



## Storage in AWS – Part 2

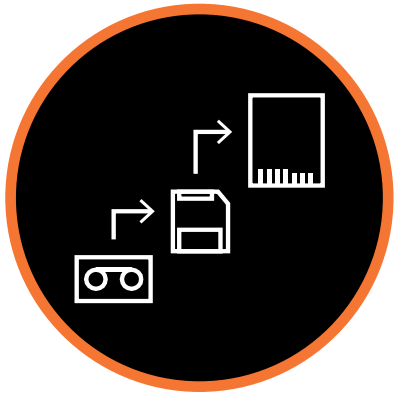




## Agenda

- Files Storages
- Amazon S3 Features
- AWS Backup

# File Storage



Decades of  
development



Default interface



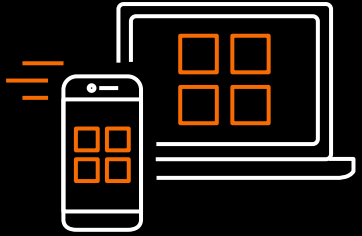
Simple, shared  
access



High performance



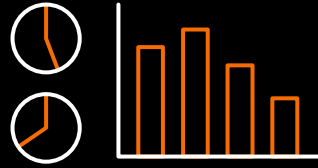
# Why so much file ?



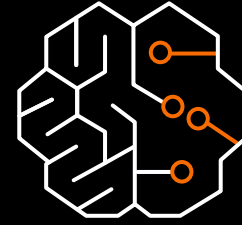
Enterprise IT applications



User shares



Line-of-business applications



Machine learning



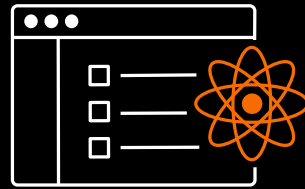
SaaS applications



Software build environments



Backup and disaster recovery



Web serving and content management

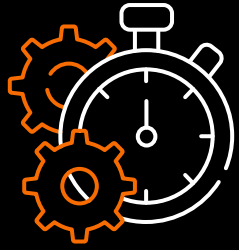


Data science and analytics

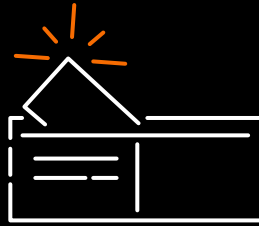


DevOps platforms

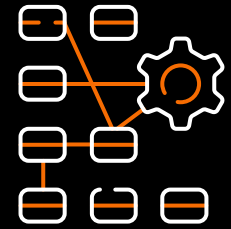
# Traditional File Storage



Time



Cost



Complexity



## File storage in AWS



Amazon Elastic File  
System (Amazon EFS)

