



DevKTOps

ARCHITECTING ON aws

The AWS logo, which consists of a thick orange arrow pointing to the right, positioned below the word "aws".

Module - 2 : Simple Architecture



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COMING UP?

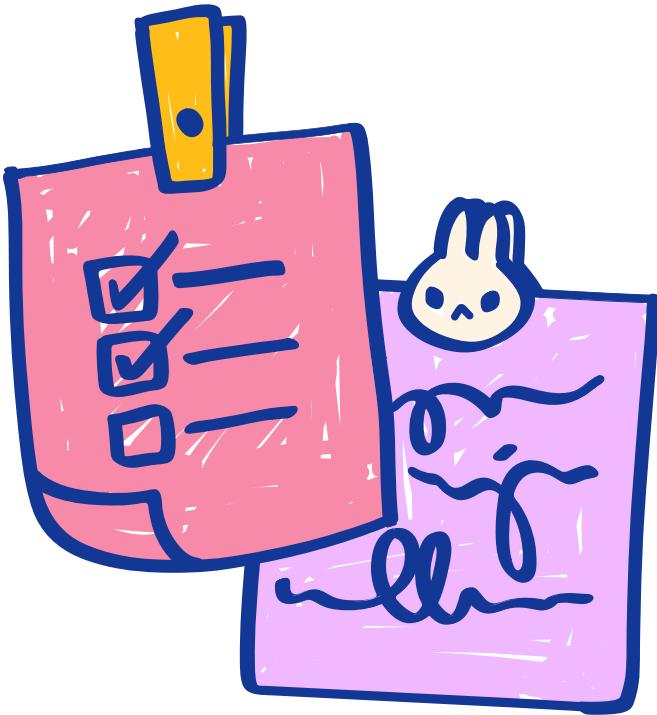
- The Simplest Architectures
- Simple way to store, distribute and analyze data in the cloud





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Module Overview



- How Amazon S3 can help?
- How to store content?
- S3 Access Control
- What is Amazon Glacier and how it can help?

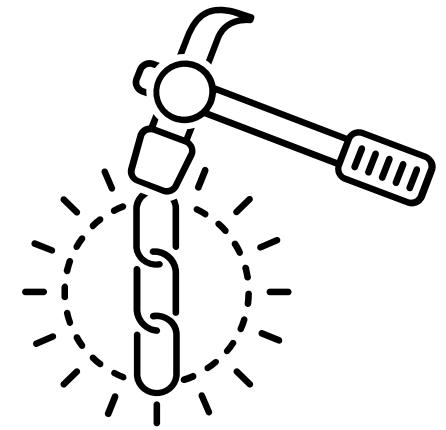
What is Amazon S3?



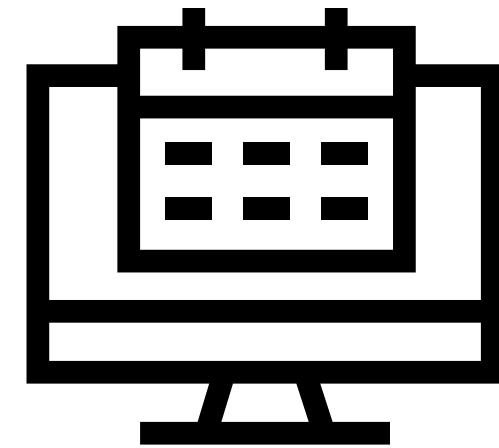
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Object-level Storage



Designed for
99.999999999%
Durability



Event Triggers

Amazon S3



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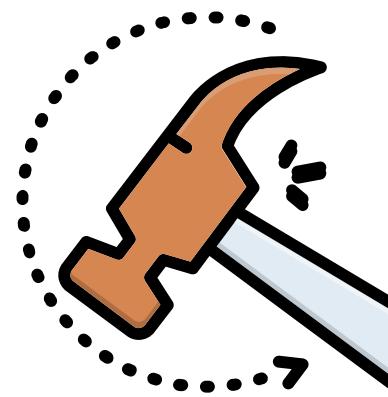
An Object storage service

- Can stores massive (unlimited) amounts of unstructured data
- Data Files are stored in Buckets
- Maximum file size for single object is 5TB
- Each object has five consistent characteristics
 - Key
 - Version ID
 - Value
 - Metadata
 - Subresources

Amazon S3 Benefits



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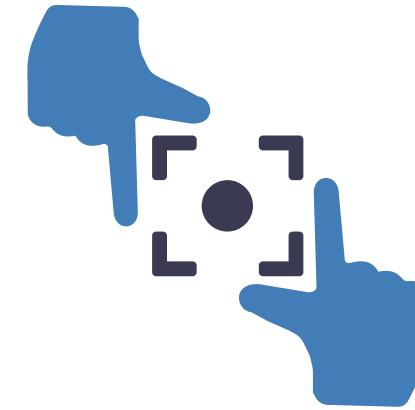
Durability

It ensures data is no loss
Standard provides 11 9s(99.999999999%)



Scalability

Virtually unlimited capacity
Each object can be 5 TB or less



Availability

Anytime can access data when needed
Standard is designed for 4 9s(99.99%)



