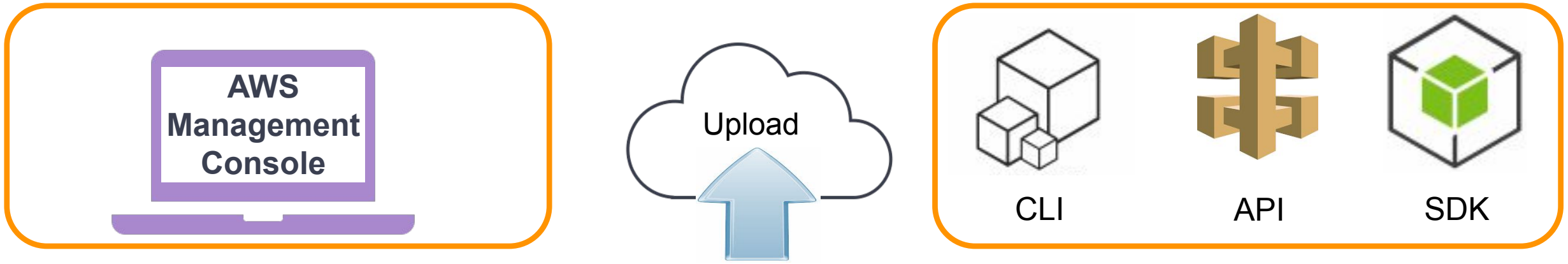
What is an Object in S3?



5 TB

Introduction to S3

Object in S3-Upload



Up to 160 GB

Over 160 GB

- The max. size of an object you can upload via AWS Management Console is 160 GB.
- For uploading a file greater than 160 GB, the AWS CLI, AWS SDK, or API is needed to be used