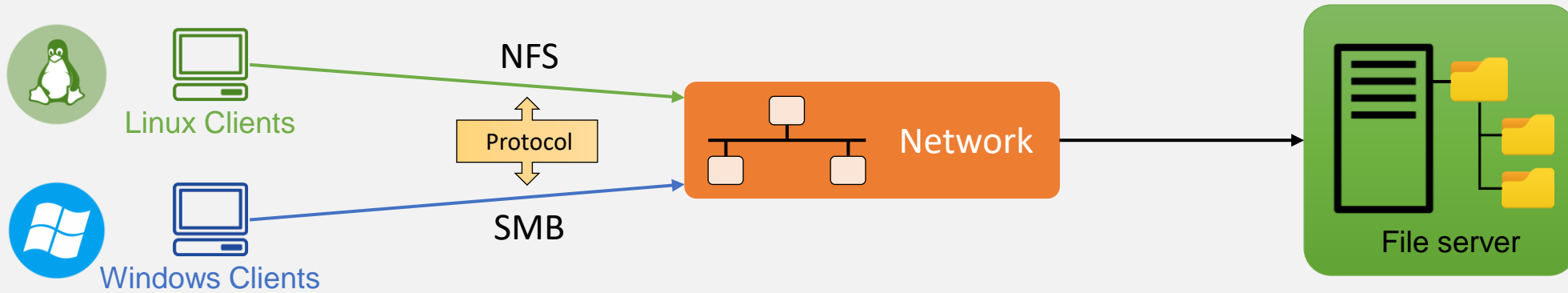


Amazon FSx

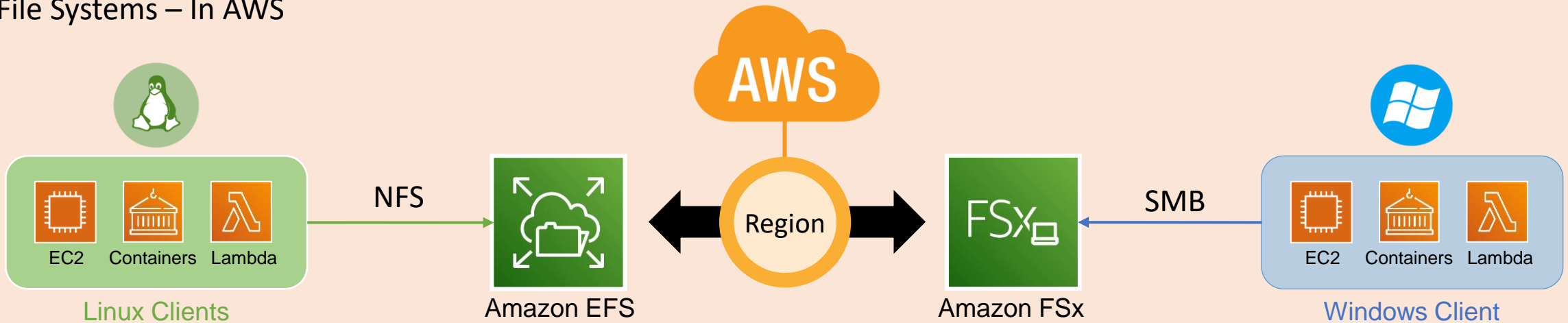


# File Systems over Network

## File Systems – On-Prem



## File Systems – In AWS

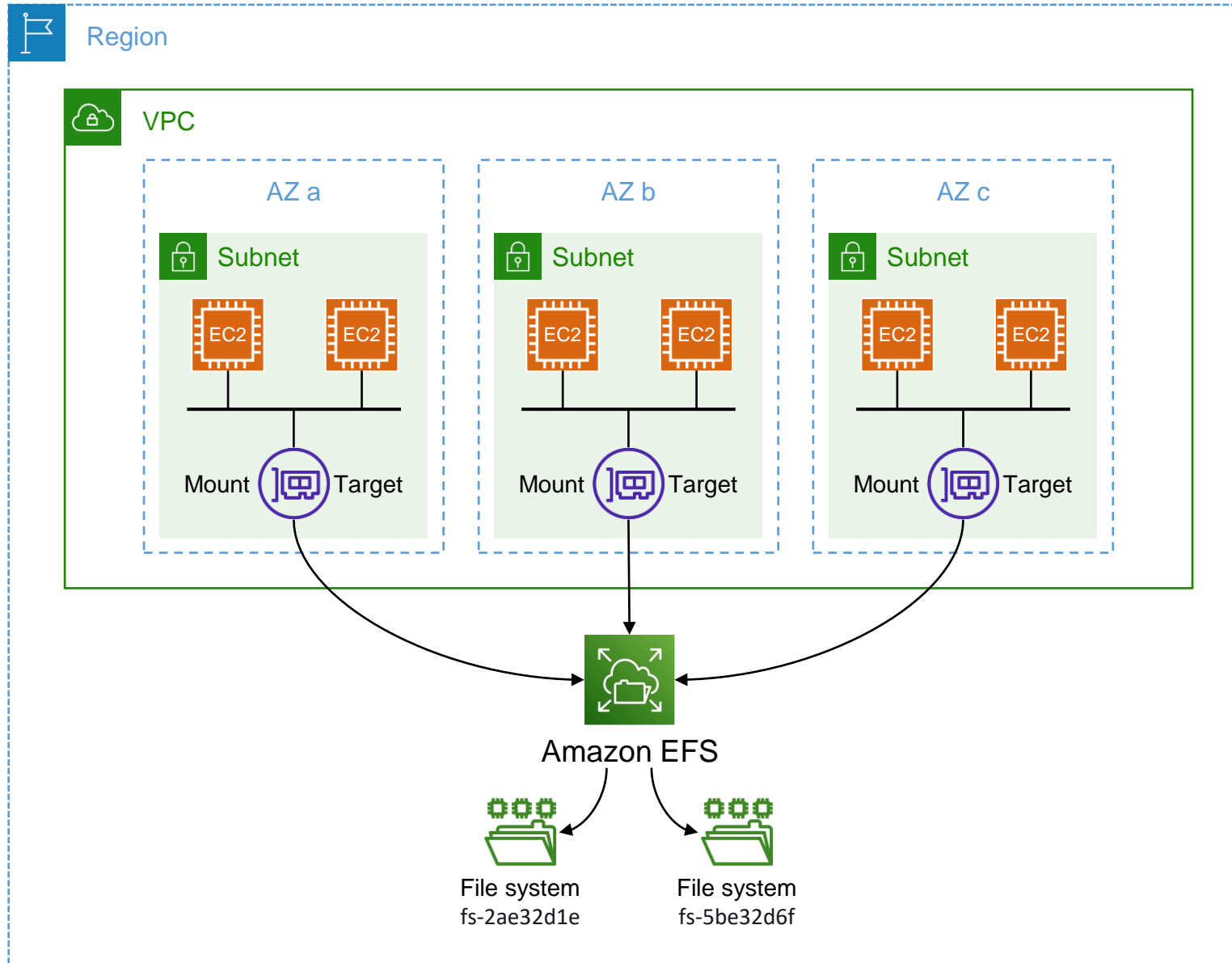




Amazon EFS



# Amazon EFS (Amazon Elastic File System)



- Fully managed
  - Highly available and durable
- Dynamic elasticity
  - Grow/Shrink
- Storage classes and lifecycle management
- NFS v4.0 and v4.1
- Can be accessed across
  - VPC
  - Regions
  - Accounts
  - On-Prem



