

Module 2



The architectural need

You have just started up and need a simple way to distribute, store, and analyze data reliably in the cloud.

Module Overview

- Problems that Amazon Simple Storage Service (Amazon S3) can solve
- Storing content efficiently
- Problems that Amazon Glacier can solve
- Choosing a region

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Amazon S3

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Amazon S3



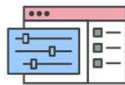
Amazon S3



Object-level storage



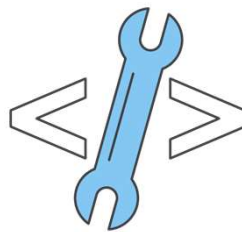
Designed for 99.999999999% durability



Event triggers

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Amazon S3



What problems does this help
you to solve?

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Amazon S3 Use Case 1



Storing and distributing static web content and media



[https://s3-ap-northeast-1.amazonaws.com/\[bucket name\]/](https://s3-ap-northeast-1.amazonaws.com/[bucket name]/)



[https://s3-ap-northeast-1.amazonaws.com/\[bucket name\]/Preview2.mp4](https://s3-ap-northeast-1.amazonaws.com/[bucket name]/Preview2.mp4)

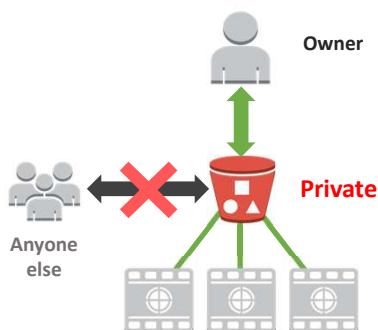


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Amazon S3 Access Control - General

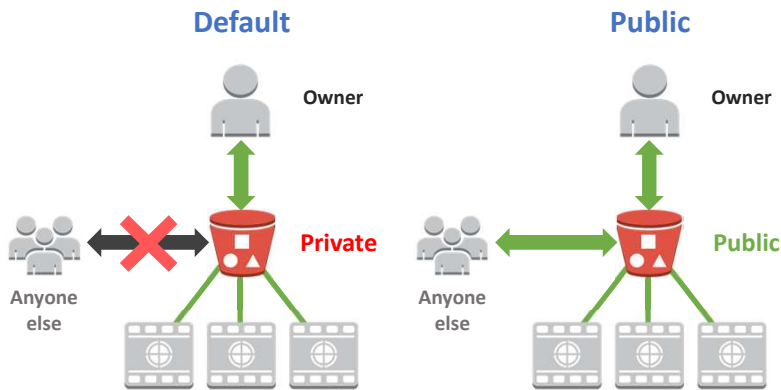


Default



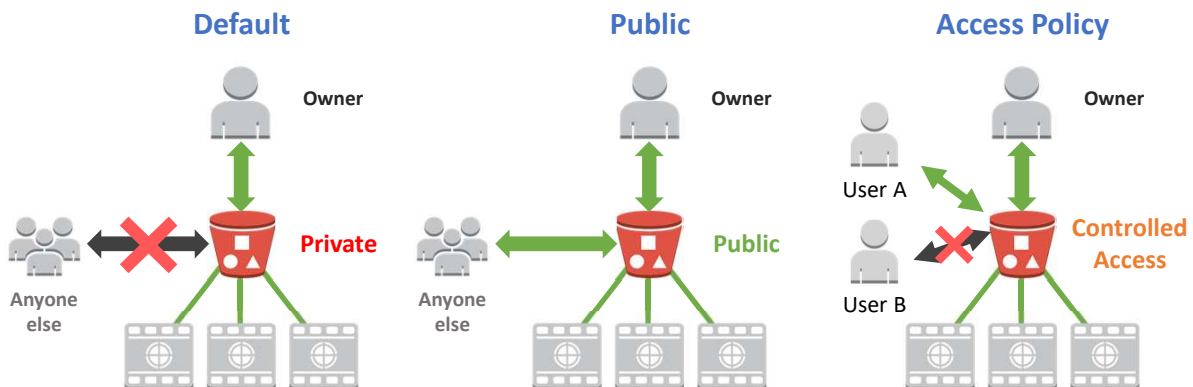
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Amazon S3 Access Control - General