Introduction to S3

S3 Object Pricing

Upload

Download

Storage

Management

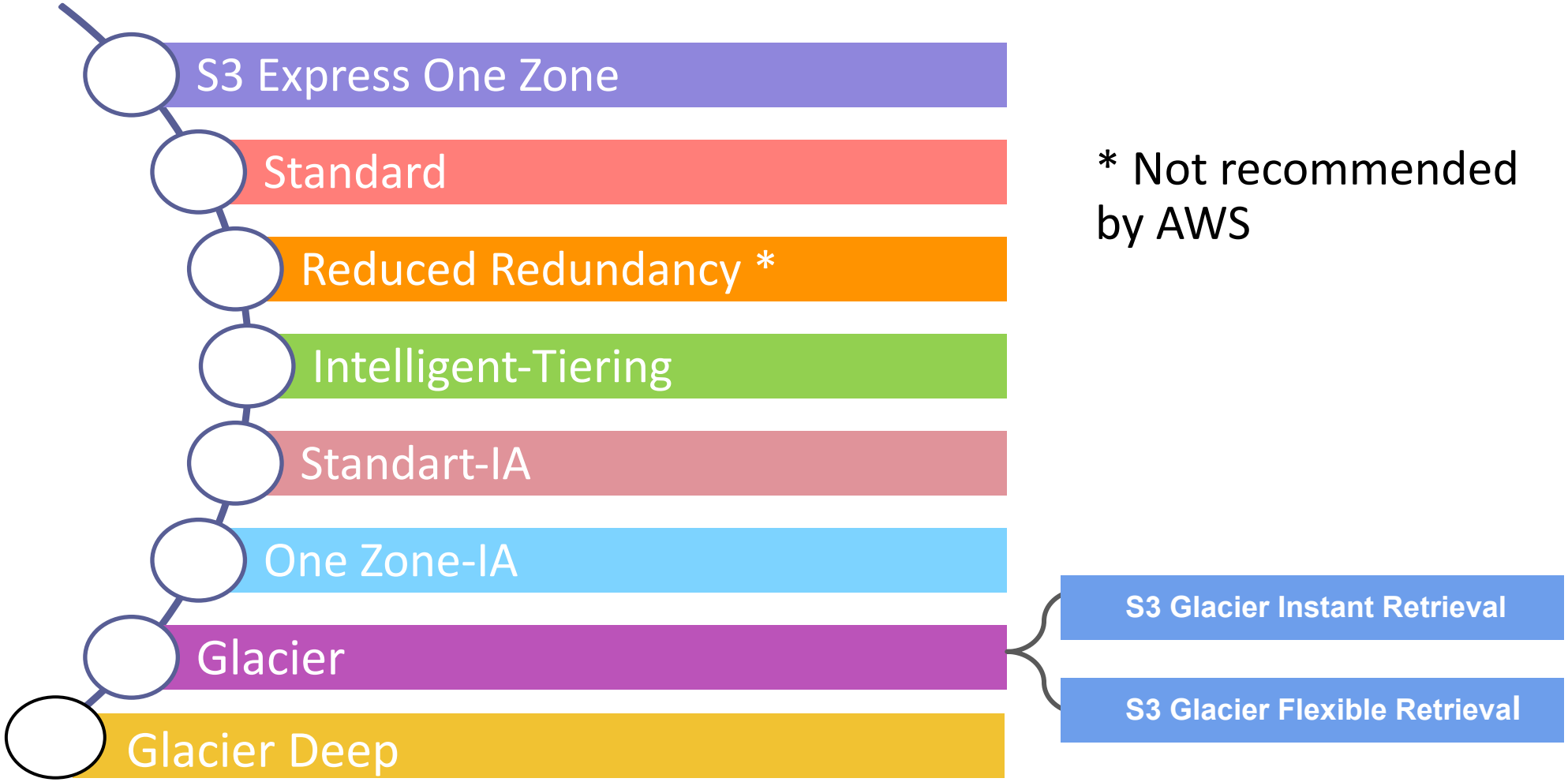
Request

Transfering in the same Region

Storage Classes

Storage Classes

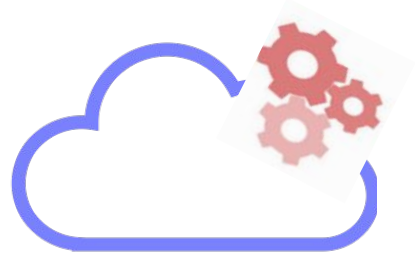
Types of Storage Classes



* Not recommended by AWS

Storage Classes

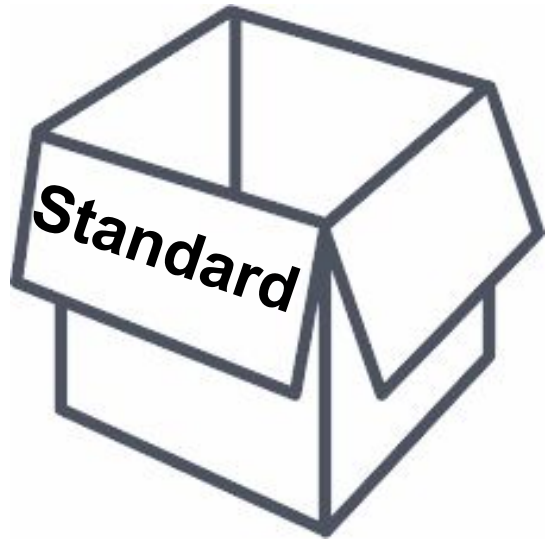
Standard Class



Cloud Applications

Mobile Games

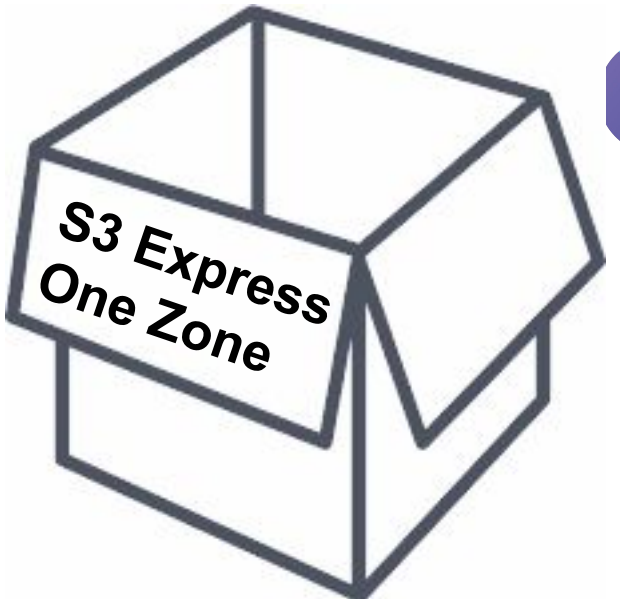
Website Hosting



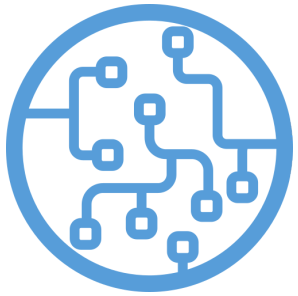
- Standard is the default storage class unless you change
- This is the basic storage solution for frequently accessed data
- Reliability at 99,999999999%
- Availability at 99,99%
- Cloud applications and web-services, mobile games and website hosting are some example of use case