Amazon FSx

FSx = File Systemx

X =

Your choice  
for  
your workload

# Amazon FSx is the easiest path to run NAS in the cloud



Amazon FSx  
for Lustre



Amazon FSx for  
Windows File Server



Amazon FSx  
for NetApp ONTAP



Amazon FSx  
for OpenZFS



Migrate to like-for-like storage with  
the same capabilities and APIs

 Re-architect

 Re-certify

 Re-invent

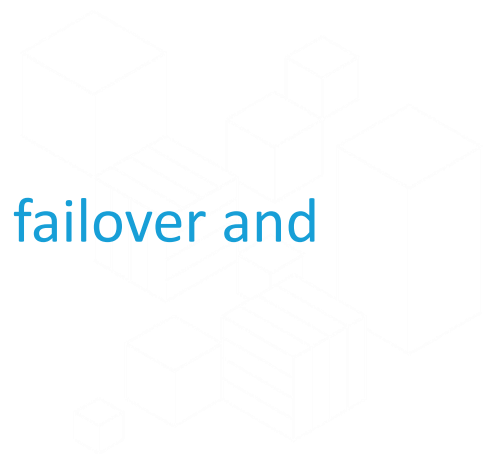
 Re-train

# Amazon FSx for Windows File Server

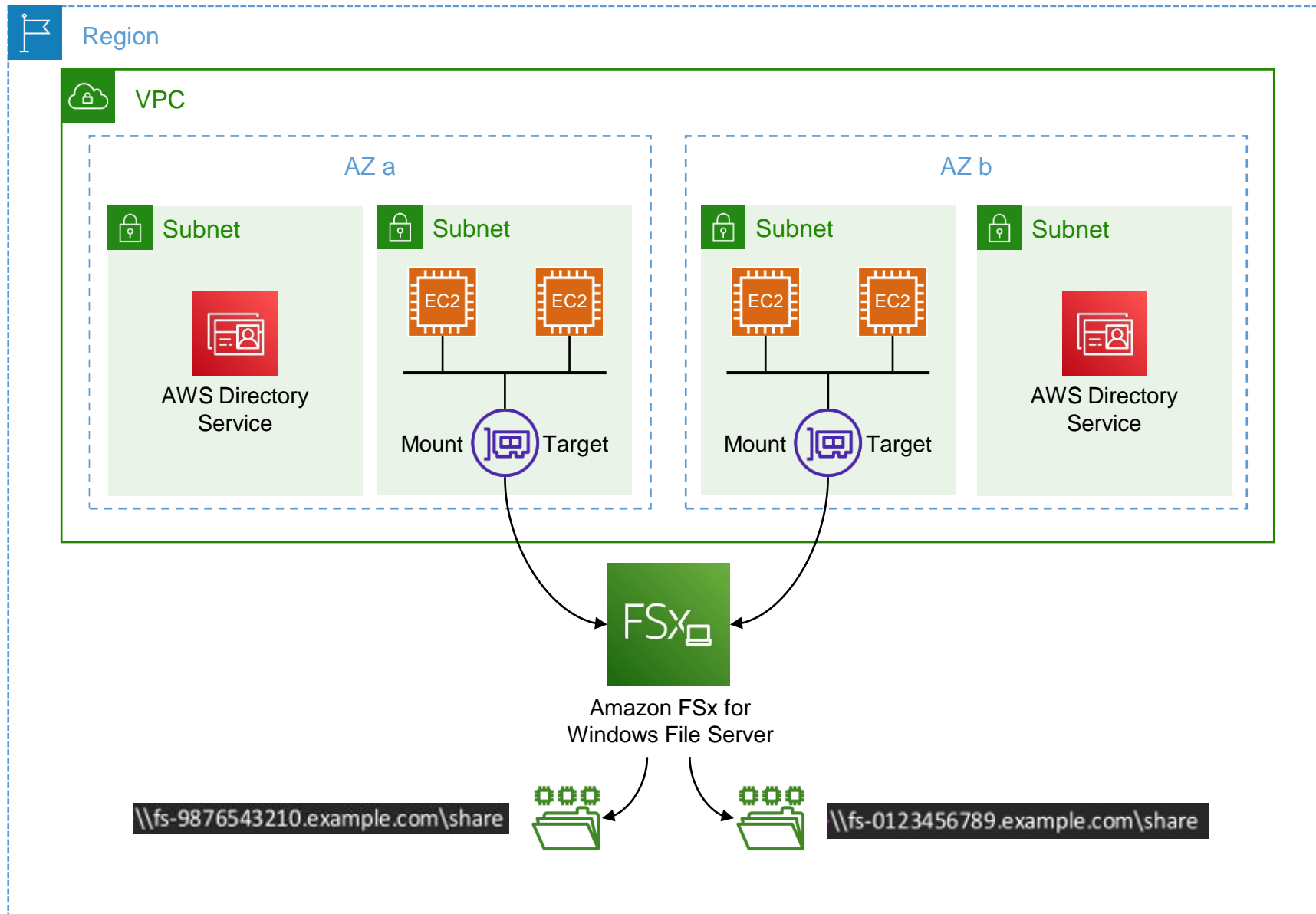


Amazon FSx for  
Windows File Server

- Use cases
  - Home directories, Highly available Microsoft SQL Server deployments, Lift-and-shift Windows applications
- Built on Windows Server
  - Integrates with your on-premises Microsoft Active Directory (AD) as well as with AWS Microsoft Managed AD.
- Fully managed
  - AWS manages updates and patches, failover and failback, backups



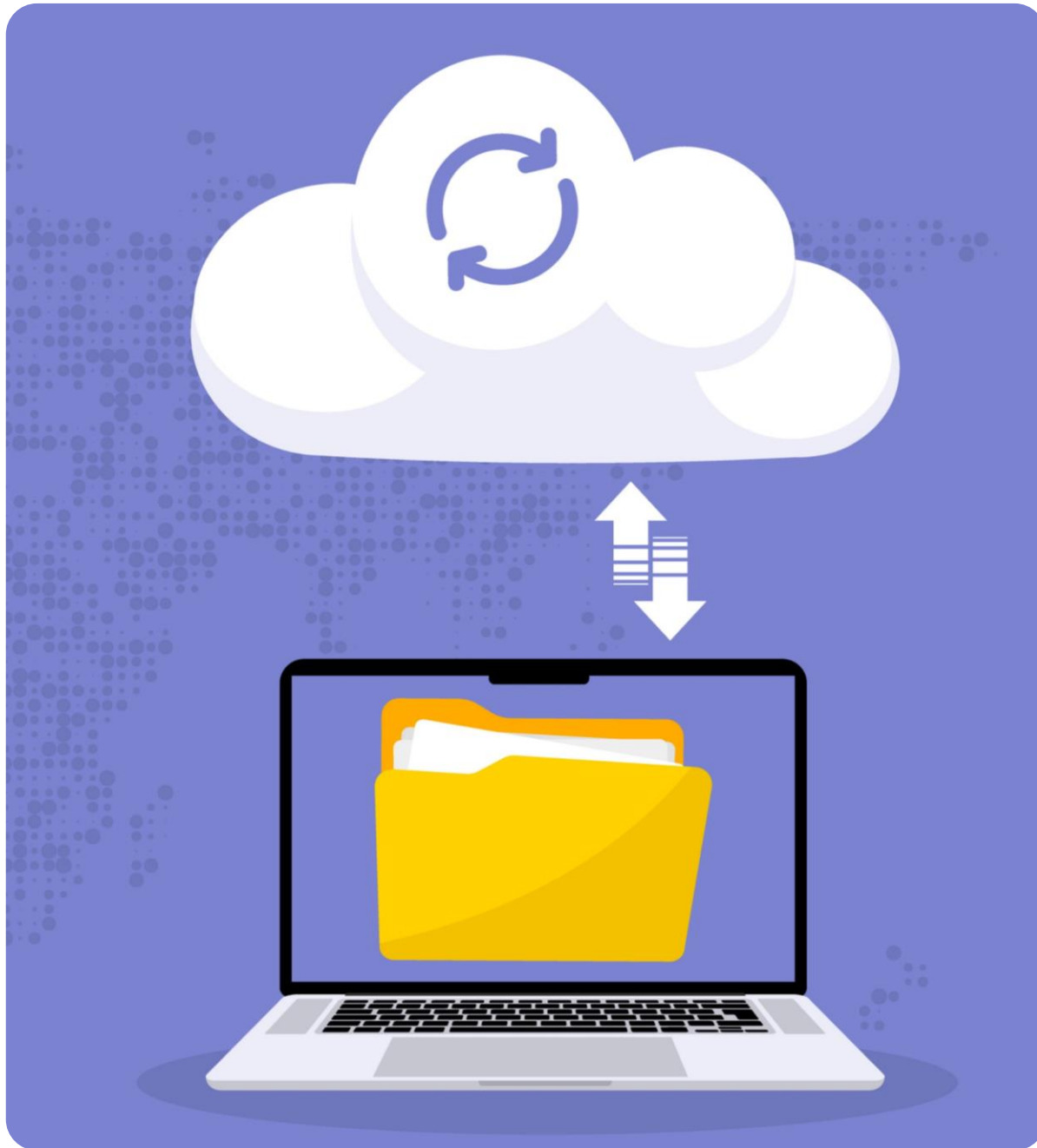
# Amazon FSx for Windows Architecture



- Multi-AZ availability and durability
- SMB 2.0 to 3.1.1
- DFS Namespace and Replication
- Can be accessed across
  - VPC
  - Regions
  - Accounts
  - On-Prem