Security

Fine-grained access control
Many ways to control
Encrypt data

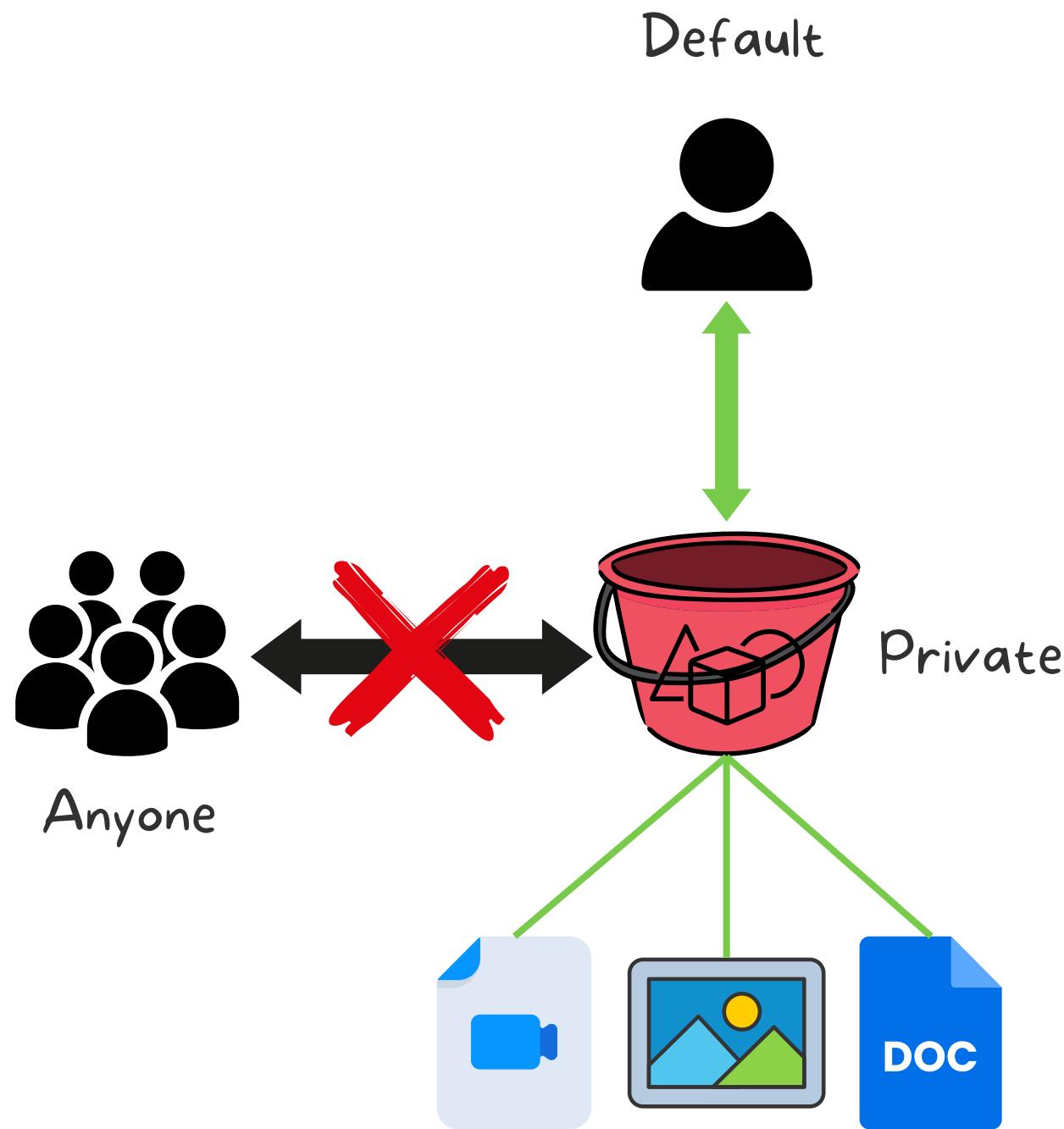


Performance

Supports many design patterns
[Link:](#)

