

Deliver the Ultimate Viewer Experience with Momento.



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Introduction

Today's viewers expect instant gratification and responsive user experience across all of their applications. Responsive user experiences help generate more revenue and improve brand reputation. For broadcasters, this requires ensuring that the applications are responsive, that viewers get instantaneous time to first frame, and that they have a buffer-free stream. We call this end-to-end vision the ultimate viewer experience.



Focus on
latency



Simplify your
infrastructure



Use purpose-built
architecture



Leverage system
intelligence



Streamline
development



Make it secure

1. Focus on latency

In the realm of live streaming, consistent, low latency is key to delivering a seamless viewing experience. While the end-to-end viewing latency is important, tail latency—the time it takes to deliver the slowest 1% of requests—can significantly impact viewer satisfaction.

By minimizing tail latency across the workflow and especially in the origin, you can ensure a smooth and uninterrupted viewing experience, even during peak traffic periods. Minimizing the number of retries that encoders and CDNs require improves the performance of the overall data flow from the encoder to the viewer. A CDN retry, for example, has the potential to impact thousands of viewers.

A corollary to minimizing tail latency is generally working towards consistent latencies and consistent performance for all components of the workflow regardless of the number of viewers. Each component should be able to adequately handle traffic fluctuations in order to avoid streaming issues happening during the most impactful part of your event.

Additionally, Momento's intelligent architecture and advanced caching techniques help to maintain consistent performance, even in the face of fluctuating traffic loads. This ensures that viewers receive a reliable and high-quality streaming experience, regardless of network conditions or device capabilities.

Momento Media Storage is designed to provide low tail latencies and consistent performance even for large-scale events. The platform also delivers on other metrics impacted by latency, like buffer rate, playback quality, and load time.

80%

of viewers have had latency issues that negatively impacted their attitude toward the content.¹

47%

of consumers have unsubscribed from streaming services due to buffering issues.²

\$390

million per month is how much businesses can lose from poor latency.²

2. Simplify your infrastructure

Traditionally, live streaming applications have been burdened by complex server infrastructure. Provisioning servers, managing scaling, and patching software can be time-consuming and resource-intensive. Momento Media Storage leverages the power of serverless architecture to let you focus on development and not managing infrastructure.

In addition to giving your development team time to focus on innovation by eliminating the need to manage and maintain servers, serverless means that your infrastructure is always up to date. Serverless services like Momento Media Storage update the infrastructure without downtime and deliver the same performance during the process.

Gone are the days of wrestling with infrastructure provisioning. Momento scales effortlessly to accommodate traffic surges, ensuring a seamless viewing experience for audiences during peak events. By embracing serverless architecture with Momento, you can achieve greater development agility, simplify operations, increase resource utilization transparency, and optimize your budget – all key ingredients for live streaming success.

3. Use purpose-built architecture

A live streaming origin demands consistently low latency and near-zero error rates while video-on-demand origins focus on long-term reliability and cost-effectiveness. Traditional object storage systems, often optimized for durability and cost-efficiency, may not be ideal for the stringent requirements of live streaming. The high number of read and write requests, where one error or slow response can cause a delay that can create buffering events for thousands of users, coupled with the need for low latency, necessitates a specialized solution.

Momento Media Storage was designed with the reliability and consistency needed in live event streaming. By ensuring consistent performance with fast response times and low error rates, exceeding 99.99% SLAs, Momento reduces system latency and reduces buffering events. Its proactive partitioning and hot item mitigation strategies handle sudden traffic surges, providing a seamless viewing experience during peak viewing times. In addition, the serverless dual-layer gateway and cache system allows both access to resources on a moment's notice and also scalability. Because Momento Media Storage is horizontally scalable in both gateway and storage layers, a large number of requesters or increased overall load can be handled without compromising performance.



Benefits of the Momento Architecture:

- Consistently fast
- Proactive partitioning
- 99.99% SLA
- Robust security

4. Leverage system intelligence

Momento Media Storage leverages intelligent routing and load distribution to deliver the Ultimate Viewer Experience. By strategically directing traffic across its two-tiered architecture, Momento ensures consistent latency and minimizes the impact of sudden traffic spikes. This intelligent approach enables a unique form of load shedding. Traditional load shedding simply rejects requests in order to shield underlying layers resulting in errors being returned for requests. However, because hot data is propagated to the gateway layer, the Momento solution prevents failed reads and the cascade of re-requests they can trigger.