Amazon S3  
Additional Feature

# Amazon S3 Additional Feature

Transfer  
Acceleration

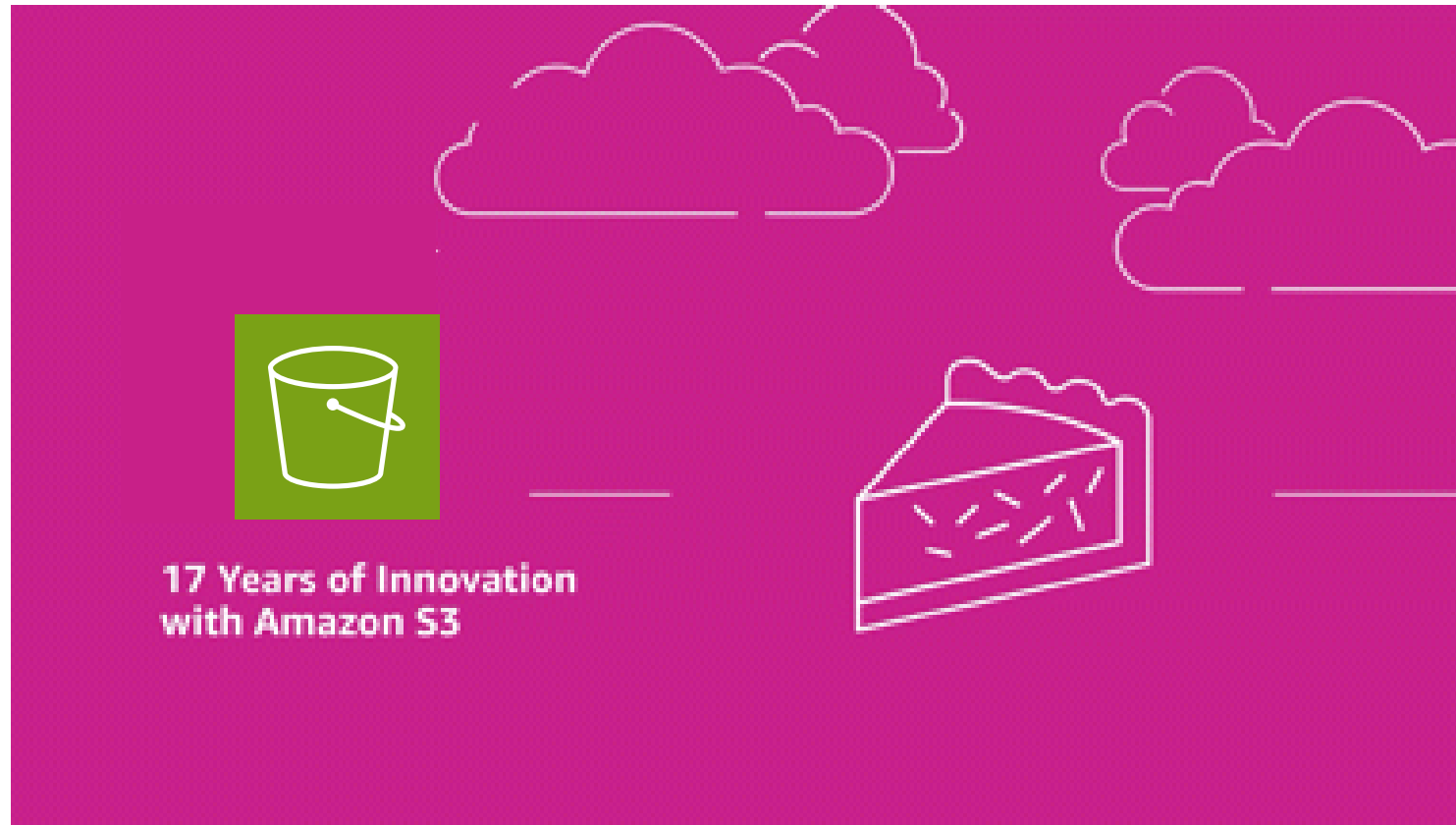
Access  
Point

Object  
Lambda

S3  
Select

Cross Region  
Replication

Batch  
Operations



Transfer  
Acceleration

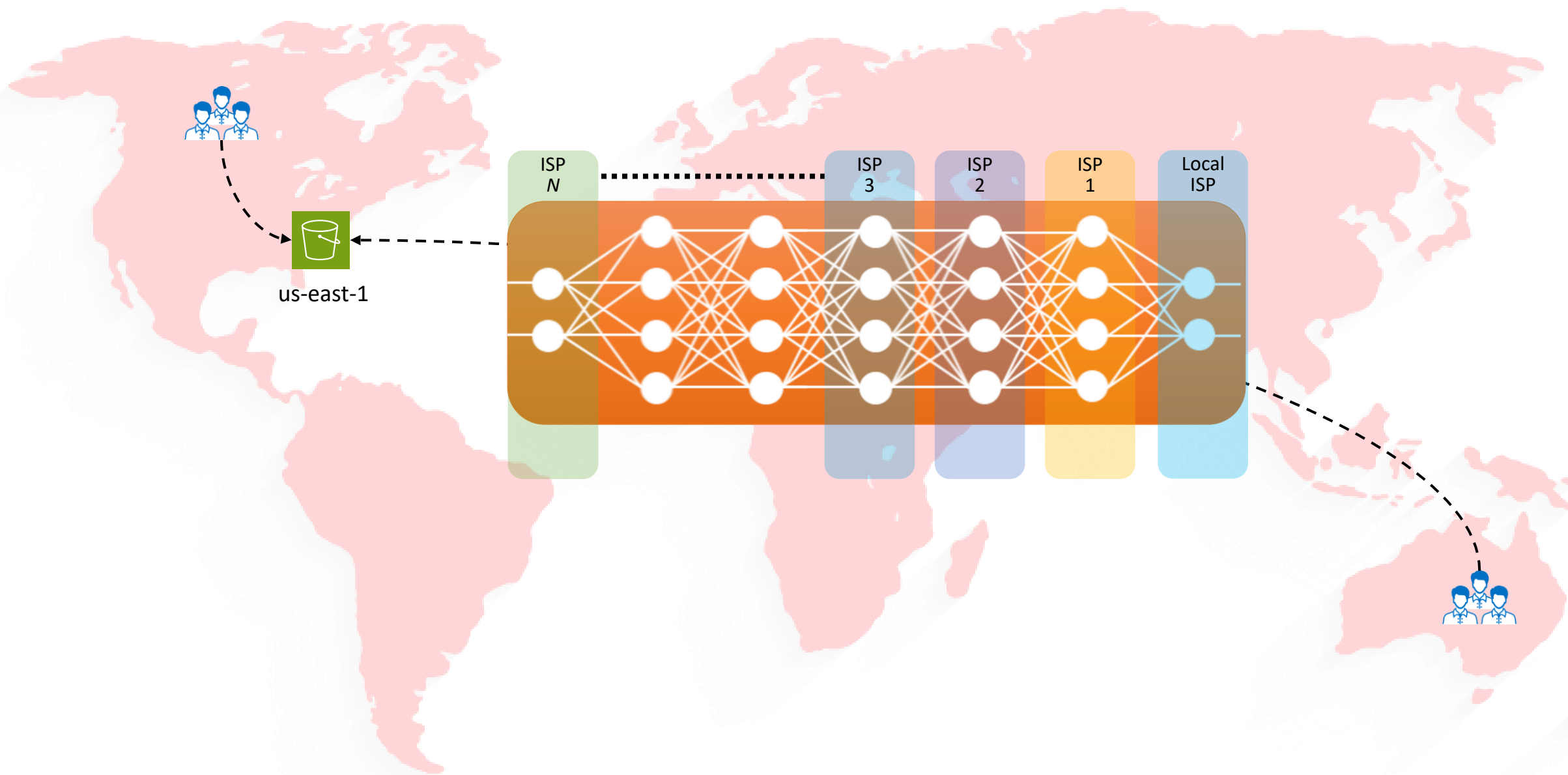
Access  
Point

Object  
Lambda

S3  
Select

Cross Region  
Replication

Batch  
Operations



Transfer  
Acceleration

Access  
Point

Object  
Lambda

S3  
Select

Cross Region  
Replication

Batch  
Operations



Global  
Network  
powered by  
aws

Edge Location



Amazon  
CloudFront

Local  
ISP