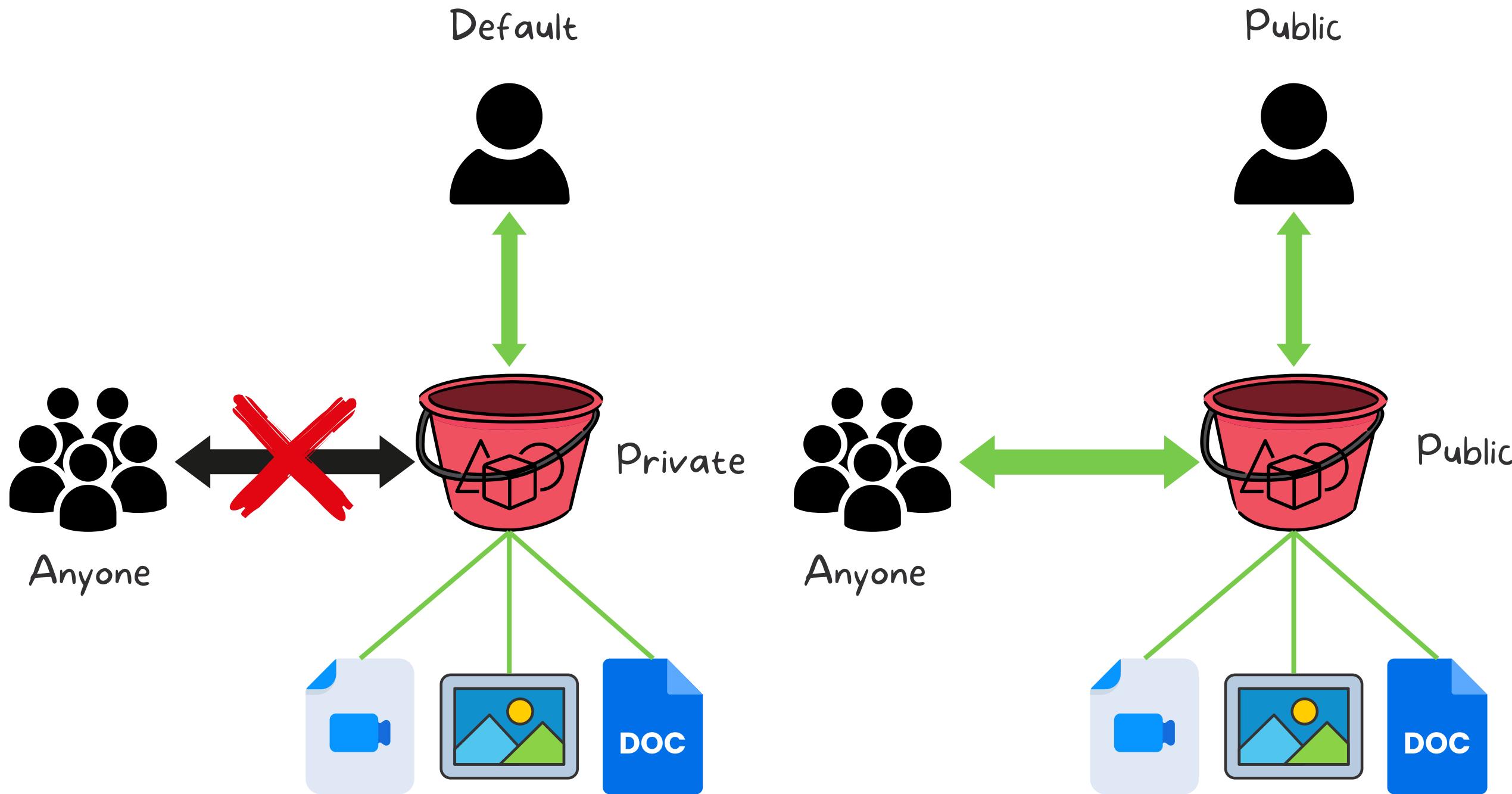


Amazon S3 Access Control

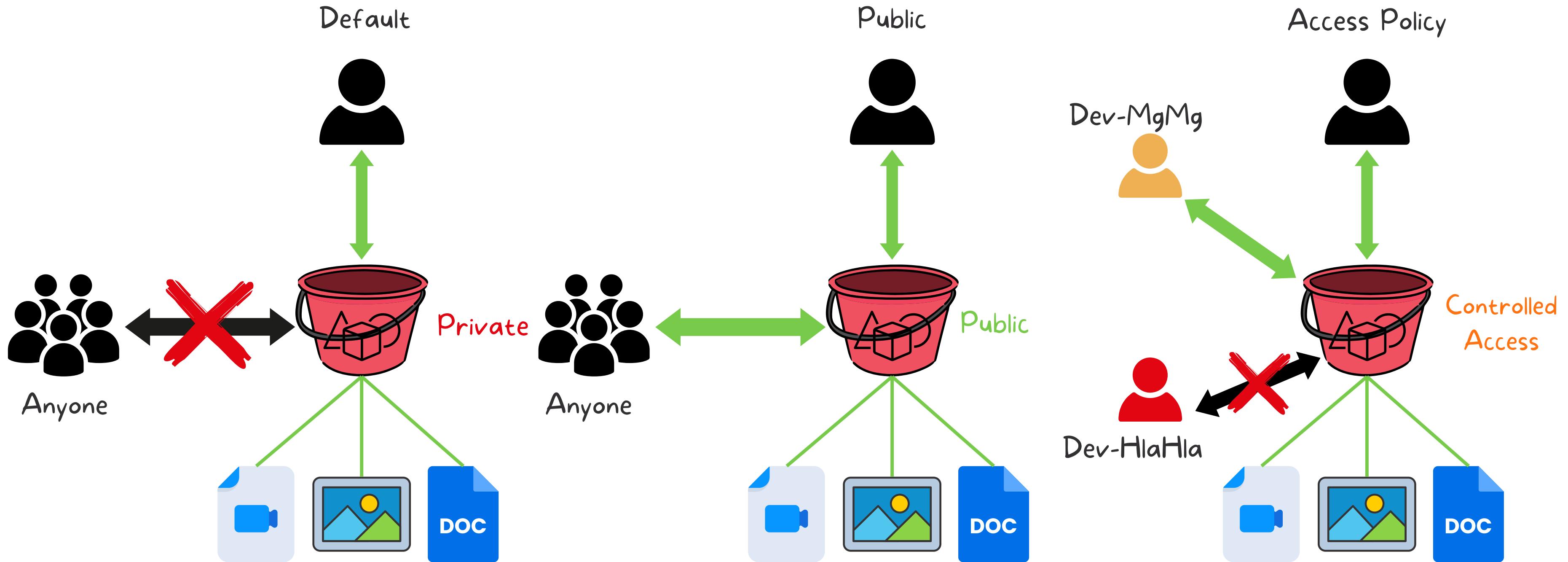




Amazon S3 Access Control



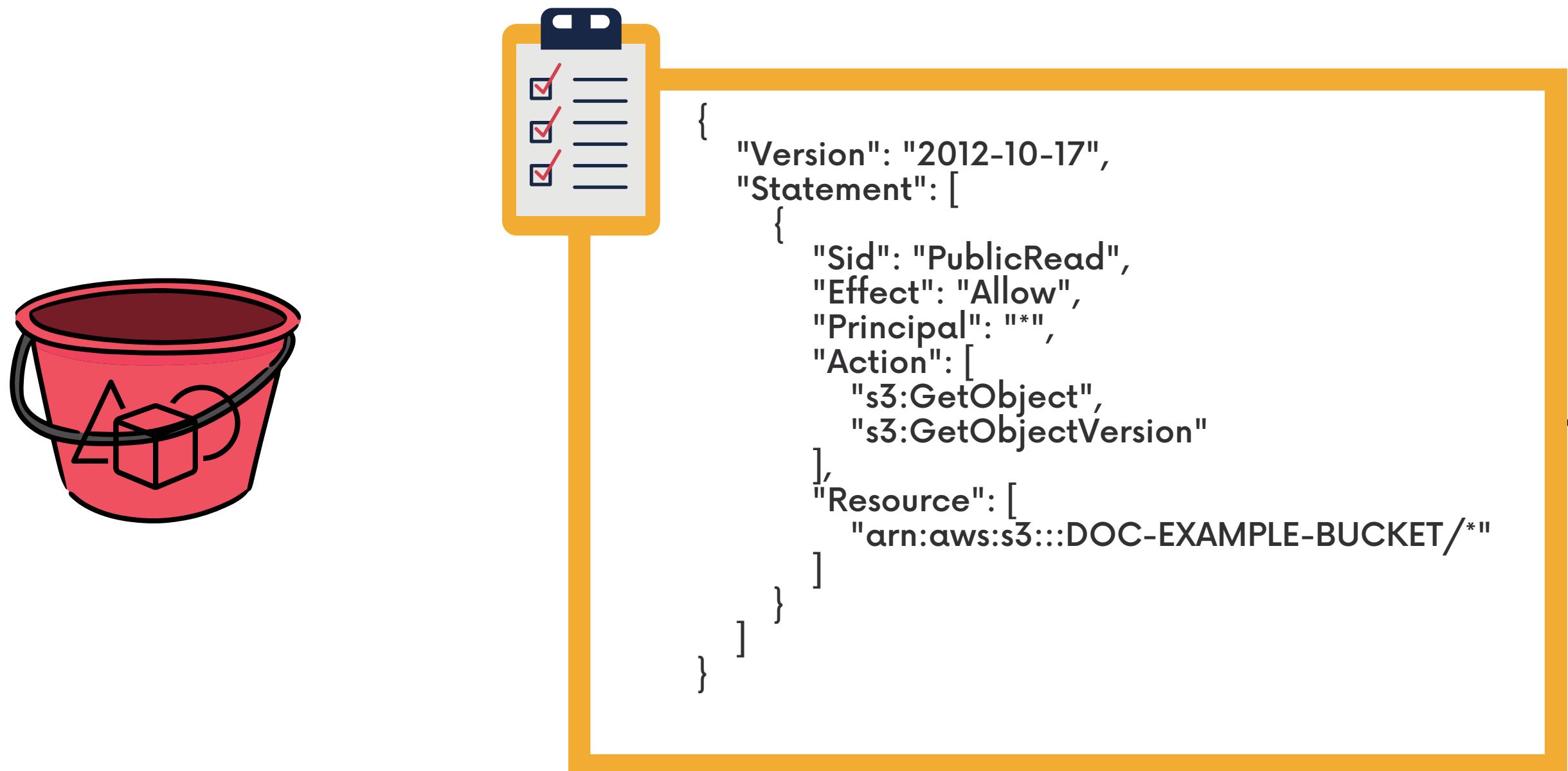
Amazon S3 Access Control





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S3 Bucket Policies



AWS Policy
Generator



Amazon S3 - Encryption



Encryption means "encodes data with a secret key to makes it unreadable"

- Only users who have secret key can decode it
- AWS has AWS Key Management Service (AWS KMS) to manage secret keys