Storage Classes

S3 Express One Zone



Analytics



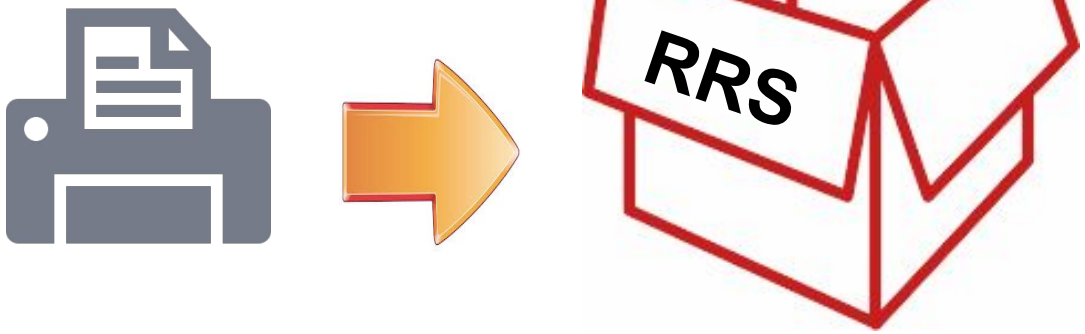
Machine Learning

- High performance storage for your most frequently accessed data
- Consistent single-digit milliseconds request latency
- Availability at 99,95%
- Accelerate analytics and ML workloads with AWS service integrations
- Improve access speeds by 10x and reduce costs 50% compared to Standard

Storage Classes

Reduced Redundancy (RRS)

Non critical Data



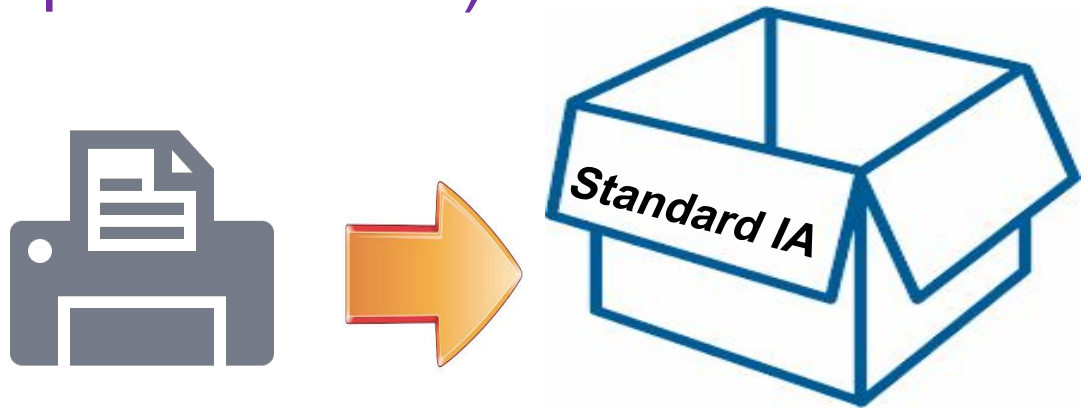
- RRS class offering less redundancy is a modified version of Standard storage class
- It is designed for non critical and reproducible data
- The main difference between RRS and Standard class is reliability
- While reliability of Standard storage class is 99,999999999%,

  reliability of RRS class is 99,99 %
- It provides cost saving compare to Standard class for the non critical data.