Transfer  
Acceleration

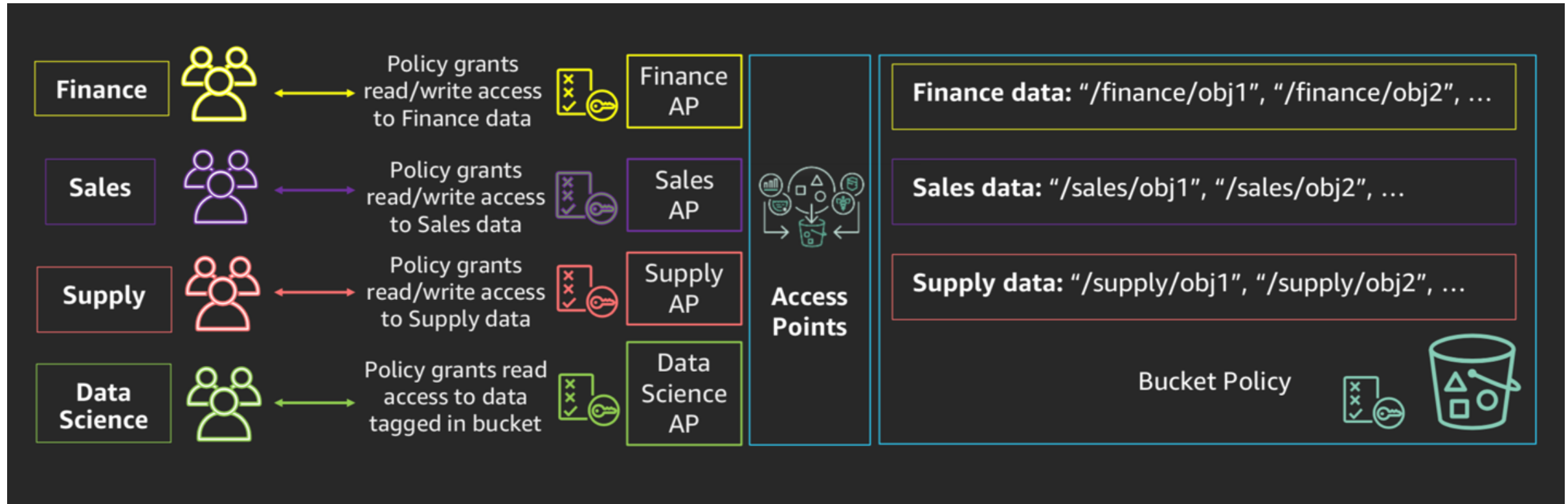
Access  
Point

Object  
Lambda

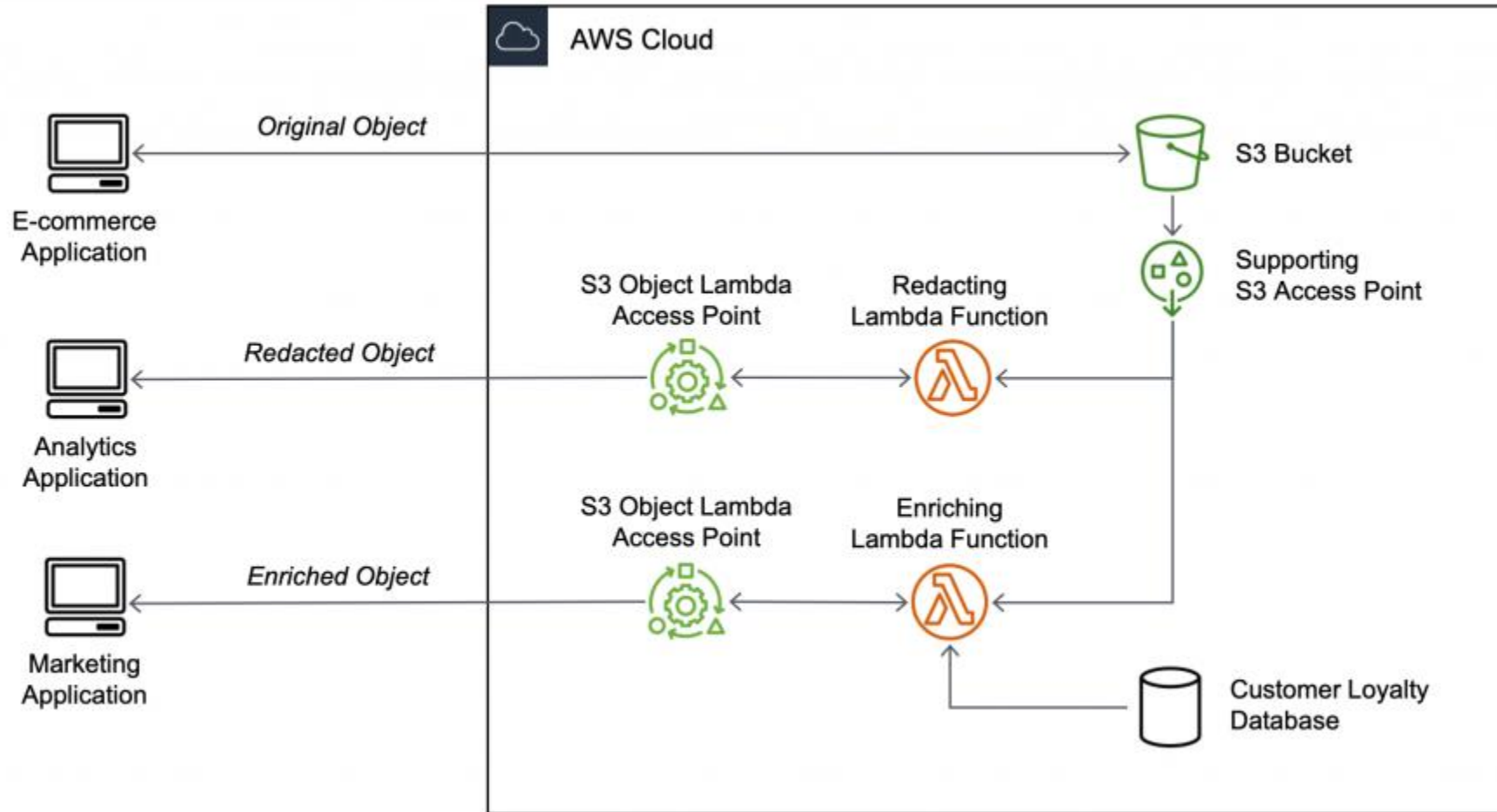
S3  
Select

Cross Region  
Replication

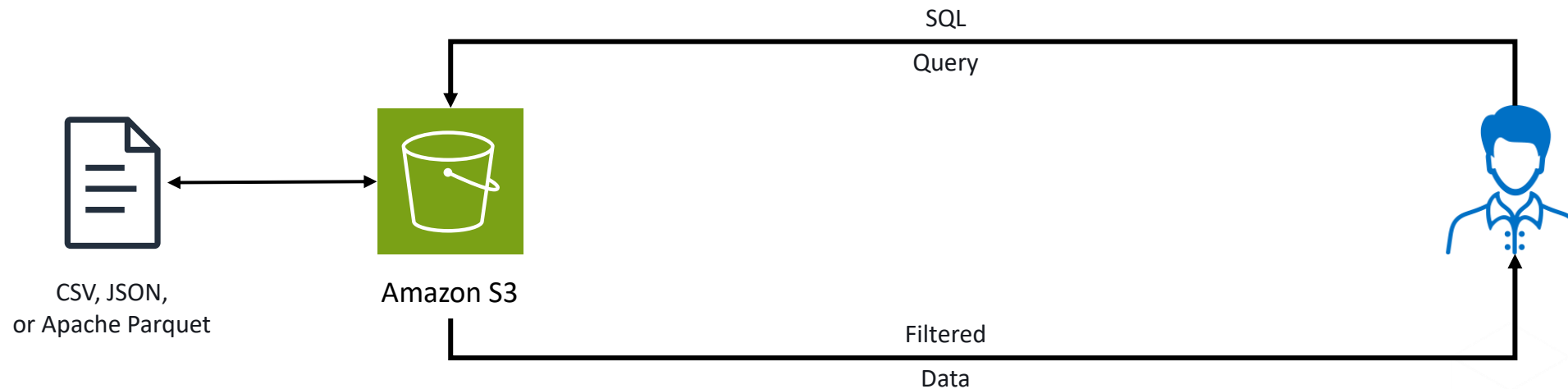
Batch  
Operations







- With Amazon S3 Select, you can use structured query language (SQL) statements to filter the contents of an Amazon S3 object and retrieve only the subset of data that you need.



- By using Amazon S3 Select to filter this data, you can reduce the amount of data that Amazon S3 transfers, which reduces the cost and latency to retrieve this data.