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Amazon S3 Access Control - General



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Amazon S3 Access Control - Bucket Policies



```
{
  "Version": "2012-10-17",
  "Id": "Policy1415115909152",
  "Statement": [
    {
      "Sid": "Access-to-specific-VPCE-only",
      "Effect": "Deny",
      "Action": "s3:*",
      "Resource": [
        "arn:aws:s3:::examplebucket",
        "arn:aws:s3:::examplebucket/*"
      ],
      "Condition": {
        "StringNotEquals": {
          "aws:sourceVpce": "vpce-1a2b3c4d"
        }
      },
      "Principal": "*"
    }
  ]
}
```

AWS Policy Generator

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Amazon S3 Use Case 2



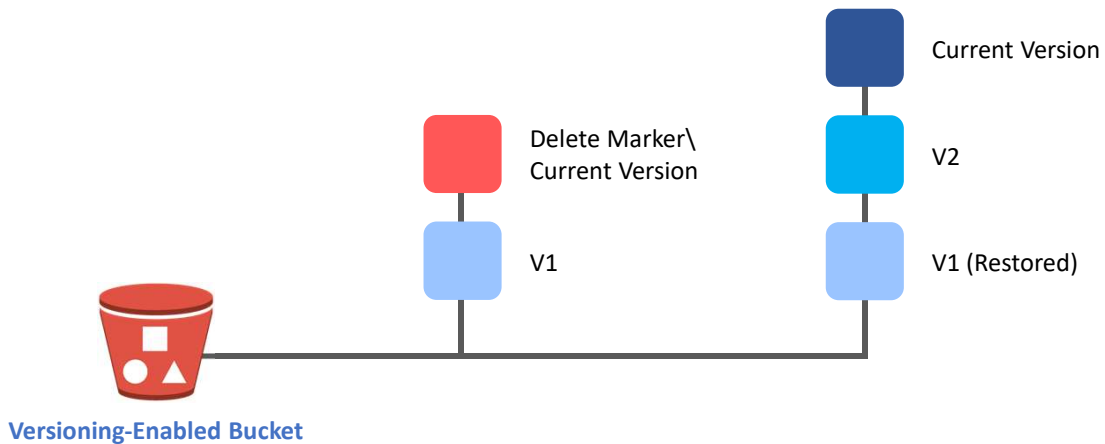
Host entire static websites



HTML files, images, videos, and client-side scripts

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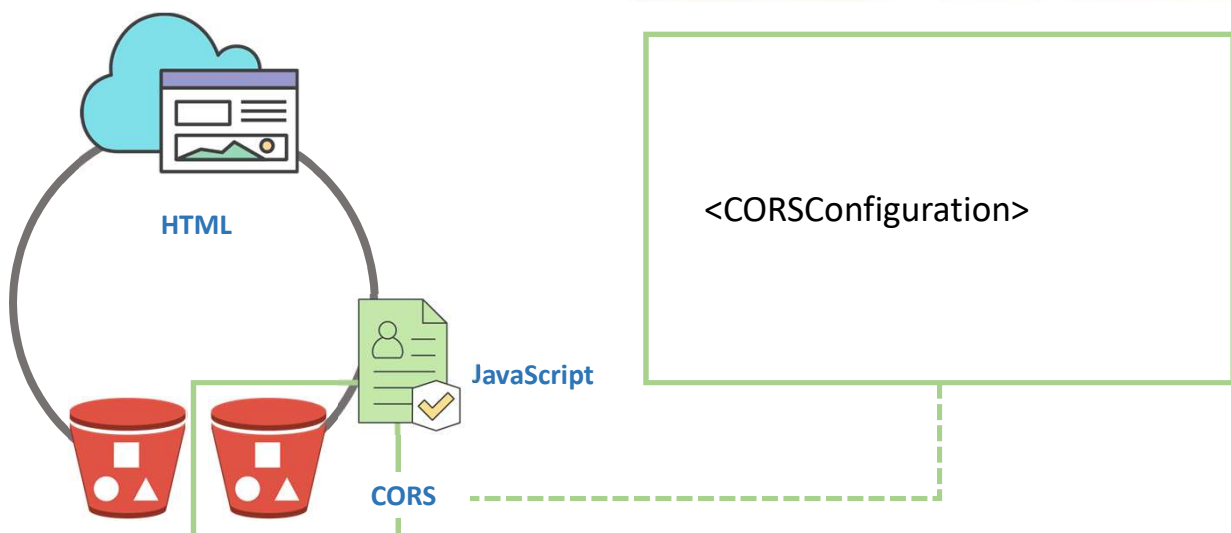
Amazon S3 Versioning