Storage Classes

Standard IA (Infrequent Access)

Infrequently Accessed Data



- Standard IA (Infrequent Access) is a convenient for infrequently accessed files
- But in case of access, it provides you to reach the file quickly.
- In fact, it designed for the data which requires less frequent access, but with longer storage time than the Standard class
- It is cheaper than Standard class as long as you access **infrequently.**

Storage Classes

One Zone IA (Infrequent Access)

Infrequently Accessed
& Non Critical Data

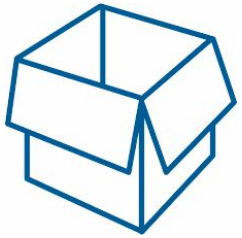
- One Zone IA class is a modified version of Standard IA.
- It is 20 percent cheaper than Standard IA due to less availability.
- Unlike others, One Zone IA stores data only in one availability zone, instead of three availability zones
- One-Zone IA can be prefered when you have infrequently accessed and noncritical files

Storage Classes

Intelligent Tier

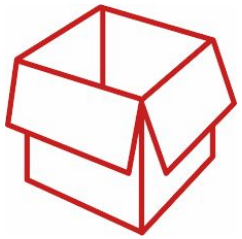
Unpredictable Access Patterns

- It is designed to optimize storage costs by automatically moving data to the most cost-effective storage access tier.
- There are 4 access tiers.
- It is ideal, if your access patterns are unknown or unpredictable.



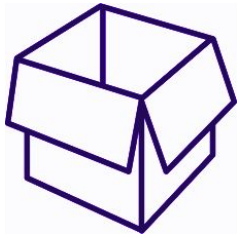
Frequent Access Tier

30 consecutive days after last access



Infrequent Access Tier

90 consecutive days after the last access



Archive Access tier

180 consecutive days after the last access

Deep Archive Access tier

Storage Classes

Amazon Glacier

Archives & Backup
Copies of Databases

S3 Glacier Instant Retrieval

- It is used for archiving data that is rarely accessed and requires milliseconds retrieval.

- It offers a cost savings compared to the S3 Standard-IA storage class, with the same latency and throughput performance

- S3 Glacier Instant Retrieval has higher data access costs than S3 Standard-IA.

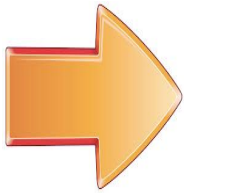
S3 Glacier Flexible Retrieval

- It is a perfect solution for long-term storage and data archiving that doesn't require instant access.
- Minimum storage duration period is 90 days and can be accessed at least in 1-5 minutes
- If you have deleted, overwritten, or transitioned to a different storage class an object before the 90-day minimum, you are charged for 90 days.

Storage Classes

Amazon Glacier Deep Archive

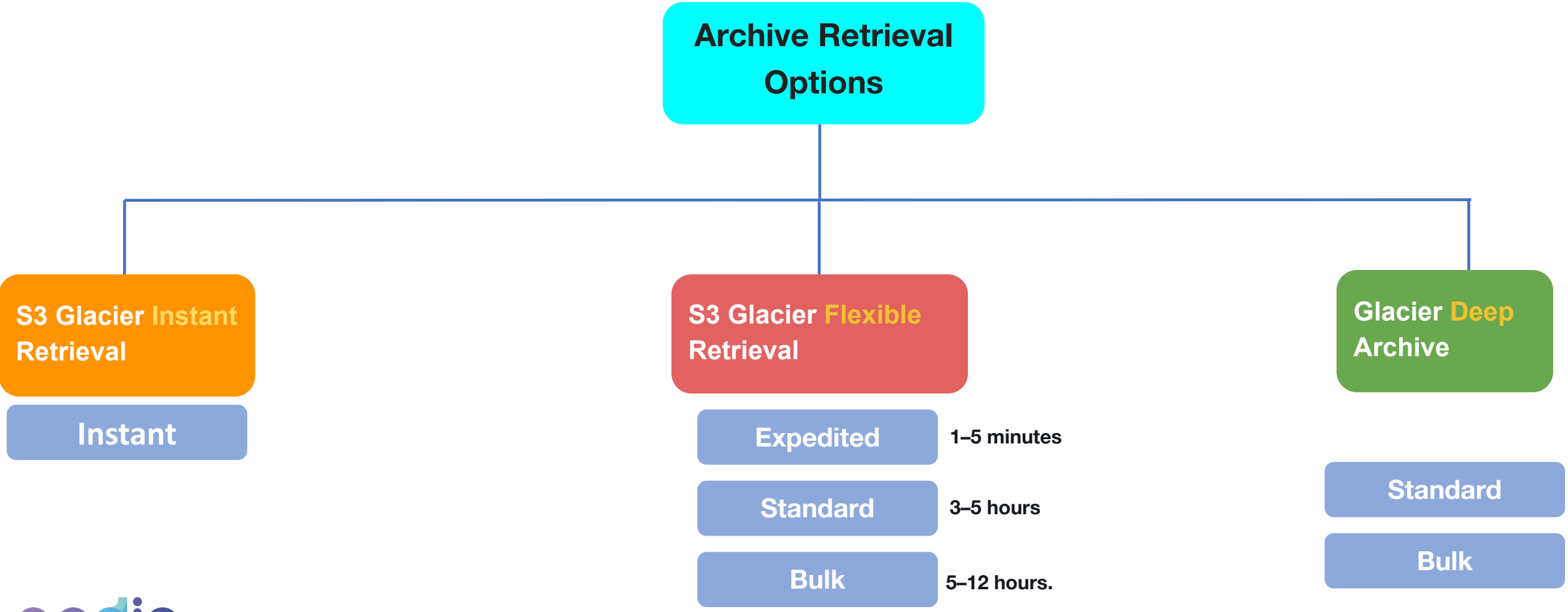
Infrequently Accessed
& Non Critical Data