**Amazon S3 Replication**  
Enables automatic,  
asynchronous copying of  
objects across Amazon  
S3 buckets



Select source bucket for  
replication and create a  
replication policy

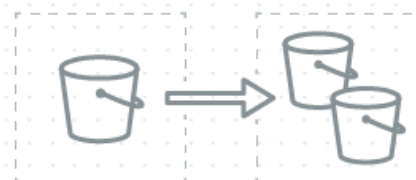


Select your data set for  
replication by object tag,  
prefix, or the entire bucket

**Select one or more  
destination buckets**  
In the same or different  
AWS Region



**Same-Region Replication**



**Cross-Region Replication**

**Owner override option**



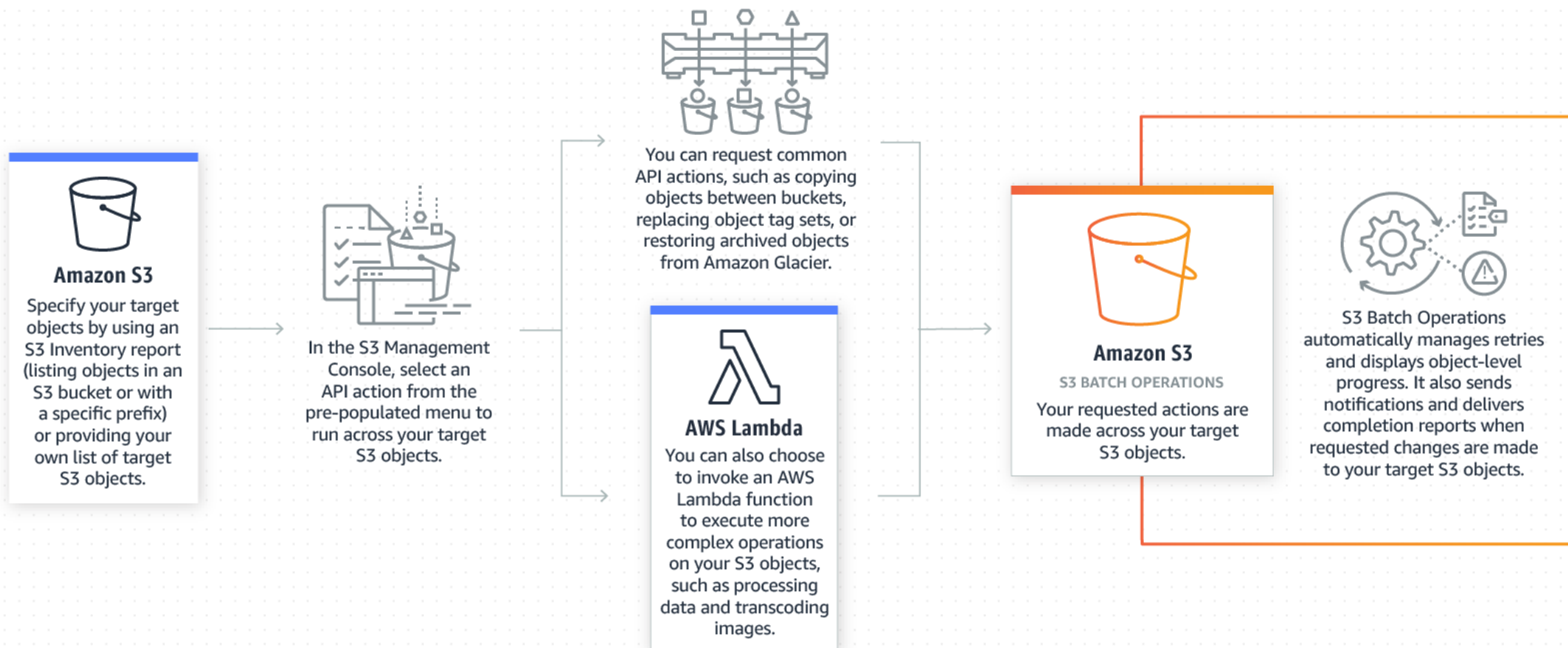
You can change the  
destination account  
or ownership