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* Consider using S3 Object Lock for data retention or protection

Amazon S3 Access Control - CORS

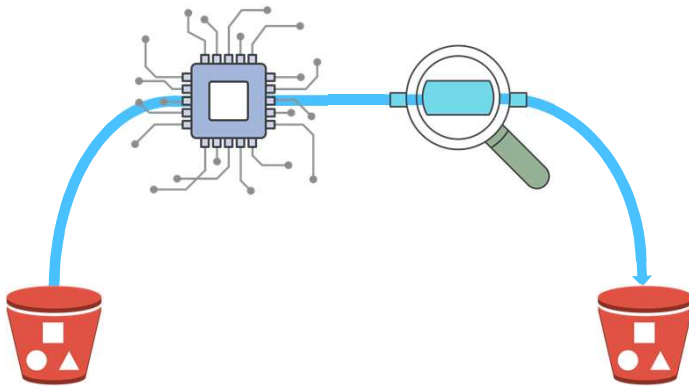


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Amazon S3 Use Case 3



Data store for computation and large-scale analytics



Financial transaction analysis

Clickstream analytics

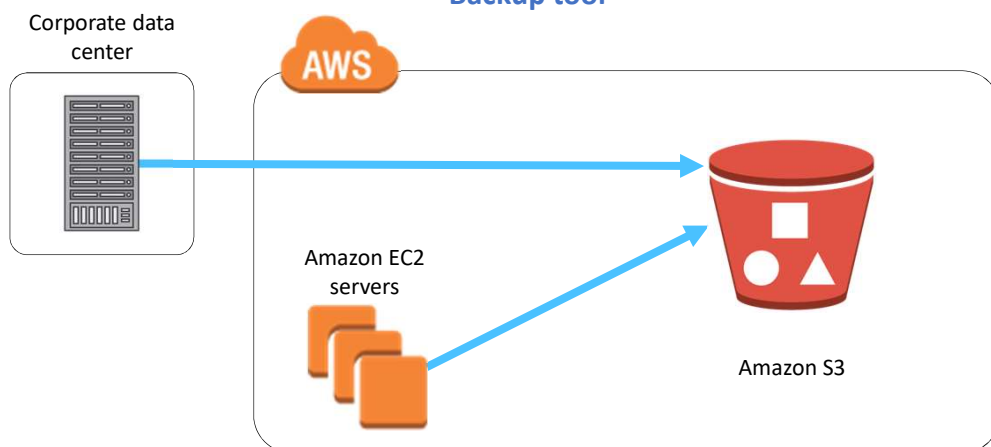