- It is used for archiving data that rarely need to be accessed / 7-10 years
- It is the lowest cost storage option in AWS.
- Minimum storage duration period is 180 days and a default retrieval time of 12 hours. If you interact with the object in 180 days you'll be charged for 180 days.

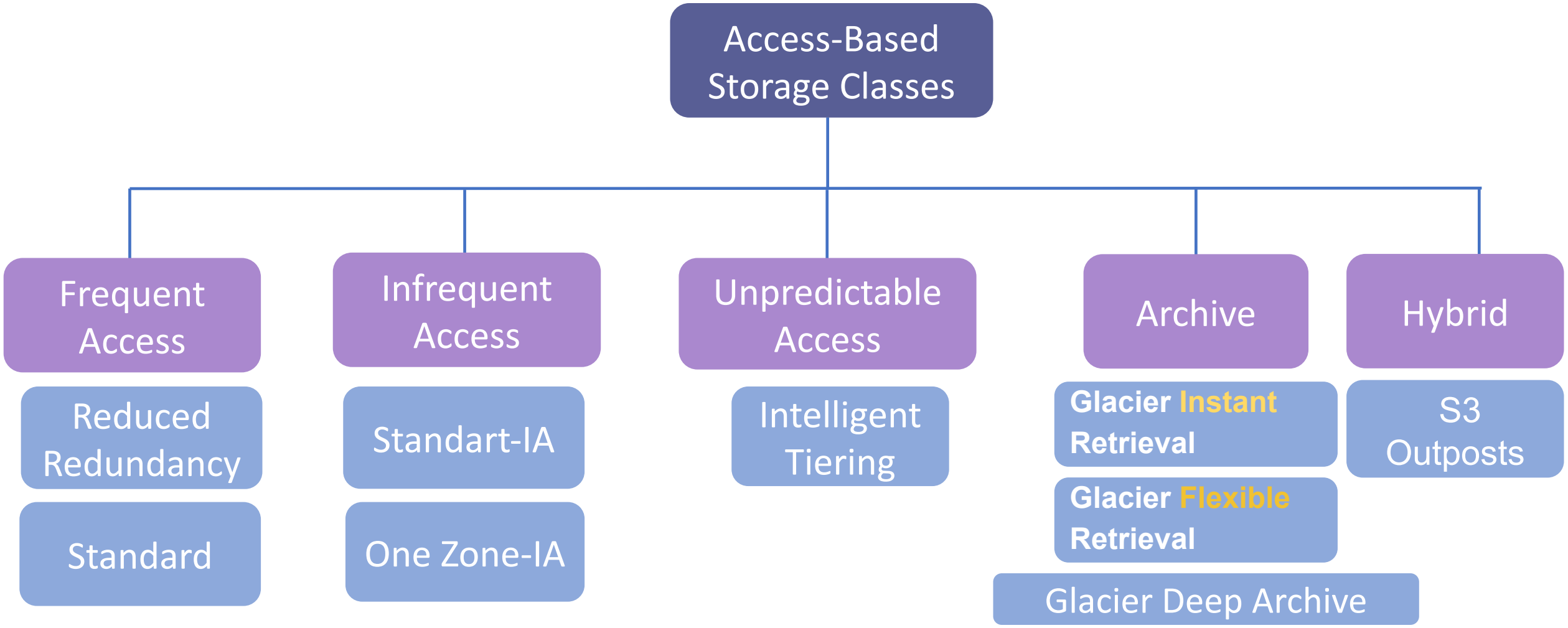