Server-side Encryption

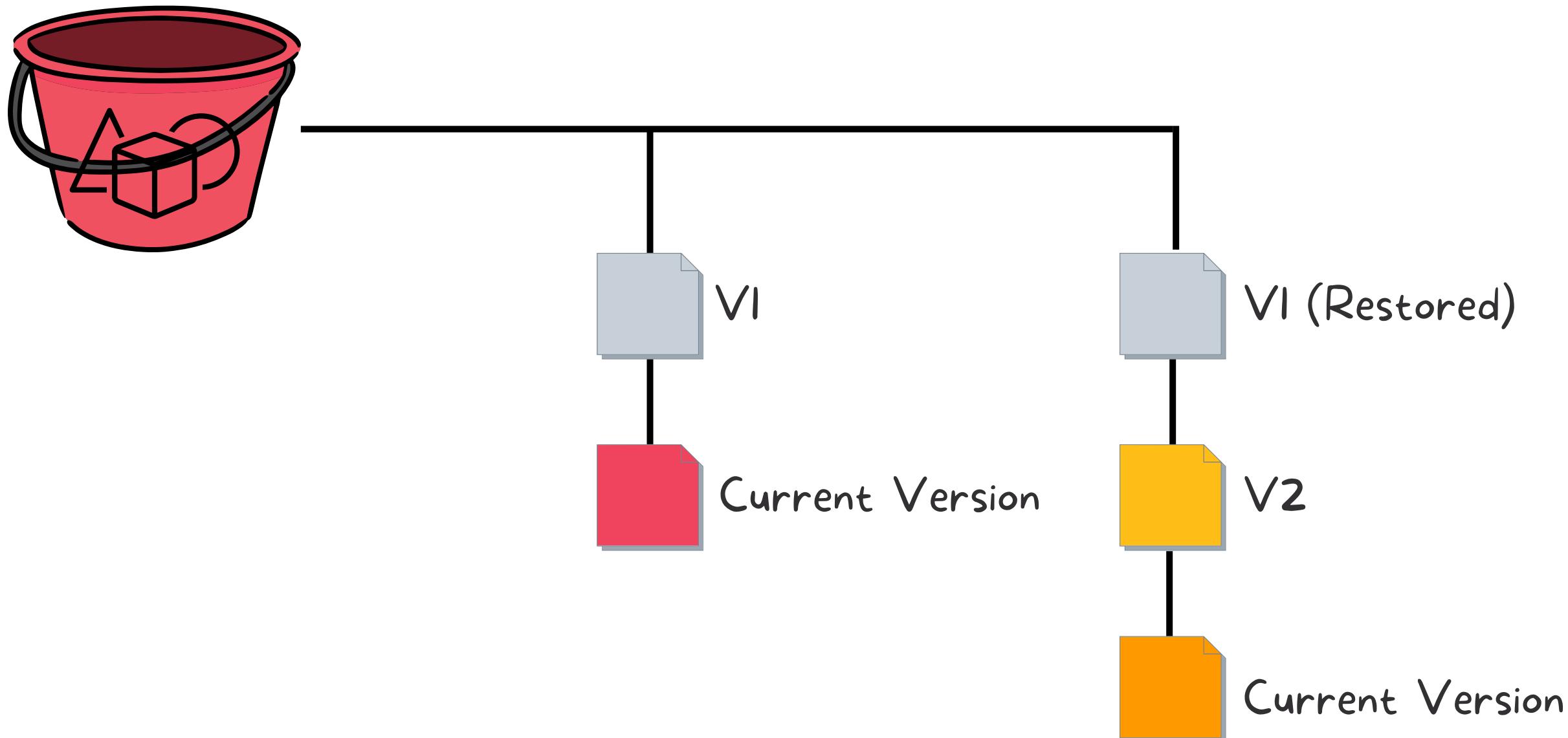
- If enable the feature, this is default encryption option
- Amazon S3 encrypts objects before saving to s3 storage and decrypts objects when you download

Client-side Encryption

- Encrypt data on client side and upload the encrypted files to S3
- In this case, we have to manage the encryption process



