CLOUDFLARE

SOLUTION BRIEF

A developer's guide to media optimization

Host, store, and deliver rich media experiences without driving up costs

The challenge of building a rich media pipeline

Today's businesses invest valuable time and energy developing robust media pipelines, figuring out the most efficient way to deliver high-quality video content, optimize images across multiple platforms, and build rich, dynamic applications.

While using rich media drives more engaging and personalized user experiences, it also introduces a variety of performance, cost, and scalability challenges:

Businesses are either forced to develop these pipelines in-house or draw from dozens of disparate point solutions, both of which can be costly, slow down operations, and pull focus from more important initiatives.

The alternative? A cloud-native platform that optimizes rich media experiences across all platforms and environments at scale — helping businesses cut costs, improve operational agility, and exceed user expectations.

High egress fees

Data storage and retrieval comes with high egress fees, creating migration headaches and vendor lock-in

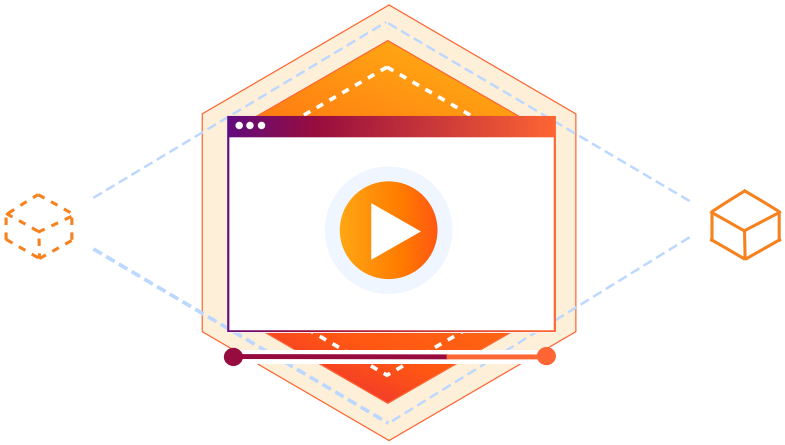
Increased latency

Network congestion can slow video playback speed during live events, frustrating users and impacting customer retention

Vendor overload

Adopting multiple point solutions to optimize media experiences is unwieldy to manage and difficult to operate at scale

Deliver fast, high-quality video live and on-demand



Challenge: Bandwidth surges and latency impact video delivery

From live streams to on-demand video content, users expect instant access to high-definition, fast-loading media across an expanding variety of platforms and devices.

These expectations — and the expertise necessary to meet them — can put businesses at a disadvantage:

- Building in-house video delivery requires significant time and resources
- Video players and devices require a wide range of different bitrates and formats
- Bandwidth costs spike with demand for high-quality content
- Businesses may be forced to lower quality playback to save on bandwidth

In addition to rising costs, network congestion can cause buffering issues and outages during live streaming events, resulting in a degraded user experience and potential customer churn.

Solution: Video storage, delivery, and optimization — from a single API

With Cloudflare, businesses can upload, store, encode, and deliver live and on-demand video via one API.

Videos are automatically adapted and optimized for the device and platform on which they are delivered — no manual configuration required. Other benefits include:

- **Predictable pricing:** Only pay for minutes of video stored and delivered — not video encoding or bandwidth
- **Platform compatibility:** Stream video from an integrated web player that works across a range of web, mobile, and media streaming applications and devices
- **Low latency:** Minimize buffering and delays for live and on-demand broadcasting
- In addition to rising costs, network congestion can cause buffering issues and outages during live streaming events, resulting in a degraded user experience and potential customer churn.

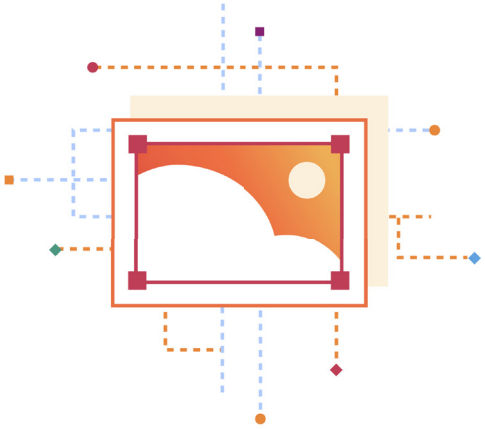
Learn more about Cloudflare Stream.

Caliente®

"With Cloudflare Stream, our users see every live event with the lowest latency possible. There are no synchronization issues updating the odds, and they will never miss a bet or hear their neighbors cheering before they see the touchdown."

— Lior Gross, Director of Software Development, Caliente.mx

Automate image resizing and delivery for every device



Challenge: Resizing images is costly and labor-intensive

Building scalable, efficient image infrastructure can quickly become a headache for businesses that need to optimize hundreds (or thousands) of images across different locations and devices.

- Multiple variants of each image must be created (and stored) to fit formatting requirements across different devices
- Businesses are charged for storing every variation of an image — in addition to egress fees for retrieving images from origin servers
- Scaling image libraries is often expensive and challenging to configure in-house
- Managing multiple image storage, optimization, and delivery services can complicate internal workflows and decrease team productivity
- In addition to rising costs, network congestion can cause buffering issues and outages during live streaming events, resulting in a degraded user experience and potential customer churn.