Media transcoding

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Amazon S3 Use Case 4

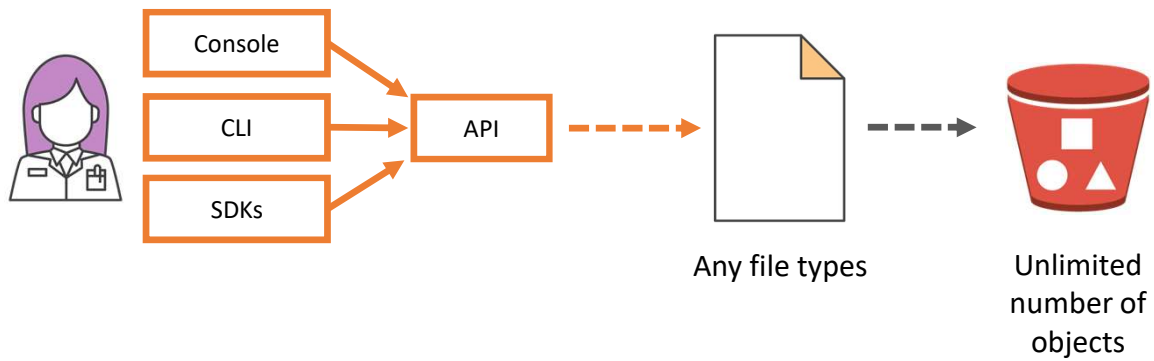


Backup tool



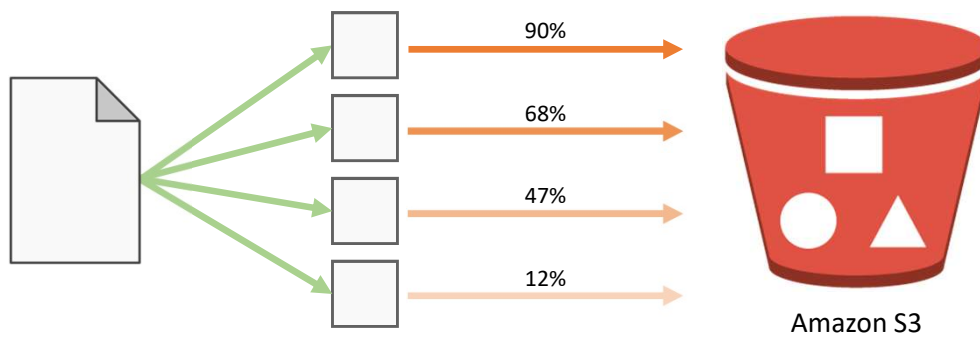
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Moving Data into Amazon S3



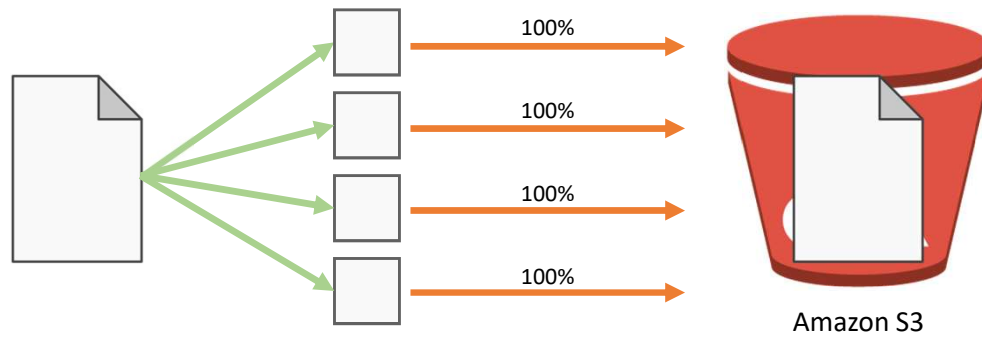
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Amazon S3 Multipart Upload



