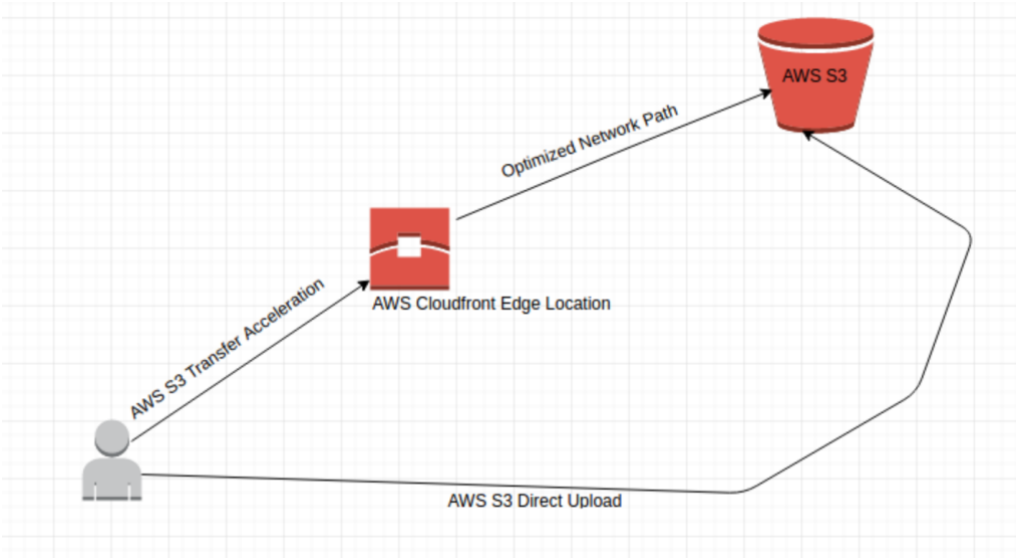
What is S3 Transfer Acceleration? When do you need this ?

Amazon S3 Transfer Acceleration is a feature of Amazon Simple Storage Service (S3) that enables faster uploads and downloads of files over long distances to an S3 bucket.

S3 Transfer Acceleration uses **Amazon CloudFront's globally distributed edge locations** to **speed up data transfers** between clients (users) and an S3 bucket.



Here's how it works:

1. When a user uploads a file using the **accelerated endpoint** (`bucketname.s3-accelerate.amazonaws.com`), the request is **routed to the nearest AWS edge location**.
2. The file is then securely transferred to the target S3 bucket using **AWS's high-speed private backbone network**.
3. This reduces latency and increases throughput, especially when the user is far from the S3 bucket's region.

💡 Why do we need this?

Transfer Acceleration is useful when:

Situation	Why It Helps
Global users uploading to a single bucket	Users in different continents (e.g., India to US) experience high latency — this feature reduces that.
Uploading large files (e.g., videos, backups)	Large files take time to transfer; acceleration significantly improves performance.
Need for real-time upload/download performance	Speeds up web and mobile apps needing real-time responsiveness.
Performance-critical applications	Businesses that need faster customer uploads (e.g., media, gaming, data ingestion) benefit from improved speed and reliability.

How to Enable S3 Transfer Acceleration

1. Go to your S3 bucket → **Properties** tab.
2. Scroll to **Transfer acceleration** → Enable it.
3. Use the accelerated endpoint:
    - `https://bucketname.s3-accelerate.amazonaws.com`

Things to Note

- **Costs more** than standard S3 data transfer.
- **May not help** for uploads from regions that are close to the S3 bucket (minimal latency gain).
- **Needs to be enabled per bucket.**

✅ Example Use Case

A mobile app lets users in India upload videos to an S3 bucket in the **US East (N. Virginia)** region. Without acceleration, uploads are slow due to network hops. With Transfer Acceleration, users upload to an edge location in India, and AWS routes it over its backbone to the S3 bucket — reducing time and improving user experience.

Which AWS service is used behind the scenes by S3 Transfer Acceleration to speed up transfers?

A) Amazon Route 53
B) Amazon CloudWatch
C) Amazon CloudFront
D) Amazon EC2

✅ **Correct Answer:** C

What is the correct endpoint format to use for S3 Transfer Acceleration?

A) `https://bucketname.s3.amazonaws.com`
B) `https://bucketname.s3-accelerate.amazonaws.com`
C) `https://s3-transfer.bucketname.amazonaws.com`
D) `https://bucketname.s3-fast.amazonaws.com`

✅ **Correct Answer:** B

Which of the following is NOT a benefit of using S3 Transfer Acceleration?

A) Faster uploads from distant geographic locations
B) Lower S3 storage cost
C) Improved performance for large file uploads
D) Uses AWS global edge locations for data routing

✅ **Correct Answer:** B