**Cost optimize with  
storage classes**



You can change the  
destination Storage Class



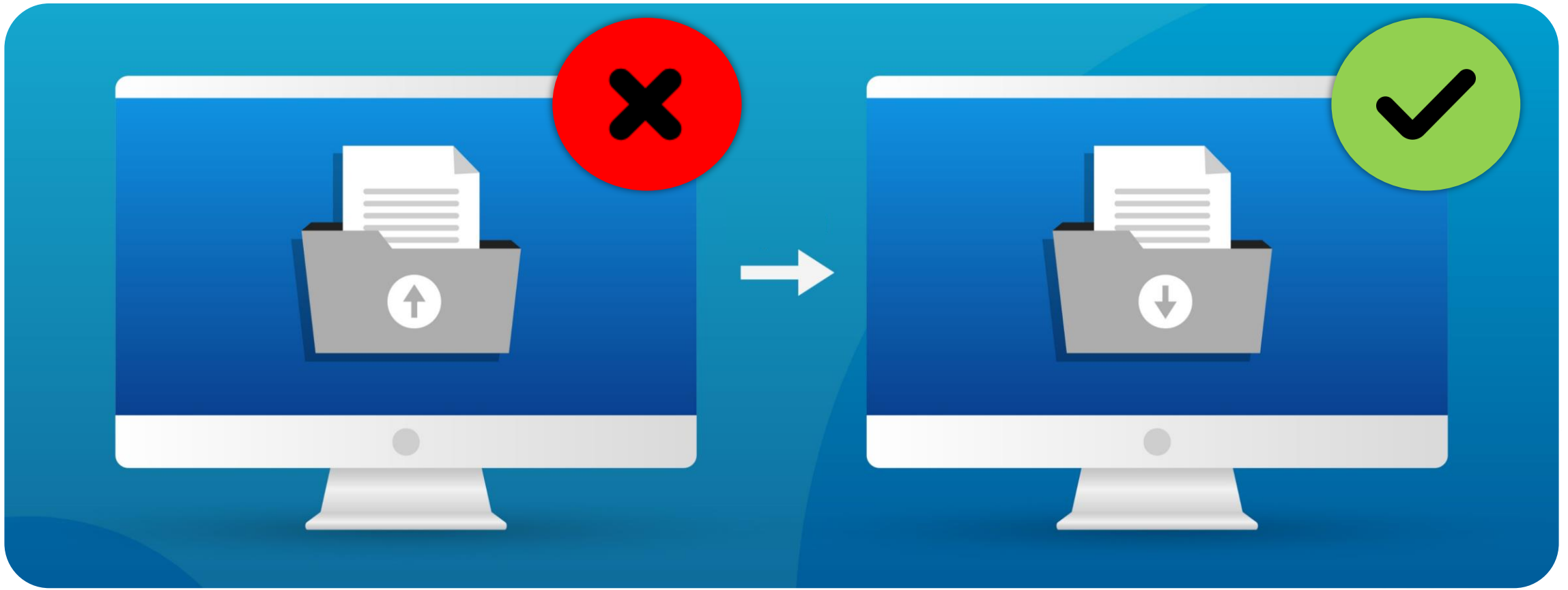




AWS Backup

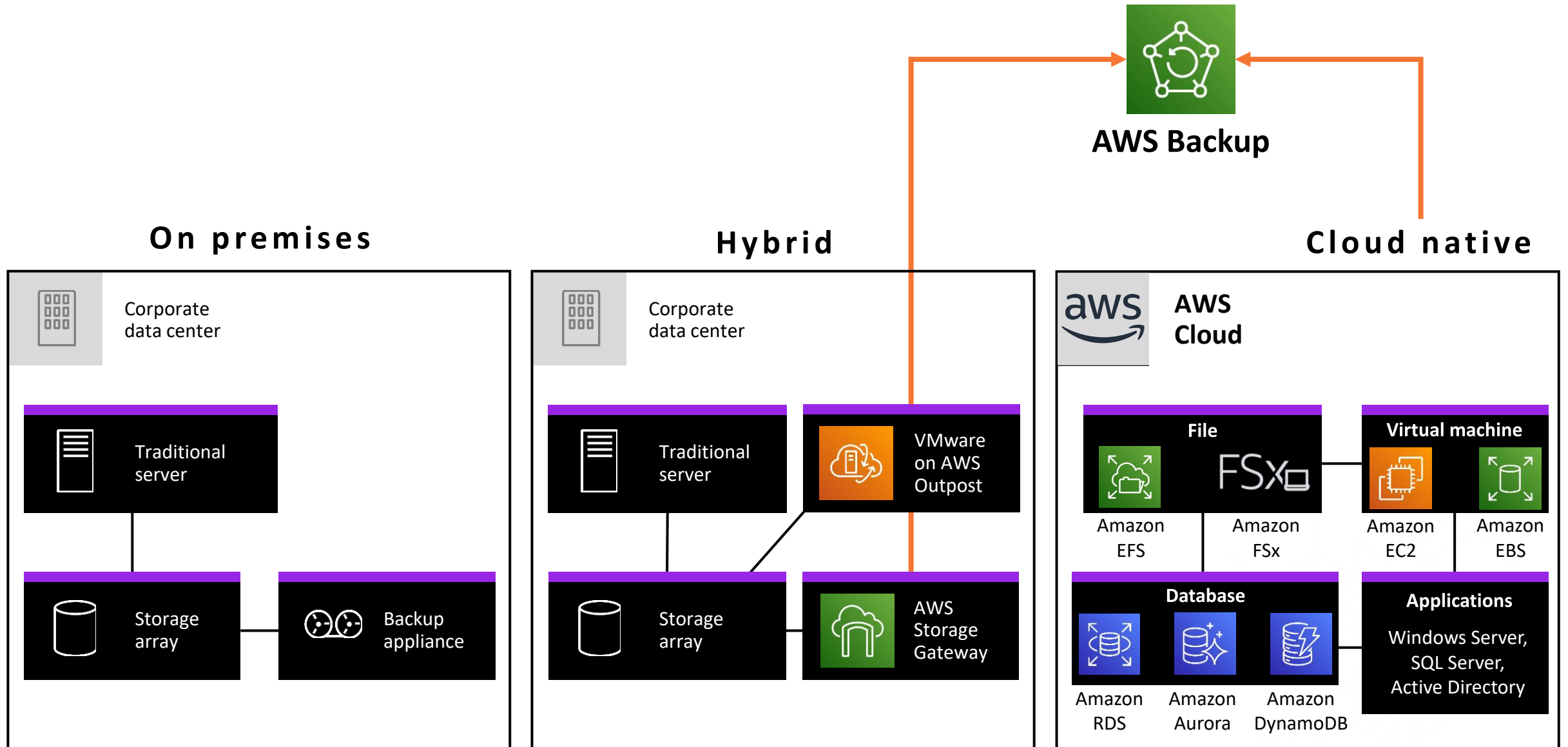
# Why do we backup?