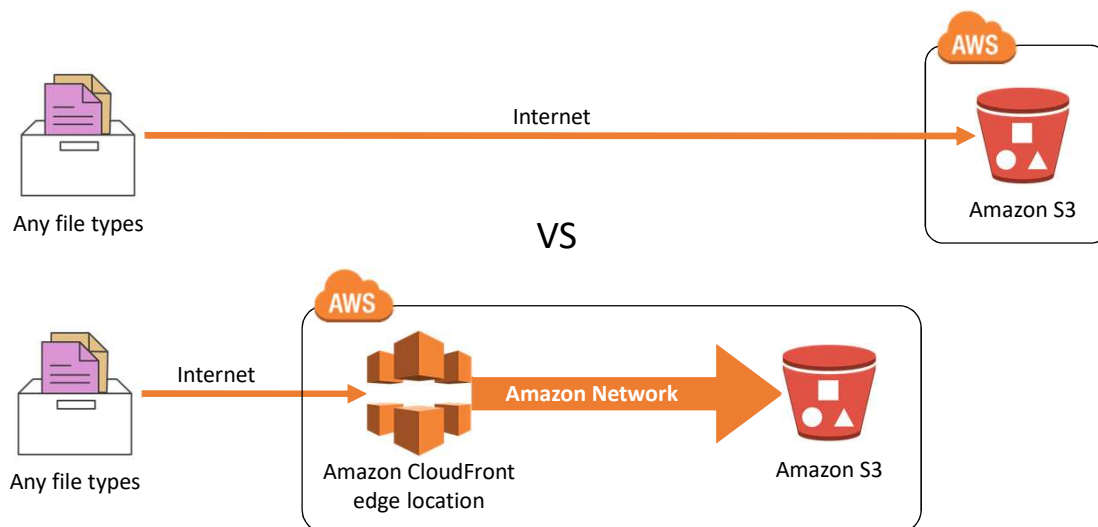
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Amazon S3 Multipart Upload



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Amazon S3 Transfer Acceleration



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Moving Data into Amazon S3



AWS Snowball

Petabyte-scale data transport



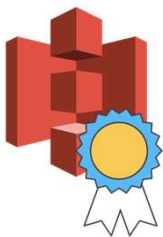
AWS Snowmobile

Exabyte-scale data transport



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When Should You Use Amazon S3?



Good use cases

When you need to write once,
read many times

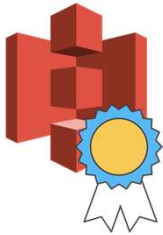
Spiky data access

Large number of users and
diverse amounts of content

Growing data sets

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When Should You Use Amazon S3?



Good use cases

- When you need to write once, read many times
- Spiky data access
- Large number of users and diverse amounts of content
- Growing data sets

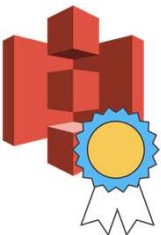
Not ideal use cases

- Block storage requirements
- Frequently changing data
- Long-term archival storage



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Amazon S3 Costs

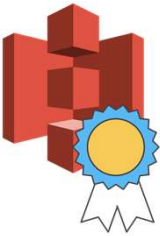


Pay only for what you use, including:

- GBs per month
- Transfer OUT to other regions or the internet
- PUT, COPY, POST, LIST, and GET requests

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Amazon S3 Costs

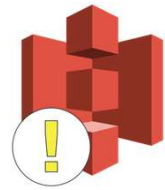


Pay only for what you use, including:

GBs per month
Transfer OUT to other regions or the internet
PUT, COPY, POST, LIST, and GET requests

You do NOT have to pay for:

Transfer IN to Amazon S3
Transfer OUT to Amazon EC2 in the same region, or to CloudFront



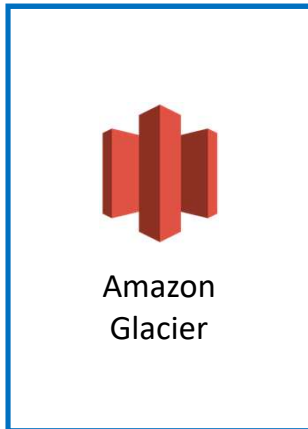
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Amazon Glacier



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Amazon Glacier



Long-term data storage



Archival or backup



Very low-cost storage

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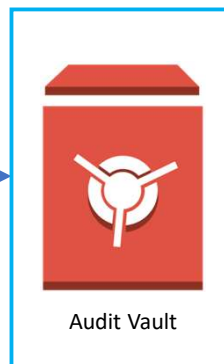
Amazon Glacier Archives and Vaults



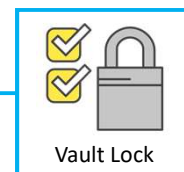
Audit.log



Audit Archive



Audit Vault



Vault Lock

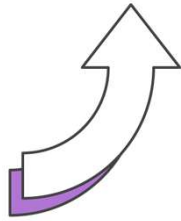


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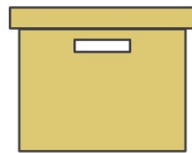
Costs Related to Amazon Glacier