Storage Classes

Archive Retrieval Options



Storage Classes

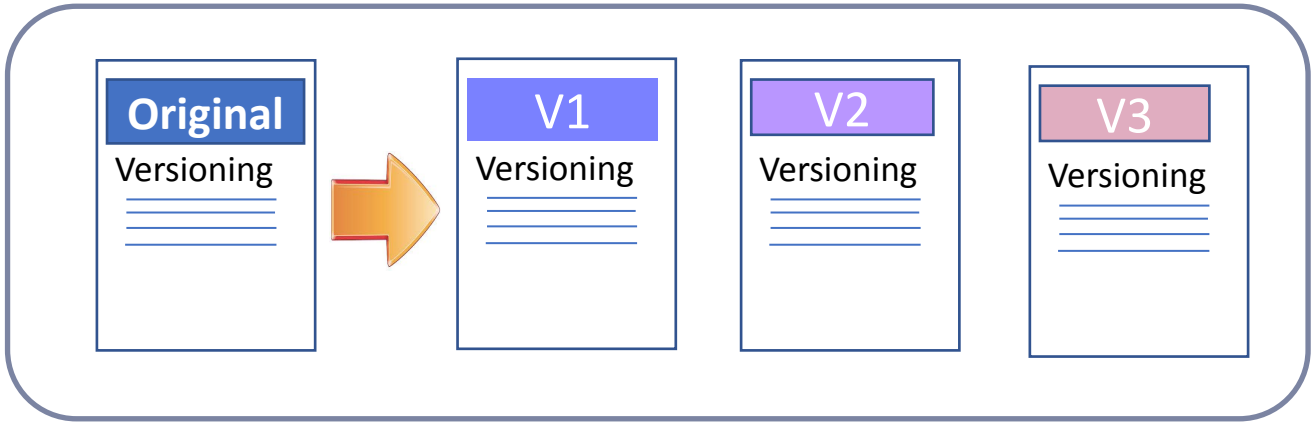
Summary of Storage Classes



Versioning

Versioning

What is Versioning?

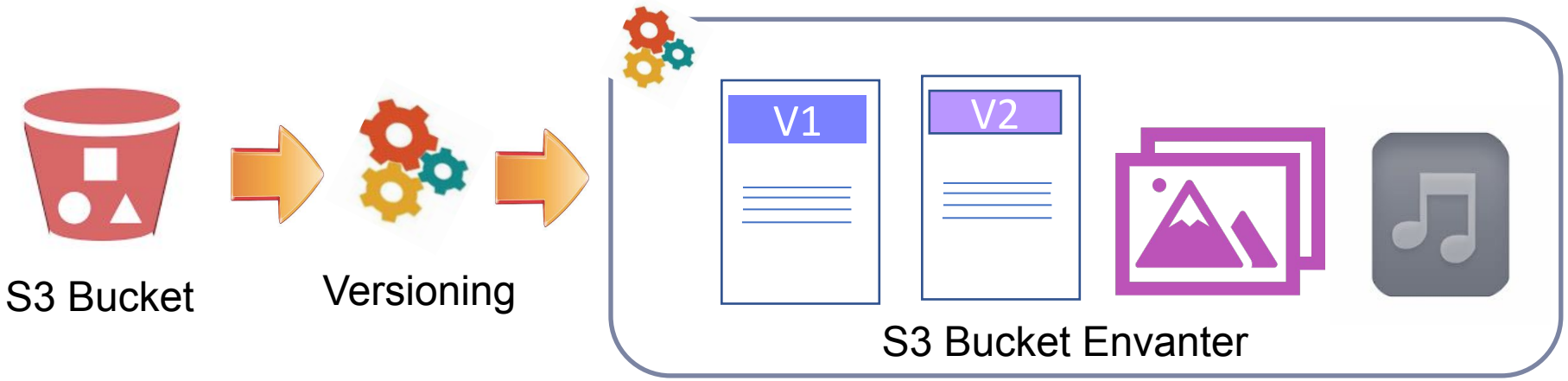


- Versioning is a way to keep multiple versions (deleted and changed versions) of an object in a bucket.

