

SET 1

Scenario 1

Context:

You're the lead cloud architect for a rapidly growing e-commerce platform. The platform needs to store various types of data, including product images, large video files for product demonstrations, and transaction logs.

Requirements:

1. Store product images in a way that allows for quick access and content delivery to customers worldwide.
2. Implement a system for uploading and storing large video files (>1GB) efficiently, ensuring fast uploads from various global locations.
3. Set up a solution for transaction logs that need to be kept for 7 years for compliance reasons, but are rarely accessed after 30 days.

Questions:

1. How would you use S3 to store and serve product images efficiently? Explain your choice of S3 storage class and any additional services you'd use to enhance content delivery.
2. Describe how you would handle the upload of large video files and also from distant locations. What methods you consider and how would you implement them?
3. Design a lifecycle management policy for the transaction logs using S3 and Glacier. How would you automate the movement of data between storage tiers?

Scenario 2:

You're a cloud engineer for a marketing agency that uses Amazon S3 to store and share campaign assets with clients and partners. The agency has a single S3 bucket named "agency-assets-2024" that contains all client materials.

Requirements:

1. Only allow HTTPS connections to the bucket for enhanced security.
2. Grant read-only access to a partner company (AWS account ID: Any of your AWS account) but only to files within the "partner-resources/" prefix.
3. Allow full access to your company's IAM users, but prevent anyone from deleting files.
4. Implement a policy to deny all public access to the bucket, except for files in the "public-gallery/" prefix, which should be publicly readable.

Question:

Create an S3 bucket policy that meets all these requirements. Explain the purpose of each part of your policy and how it addresses the specific needs outlined in the scenario.

Scenario 3:

You're a cloud engineer for a large research institution that stores massive amounts of scientific data in Amazon S3. The institution has recently faced issues with accidental deletions and needs to implement better data protection measures. Additionally, they frequently need to perform large-scale operations on their data sets.

Situation:

1. The institution has a primary S3 bucket named "science-data-2024" containing terabytes of research data.

2. Recently, a researcher accidentally deleted a folder containing crucial experiment results.
3. The institution often needs to update metadata tags on millions of files based on new classification criteria.

Requirements:

1. Implement a solution to protect against accidental deletions and allow easy recovery of deleted data.
2. Set up a process to efficiently update metadata tags on millions of objects without downloading and re-uploading them.

Questions:

1. Describe how you would use S3 Versioning to protect against accidental deletions
2. Implement S3 cross region replication for different buckets. Make sure it replicates existing and new objects.
3. Propose a strategy to handle a situation where a researcher needs to recover a specific version of a file that was overwritten multiple times.