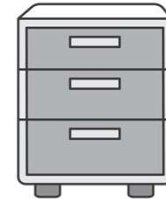
Retrieving data from Amazon Glacier



Expedited retrieval



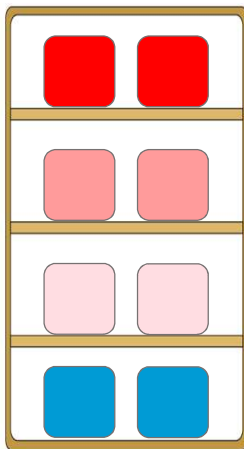
Standard retrieval



Bulk retrieval

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Amazon S3/Amazon Glacier Storage Classes



- **S3 Standard:**
General purpose
- **S3 Standard IA:**
Infrequent but rapid access
- **S3 One Zone IA:**
Re-creatable, infrequently accessed data
- **Amazon Glacier / Deep Archive:**
Archival data, cheapest available storage tier

Amazon S3 Intelligent Tiering

Automatically moves your objects between two access tiers of storage

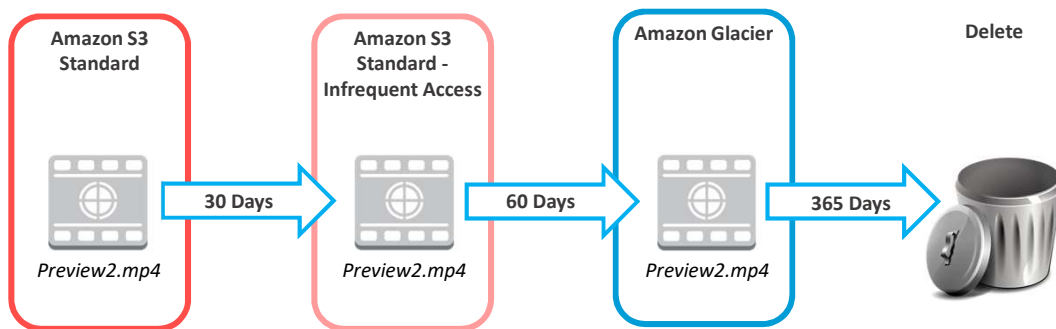


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Lifecycle Policies



Amazon S3 lifecycle policies allow you to delete or move objects based on age.



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Choosing Regions for your Architectures

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Choosing a Region



Data residency and regulatory compliance



Are there relevant region **data privacy** laws?



Can customer data be stored **outside the country**?



Can you meet your **governance** obligation?

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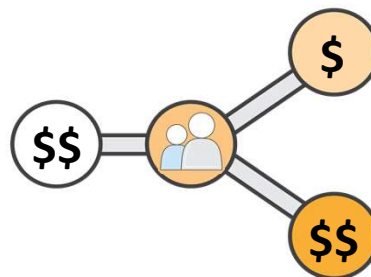
Choosing a Region



Proximity of users to data

Small differences in latency can impact customer experience

Choose the region closest to your users



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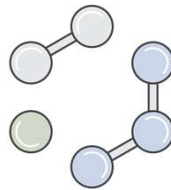
Choosing a Region



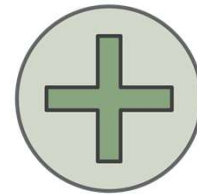
Service and feature availability



Some services not yet available in **all** regions



Can use some services **cross-region**, but at increased latency



Services **expanded** to new regions regularly

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Choosing a region



Cost Effectiveness

- Costs vary by region
- Some services like Amazon S3 have costs for transferring data out
- Consider the cost-effectiveness of replicating the entire environment in another region



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Lab M02-01: Hosting a Static Website

Lab M02-01: Hosting a Static Website

"I want to create a highly available static website"

Technologies used:

- Amazon S3

Lab M02-01: Hosting a Static Website



You will:

- Create an S3 Bucket
- Deploy your website
- Make your site publicly available



Website123



index.html
error404.html



Duration: 20m

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Thank You



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