- By using versioning, all unwanted user behavior and program errors can be quickly recovered.

Versioning

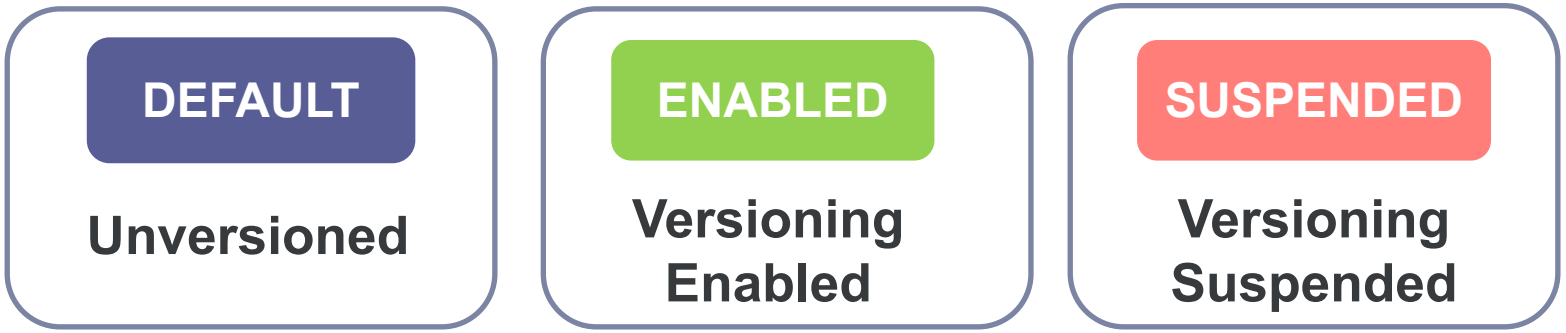
What is Versioning?



- Versioning is bucket-based feature

Versioning

States of Versioning

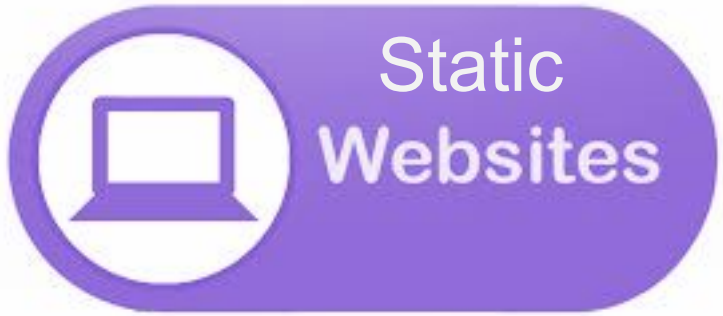


It is not possible return to an unversioned state, however, you can make suspend versioning on that bucket.