- To recover if stuff breaks





# Backup your data

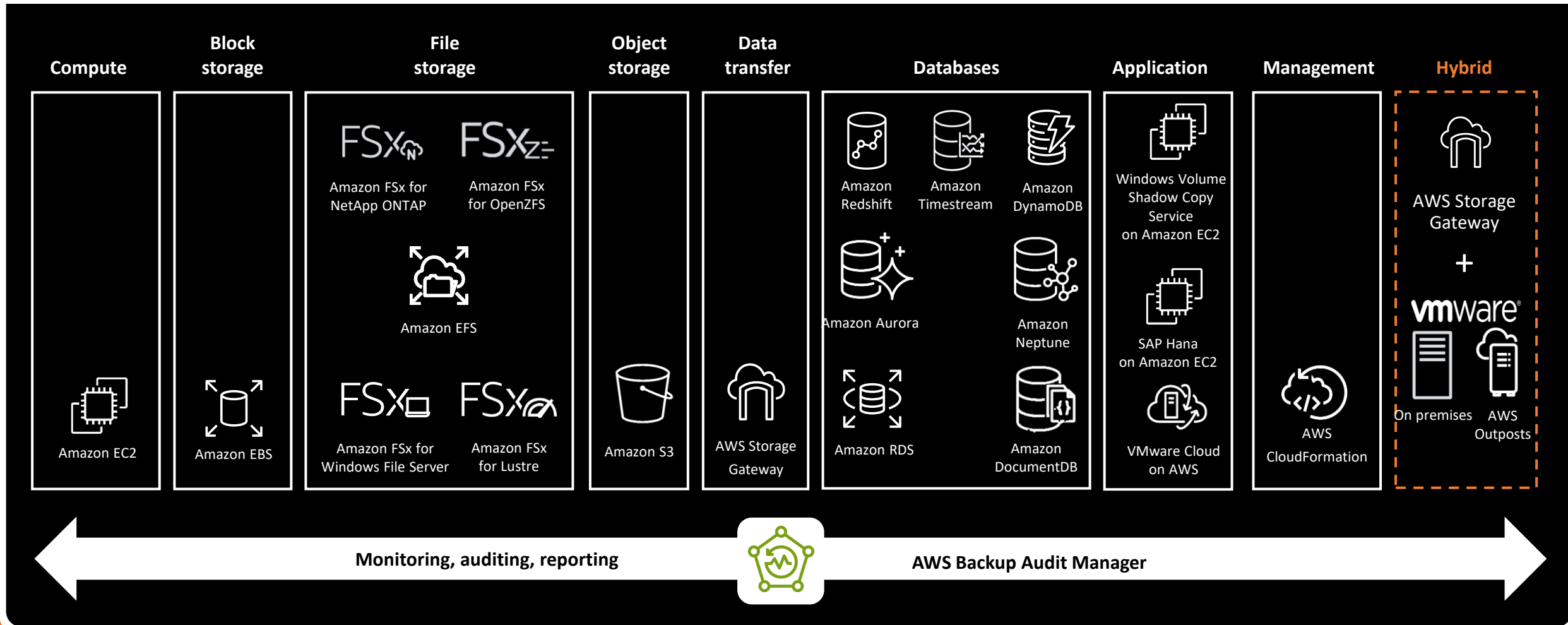


# AWS Backup

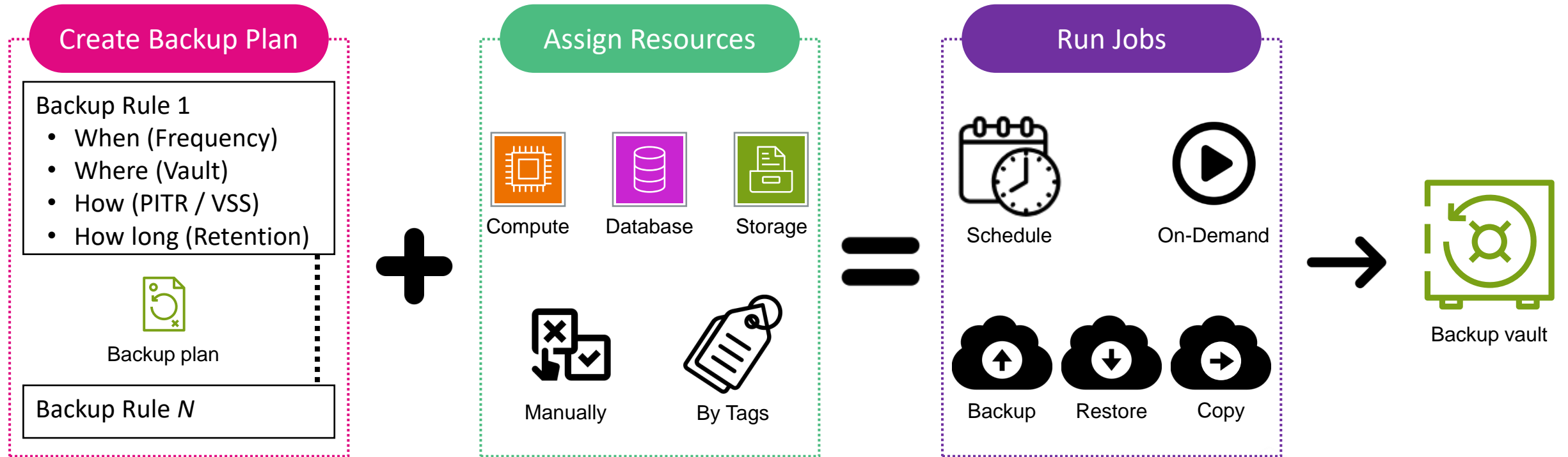


AWS Backup

A fully **managed, policy-based** service that **centralizes and automates** data protection across multiple **AWS services** and **hybrid workloads** with data protection **compliance analytics and insights**



# How AWS Backup works?



AWS Backup  
Audit Manager

AWS Backup Audit Manager Helps you answer questions such as:

- Am I backing up all my resources?
- Are all of my backups encrypted?
- Are my backups taking place daily?