As businesses continue to scale, they require a solution that offers them more control over their images, while simultaneously decreasing the cost and effort of maintaining large-scale repositories.

Solution: A dynamic, scalable image pipeline with no hidden fees

Cloudflare Images enables businesses to create and manage large-scale image libraries, while automatically resizing and optimizing each image across multiple devices and browser types — at no extra cost.

Other benefits include:

- **Predictable pricing:** Pay for the total number of original image uploads, with no additional charge for variants
- **Dynamic transformations:** Transform images dynamically or on the fly, for maximum flexibility
- **Consolidation:** Store, transform, and deliver images via one platform, eliminating the need for multiple point solutions

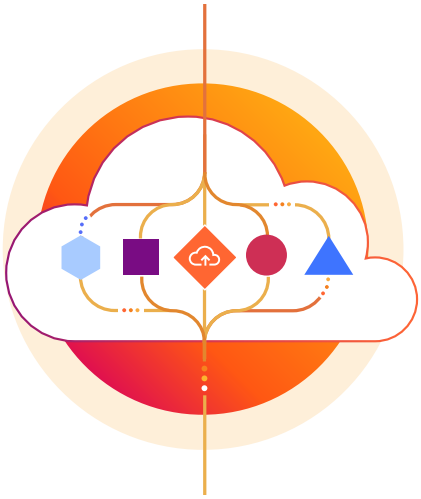
Learn more about Cloudflare Images.

Canva

"We're already using Cloudflare's image resizing tool for mobile optimization. It resizes images on the fly depending on the end user's device size, which enhances performance and reduces our storage and bandwidth costs."

— Jim Tyrrell, Head of Infrastructure, Canva

Build robust, cost-effective asset libraries



Challenge: High egress fees hamper data storage and retrieval options

Today's businesses depend on rich media experiences and applications to serve global, growing customer bases. But high data storage and infrastructure costs create inefficiencies, increase latency, and leave them with fewer options than ever.

- Egress costs prevent businesses from adopting multi-cloud architecture for large asset libraries
- Moving or retrieving data may result in increased latency, impacting the end-user experience
- Switching data storage providers comes with migration hurdles and steep costs, leading to vendor lock-in

The bottom line? Businesses should have full control over their data storage and retrieval, without racking up exorbitant egress bills or working around vendor constraints.

Solution: Streamline data storage and sharing while cutting costs

Cloudflare R2 helps businesses store and maintain flexible and portable asset libraries, without migration headaches or egress fees.

Other benefits include:

- **Edge storage for all data and files:** Deliver high-performance applications from any location
- **Simplified data migration:** Dual APIs enable hassle-free migration from existing cloud storage providers
- **Cost transparency and consistency:** Pay based on the total volume of stored data and two classes of operations on that data
- **Automated optimization:** When everything is stored in R2, it is also automatically optimized — helping lift the burden of manual configuration

Learn more about Cloudflare R2.

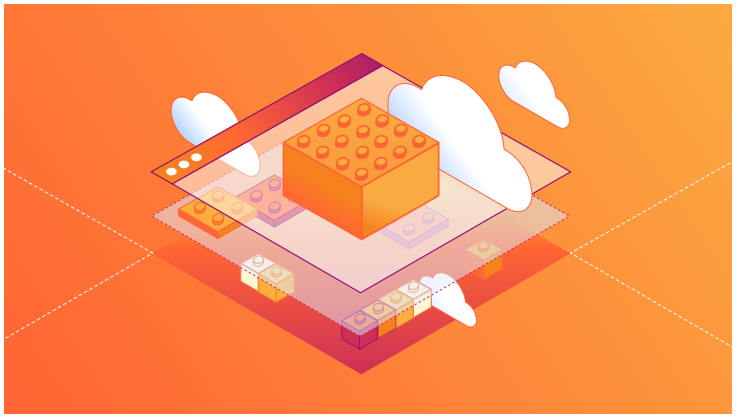
"As a platform that transcribes video/audio call recordings for VoC analytics, choosing a reliable object-store was an important decision. After the launch of R2, we switched from S3 and noticed a staggering 70% reduction in cost. Overall, we are believers in Cloudflare's vision and are eagerly awaiting the release of D1 so that our entire stack can be powered by the edge."

— Saad Irfani, Eclipse AI

Build robust, cost-effective asset libraries

Built on a powerful global network, Cloudflare helps businesses seamlessly optimize and scale video, image, and application delivery.

With Cloudflare's production-ready architecture, businesses can eliminate manual configurations and optimizations, freeing up developer resources to innovate faster while simultaneously reducing vendor sprawl and egregious egress fees.



Cloudflare Stream	Upload, encode, and deliver live and on-demand video with low latency	• Pay only for minutes of stored and delivered video • Control access to videos with private, authenticated, or time-bound constraints • Adaptive bitrate encoding selects optimal video resolution
Cloudflare Images	Automatically deliver the best image size and format by device and browser type	• No additional storage or resizing costs for image variants • Serve images at the edge — no matter where users are located • Quickly and securely migrate images from external sources
Cloudflare R2	Store and share data without egress fees or vendor constraints	• Global, S3-compatible object storage • Dynamic functionality via integration with Cloudflare Workers • Easy migration from existing providers

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