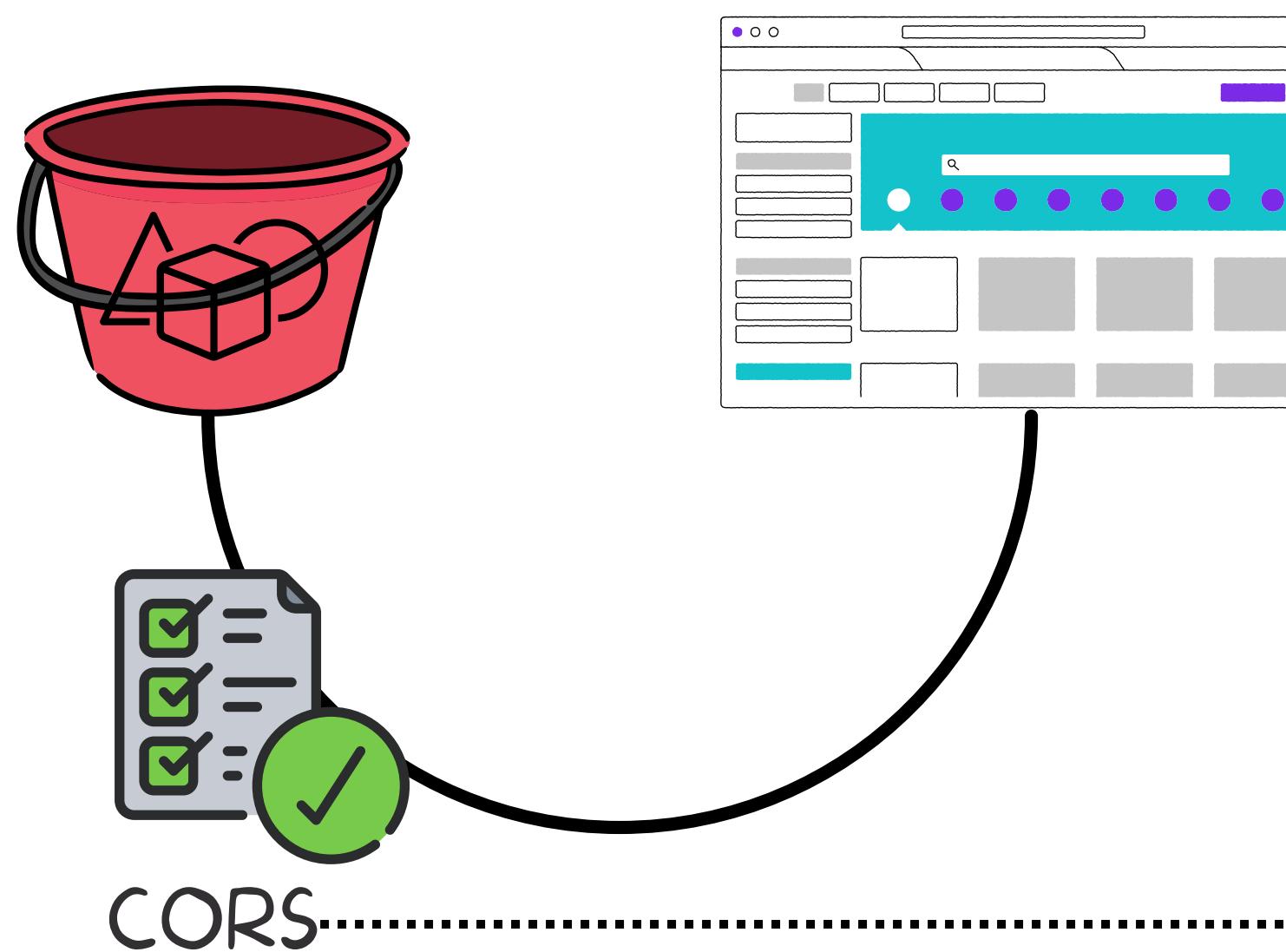
Amazon S3 Versioning



Amazon S3 Access Control - CORS



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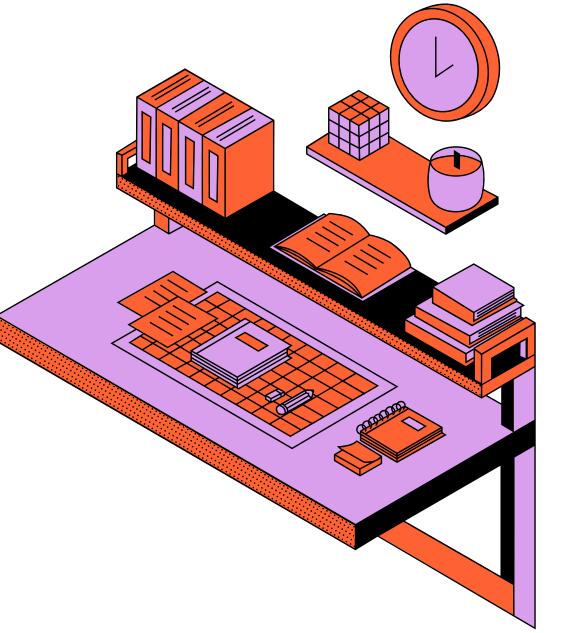


```
<corsConfiguration>
  <corsRule>
    <allowedOrigin>http://www.example.com</allowedOrigin>
    <allowedMethod>PUT</allowedMethod>
    <allowedMethod>POST</allowedMethod>
    <allowedMethod>DELETE</allowedMethod>
    <allowedHeader>*</allowedHeader>
    <maxAgeSeconds>3000</maxAgeSeconds>
    <exposeHeader>x-amz-server-side-encryption</exposeHeader>
    <exposeHeader>x-amz-request-id</exposeHeader>
    <exposeHeader>x-amz-id-2</exposeHeader>
  </corsRule>
</corsConfiguration>
```



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How S3 can use?



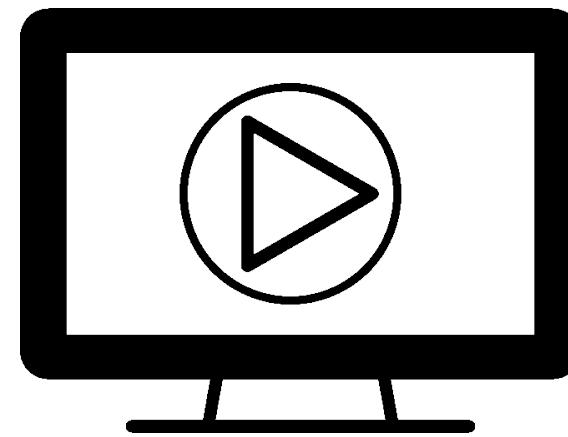


Use Case I

Storing and distributing static content and media



[https://\[bucket-name\].s3.amazonaws.com](https://[bucket-name].s3.amazonaws.com)

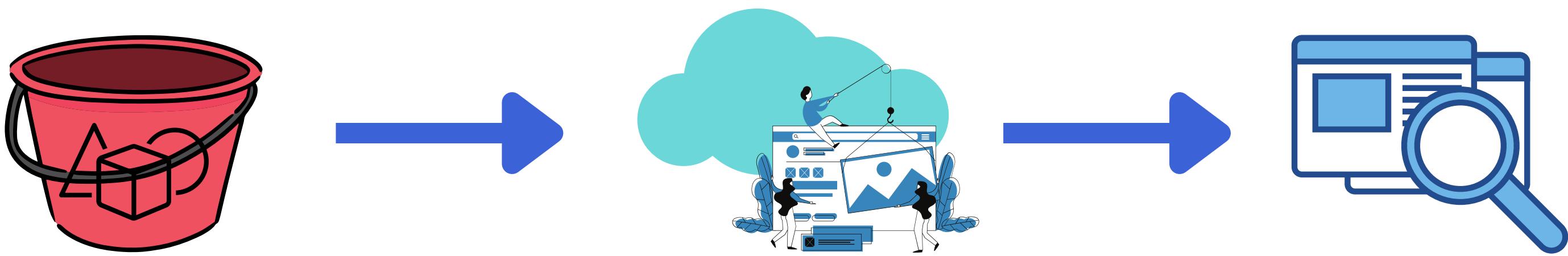


[https://\[bucket-name\].s3.amazonaws.com/video.mpeg](https://[bucket-name].s3.amazonaws.com/video.mpeg)



Use Case II

Host Static Websites

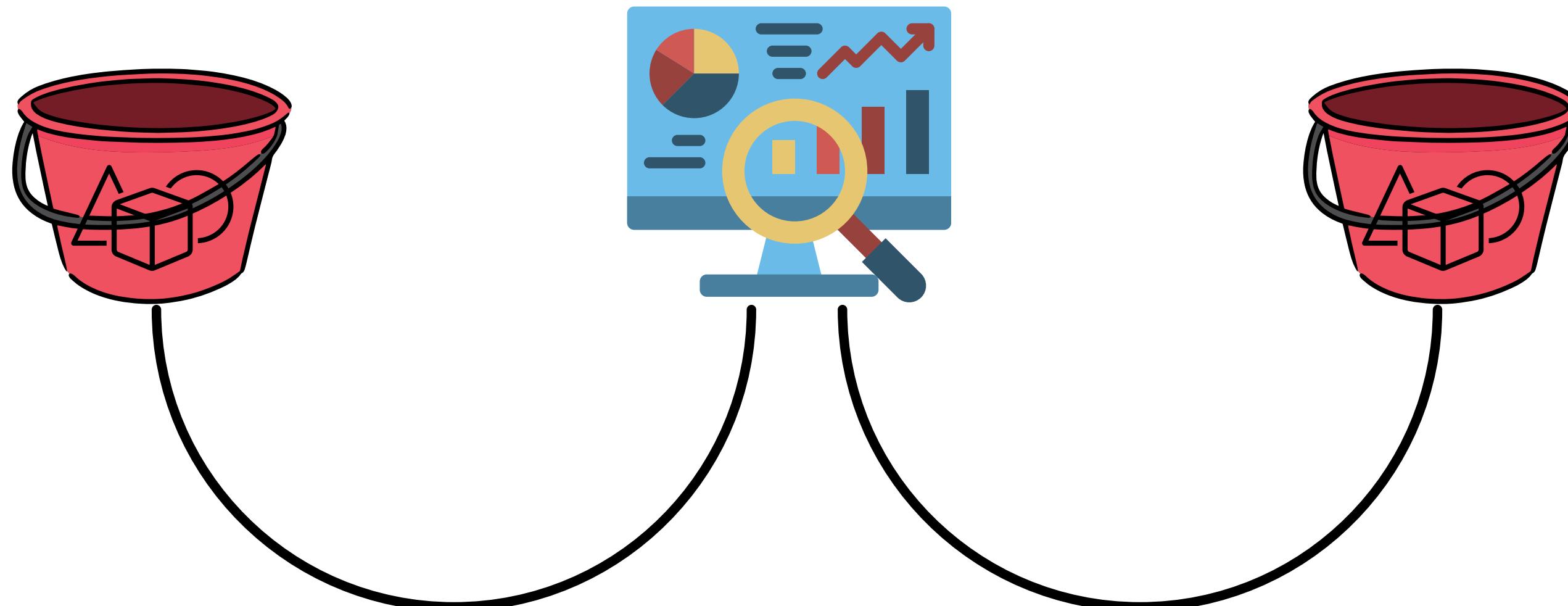


Use Case 3



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Data Store for large-scale analytics