S3 Static Website Hosting

S3 Static Website Hosting

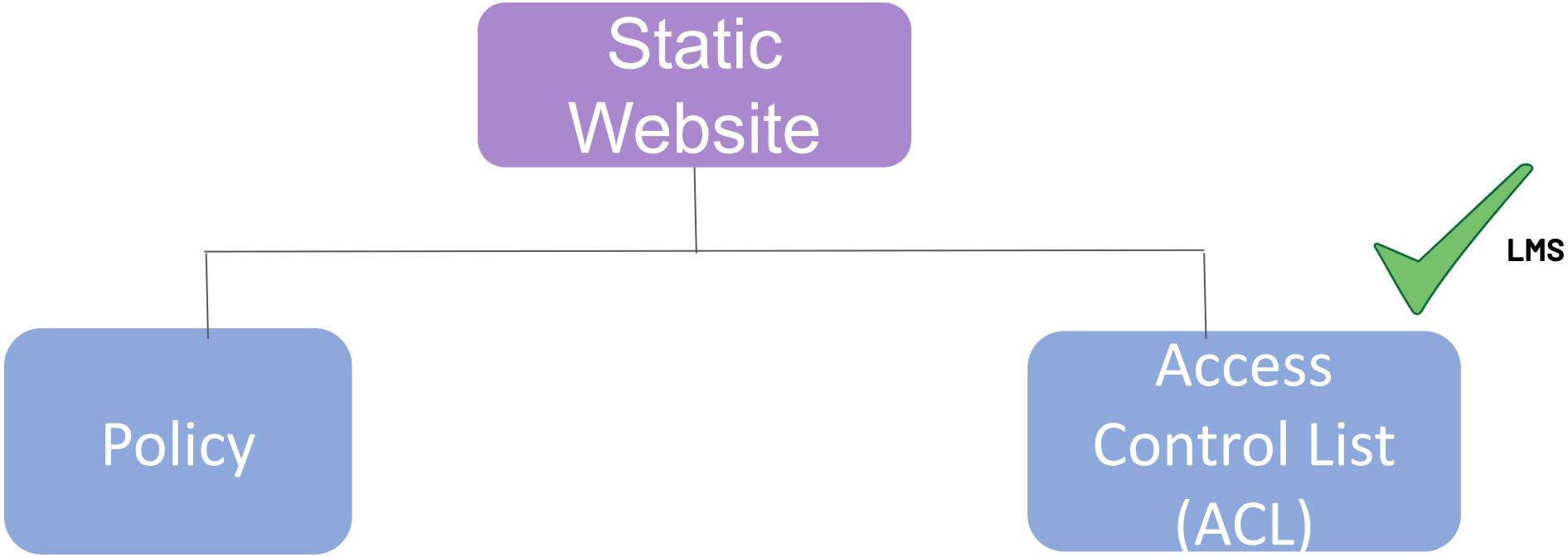
What is Static Website Hosting?



- Static Website Hosting is a website that contains simple web components.
- Uses HTML, CSS, images, etc.
- No server, database or any application code.

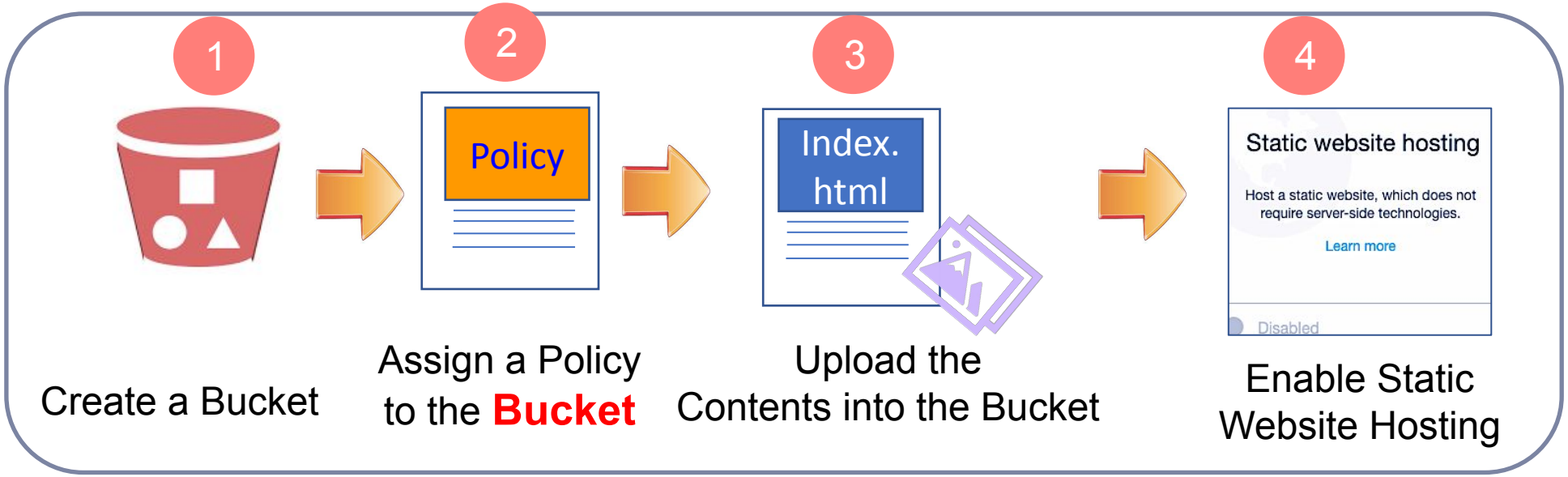
S3 Static Website Hosting

Static Website Permission Options



S3 Static Website Hosting

Static Website Hosting - With Policy



THANKS!

Any questions?