Momento's intelligent storage management further enhances efficiency and cost-effectiveness. Momento optimizes storage costs and ensures optimal performance by automatically migrating data between storage tiers based on usage patterns. This data lifecycle management ensures that your content is always accessible while minimizing storage costs.

5. Streamline development

Building and maintaining a live-streaming platform can be a daunting task. It requires significant engineering effort, specialized expertise, and ongoing maintenance. Open-source solutions, while great for prototyping, often require extensive configuration, troubleshooting, security management, and long-term maintenance to bring up to production quality. This leads to increased development time, operational overhead, and potential performance issues.

Momento Media Storage simplifies media workflows by providing a fully managed, serverless platform. The fully managed service is ready for production right out of the gate streamlining development, troubleshooting, and security. Momento accelerates development and provides deep insights into your workflow, enabling rapid deployment and optimization of your live-streaming application. The Momento Gateway does the heavy lifting, so your team is able to concentrate on building the Ultimate Viewer Experience.

6. Make it secure

Security is one of the top issues for all companies, especially for media companies where content is the most important asset and should be secured at all times and in all forms. The global average cost of a data breach is the highest it has ever been at \$4.88 million.³ For media companies, the cost has gone up 10% over last year.³ To keep your company safe, valuable data needs to be secured across every platform. Even within your live stream infrastructure, data security needs to be a priority.

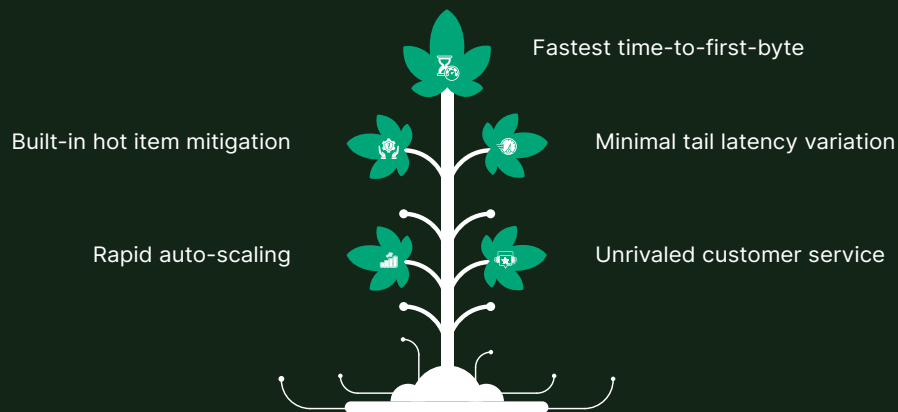
Hand-crafting custom infrastructure for origination leaves room for security vulnerability. Momento Media Storage bakes in best practices for security to protect your valuable content from unauthorized access with fine-grained access control, encrypting all data at rest and transit, and a routinely audited compliance framework.

Go Momento

Live streaming continues to evolve and has steadily improved since it started to take root with the proliferation of over-the-top services. Viewers are more aware when an issue pops in their live stream and the bar for the Ultimate Viewer Experience keeps getting higher. To deliver on the promise of a Zero Buffer Rate experience you need a modern live video origin.

Momento Media Storage will help you exceed your customers' viewing expectations while also streamlining and simplifying the work of your developer and operations teams. Consistently fast response times and minimal tail latency ensure the origin is not the bottleneck for delivering a buffer-free viewing experience. Momento's two-tier cache approach handles sudden traffic spikes with ease, ensuring even a stampeding herd doesn't impact the viewer's experience. The secure, serverless environment both accelerates your live streaming workflow development and provides robust security without maintenance windows to enable high-functioning operations teams. With Momento, you're one step closer to the Ultimate Viewer Experience.

Benefits of Momento Media Storage



Live streaming is good. Let's build the Ultimate Viewer Experience. Go Momento.

[Learn More About Momento](#) ▶

- 1 "FreeWheel Viewer Experience Lab: Improving the Quality of Ad Experiences," FreeWheel, May 29, 2024. <https://www.freewheel.com/insights/reports/freewheel-viewer-experience-lab-improving-the-quality-of-ad-experiences>
- 2 "New research from Bitmovin reveals that almost half (47%) of consumers have unsubscribed from a streaming service due to buffering issues," Bitmovin, November 22, 2022. <https://bitmovin.com/press-room/buffering-is-costing-streaming-services/>
- 3 "Cost of a Data Breach Report 2024," IBM, July 2024. <https://www.ibm.com/reports/data-breach>