Clickstream Analytics

Financial transaction Analytics

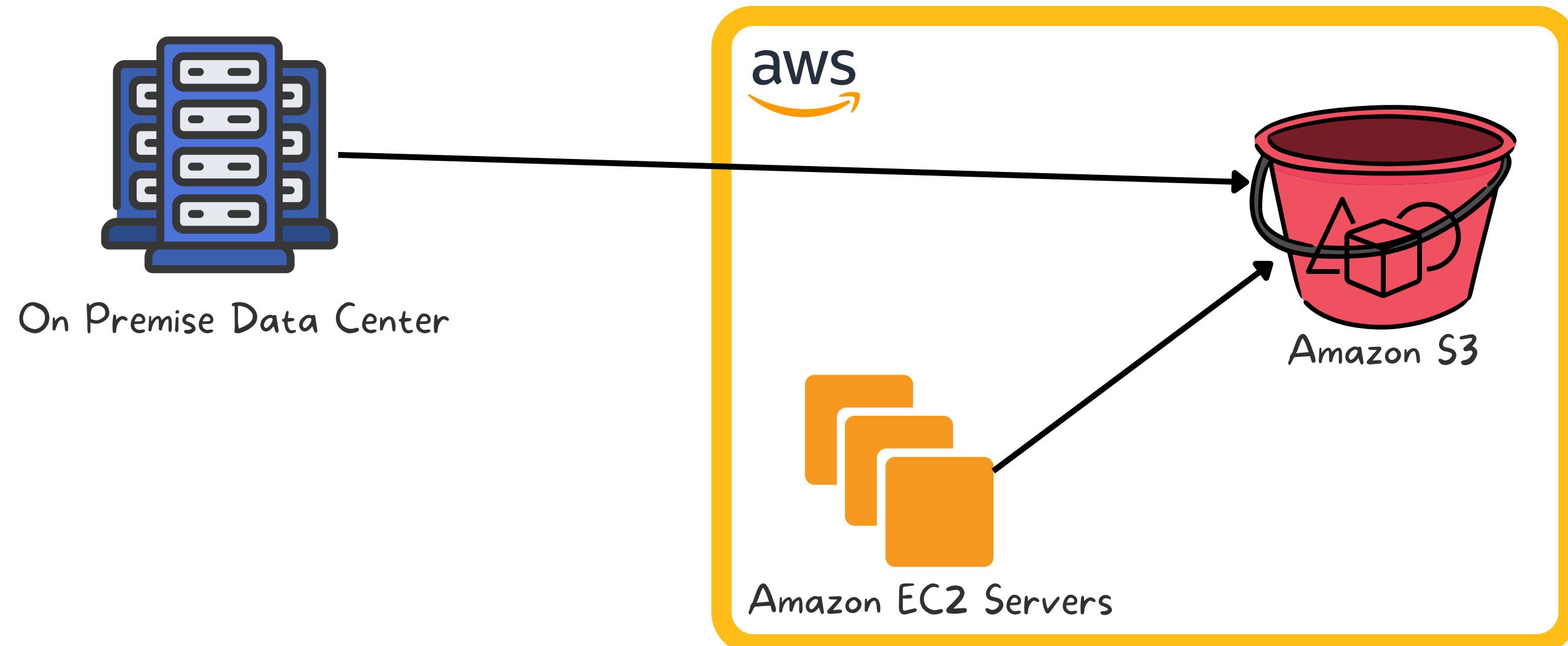
Media Transcoding

Use Case 4



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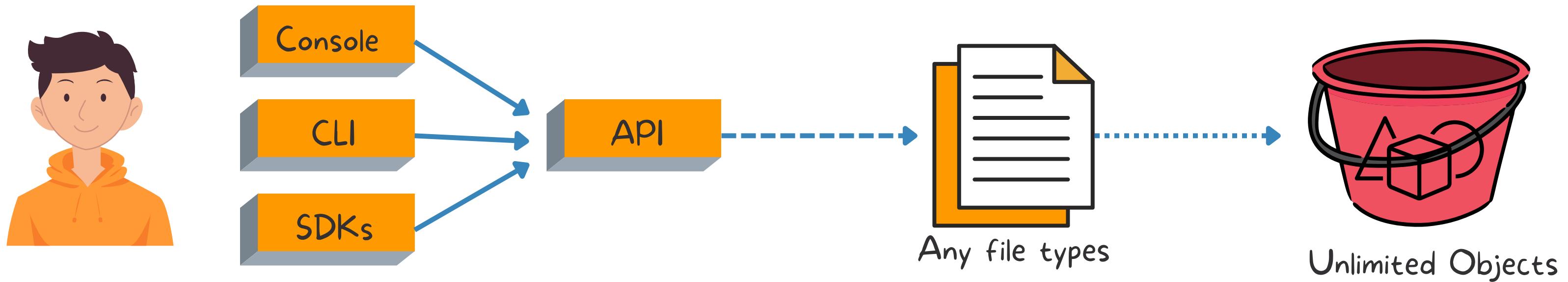
Using as A Backup Solution



Uploading Data into Amazon S3



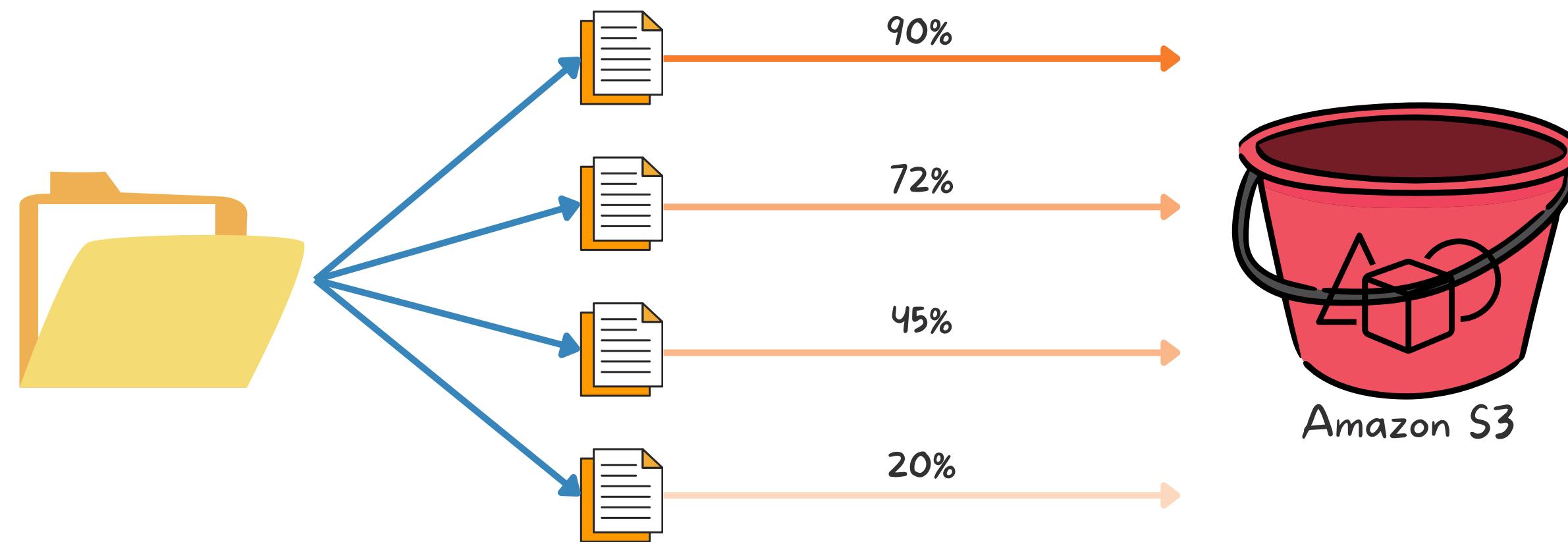
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Amazon S3 Multipart Upload



