



# Google Cloud Storage

## Use Case: Optimizing Media Storage and Delivery with Google Cloud Storage

### GENERAL CHARACTERISTICS

Intent	To optimize media storage and delivery for a client using Google Cloud Storage.
Scope	Deployment and management of a scalable, cost-effective storage solution for large media files.
Level	System-level.
Client	Confidential (Media Production Company).
Last Update	03/12/2024
Status	Finalized.
Stage	Implementation and Monitoring.

### ACTORS

Primary Actor	Cloud Storage Administrator.
Secondary Actors	Media Editors, Content Delivery Teams, End Users.

### PREREQUISITES

Static Preconditions	<ul style="list-style-type: none"> <li>- Google Cloud Project created for the client.</li> <li>- Billing account linked to the project.</li> <li>- Cloud Storage API enabled.</li> </ul>
Dynamic Preconditions	<ul style="list-style-type: none"> <li>- Media files organized and ready for upload.</li> <li>- Access permissions for different user roles configured.</li> </ul>
Assumptions	<ul style="list-style-type: none"> <li>- Media files include high-resolution videos and images.</li> <li>- Client requires global accessibility and high performance for content delivery.</li> </ul>

### TRIGGERS

Trigger Event	The client experienced high latency and inefficiency in storing and delivering large media files to global users.
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### EXPECTED OUTCOME

Success Postcondition	<ul style="list-style-type: none"> <li>- Media files are stored securely and efficiently.</li> <li>- High-speed content delivery is achieved</li> </ul>
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	for global users.
Failed Postcondition	- Latency issues persist, and storage costs remain high.

## OPERATIONS AND CONCEPTS

Operations	<ol style="list-style-type: none"> <li>1. Configured Google Cloud Storage buckets for storing media files.</li> <li>2. Applied lifecycle management policies to optimize storage costs.</li> <li>3. Set up Cloud CDN to accelerate content delivery for end users.</li> <li>4. Implemented access control policies for secure file sharing.</li> <li>5. Enabled versioning to track changes and restore previous file versions.</li> </ol>
Concepts	<ul style="list-style-type: none"> <li>- Cloud Storage: Provides scalable and durable storage for media files.</li> <li>- Lifecycle Policies: Automatically transitions files to cost-efficient storage classes.</li> <li>- Cloud CDN: Improves content delivery speed by caching media at edge locations.</li> </ul>

## MAIN SUCCESS SCENARIO

Step 1	Analyzed client requirements and identified inefficiencies in their current storage and delivery system.
Step 2	Created Cloud Storage buckets with appropriate storage classes based on usage patterns.
Step 3	Implemented lifecycle policies to transition infrequently accessed files to Nearline storage.
Step 4	Configured Cloud CDN for faster delivery of media files to global users.
Step 5	Set up IAM roles and permissions for secure and controlled access to media files.
Step 6	Enabled versioning to allow media editors to restore previous versions when required.
Step 7	Monitored the system to ensure optimal performance and cost-efficiency.