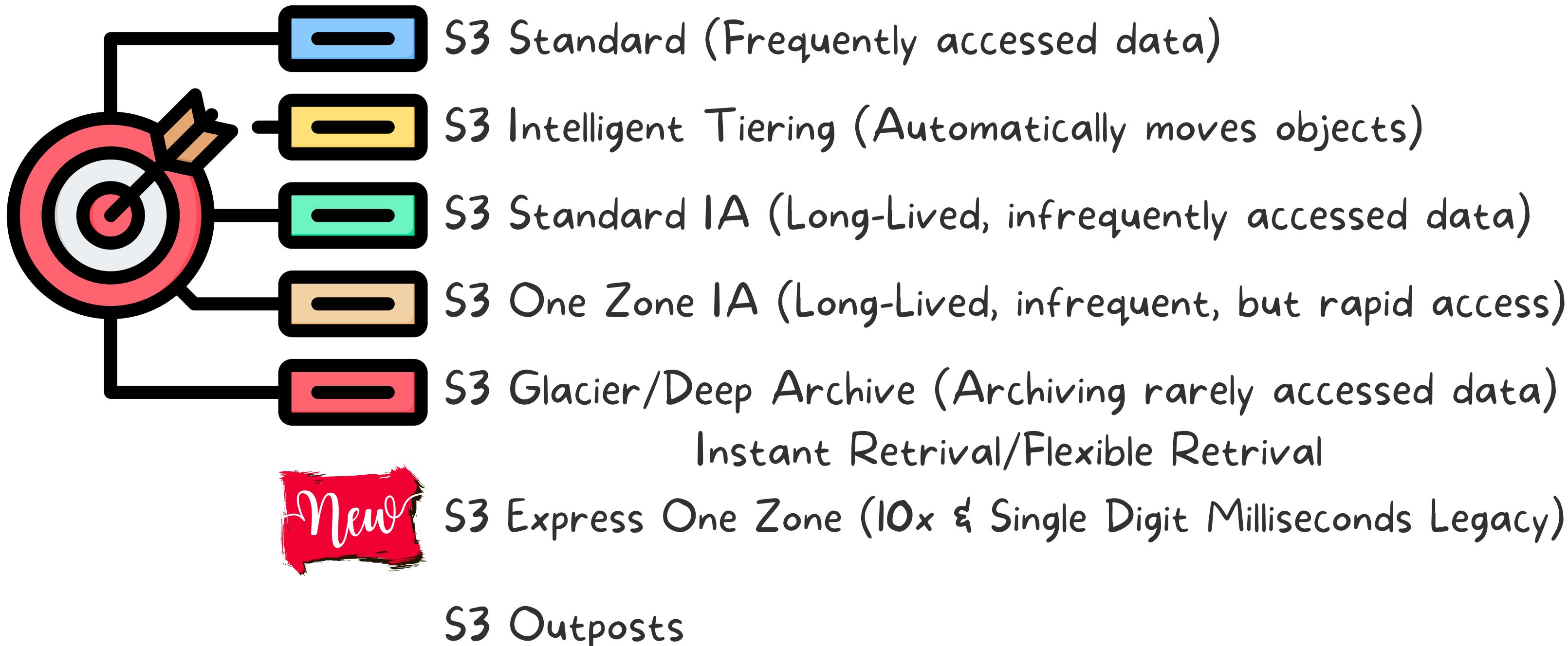
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Amazon S3 Storage Classes



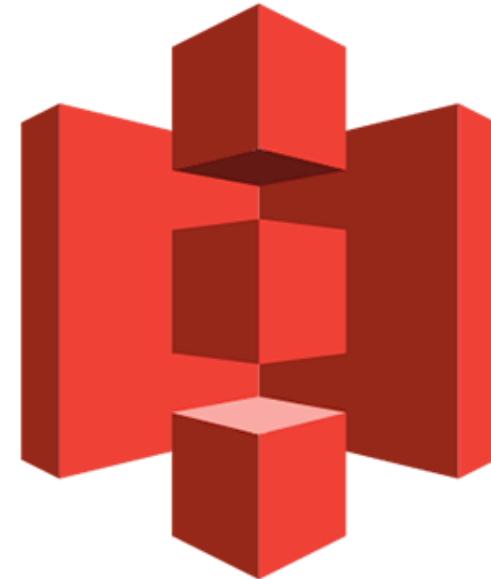
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Amazon S3 Glacier



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Amazon S3 Glacier

Instant Retrieval

Flexible Retrieval

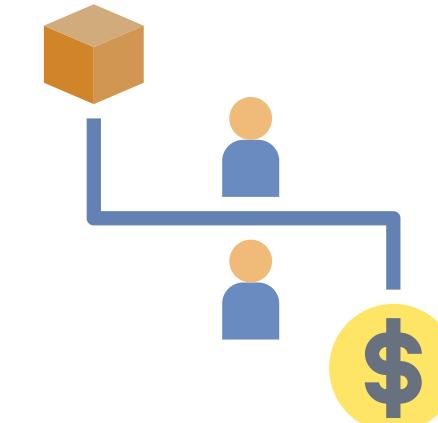
Deep Archive



Long-time data storage



Backup or Archival

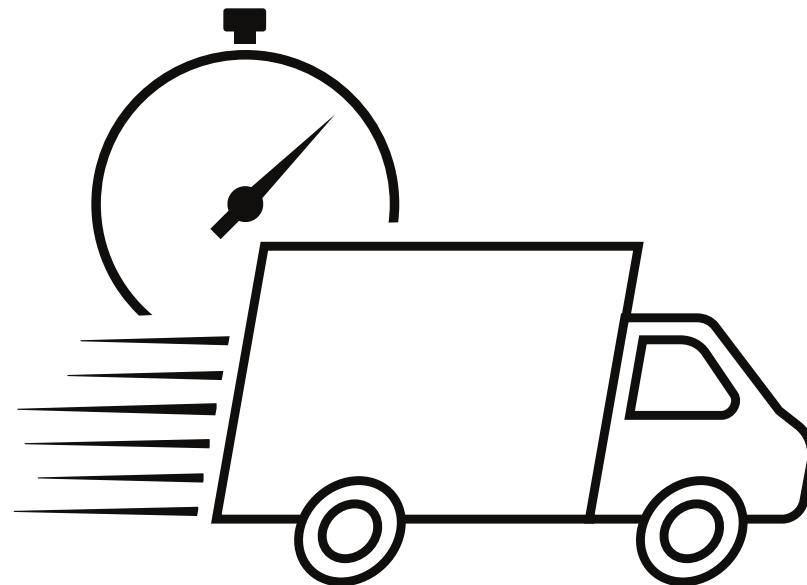


Very low cost

Glaicer Flexible Retrieval

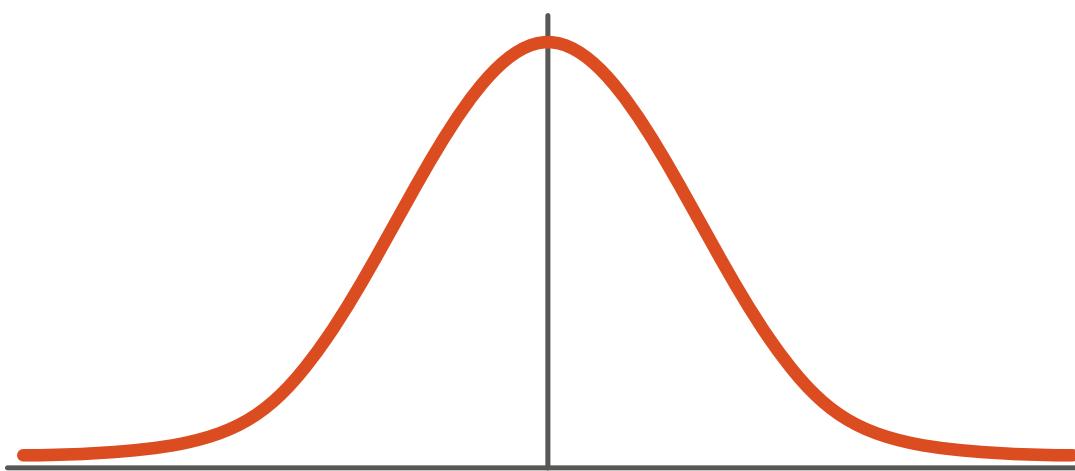


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Expedited

1 - 5 minutes



Standard

3 - 5 hours



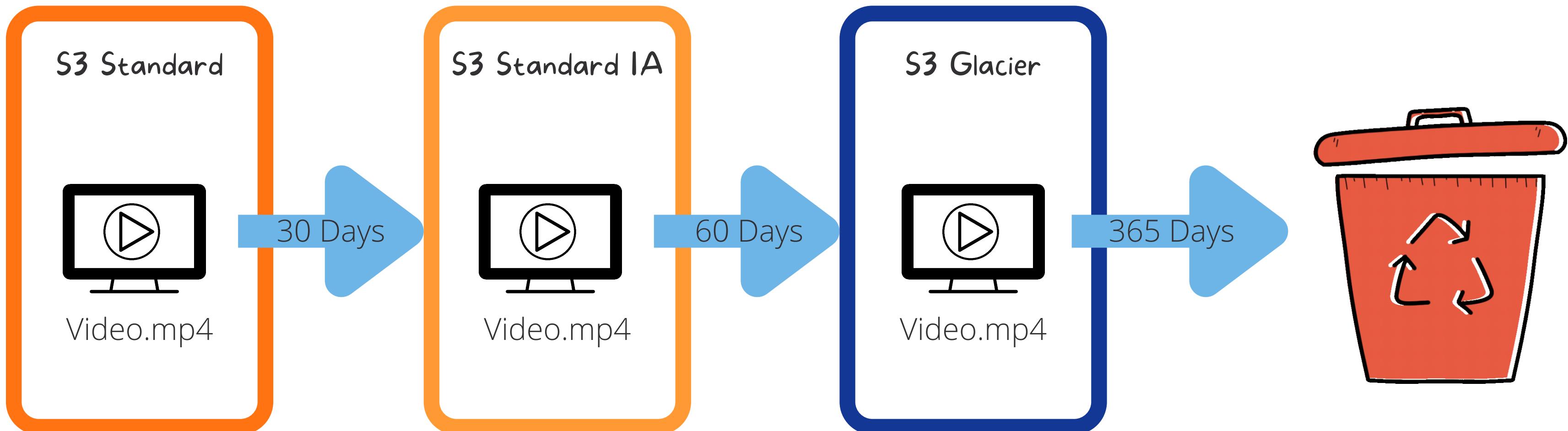
Bulk

5 - 12 hours

S3 Lifecycle Policies

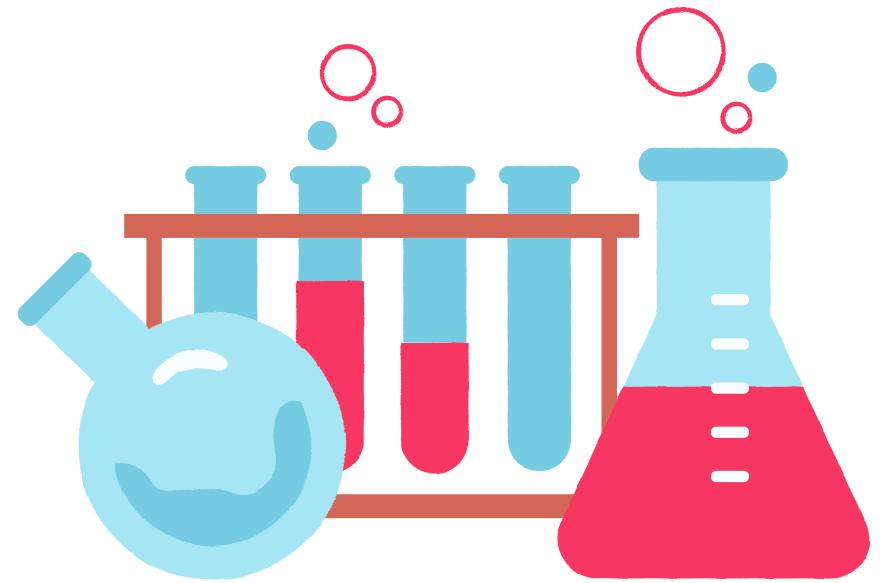


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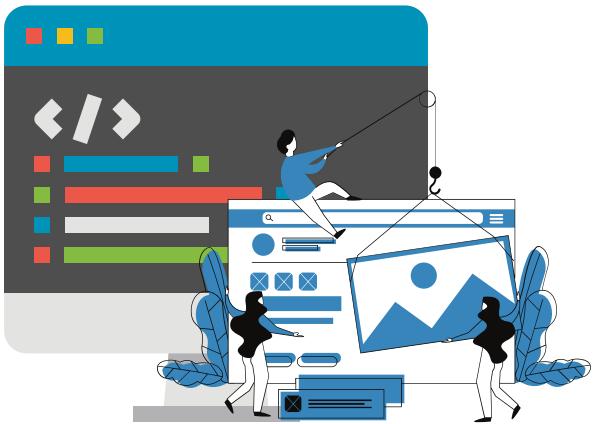
Lab : Hosting A Static Website



Lab Time



Create an S3 Bucket



Deploy your static code



Make your website public



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Thank you!

Architecting on AWS : Module 2