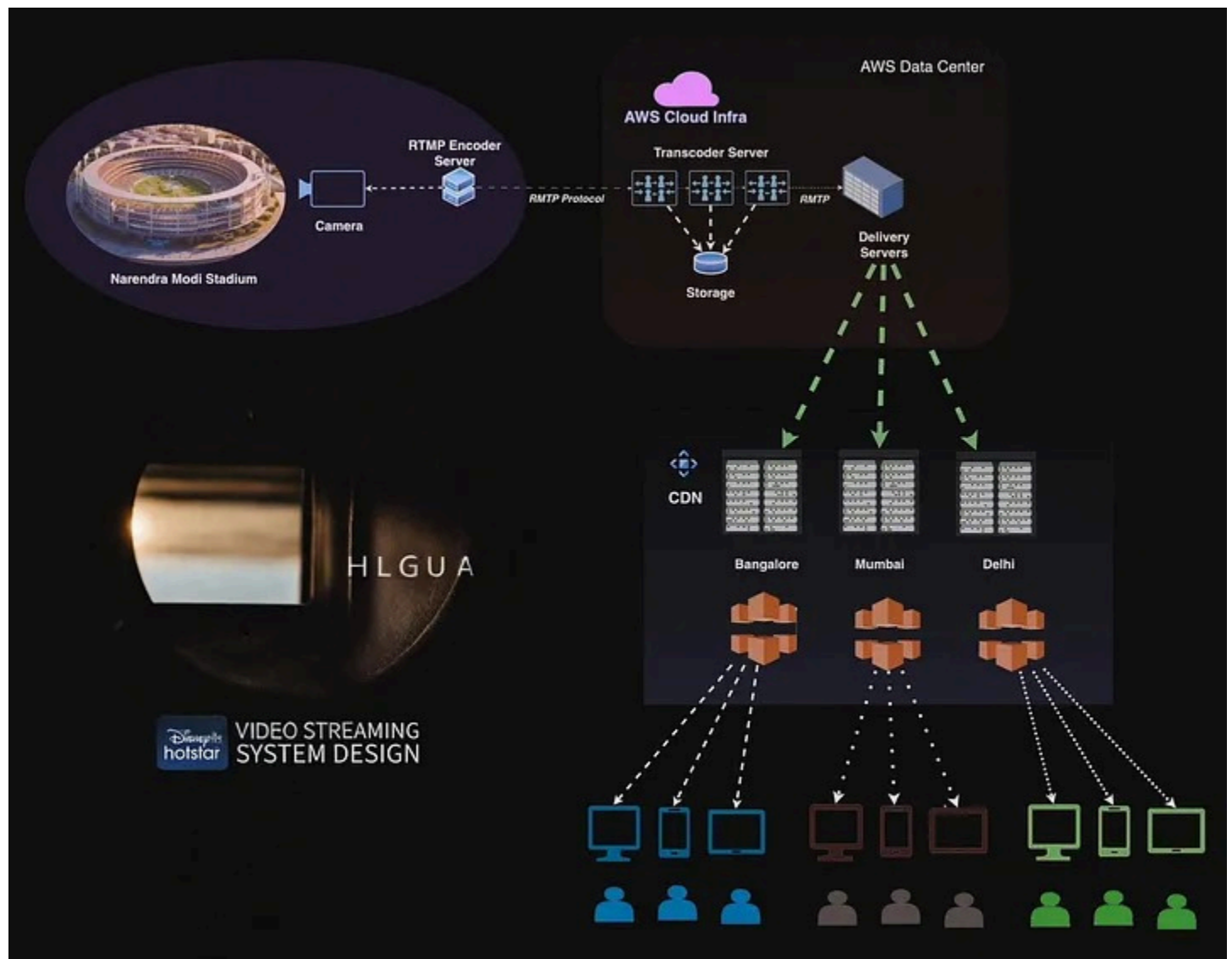


# AWS CloudFront and Live Streaming at Scale

## Introduction

AWS CloudFront is a Content Delivery Network (CDN) that ensures fast, secure, and scalable content delivery to users worldwide. One of its most powerful applications is real-time live streaming, as demonstrated during the ICC Champions Trophy 2025, where Jio Hotstar seamlessly streamed the final match to over 60 Crore+ viewers with ultra-low latency.



## The Challenge

With millions of users watching live, Hotstar faced several challenges:

- Scalability – Handling massive concurrent traffic without delays.
- Latency – Delivering real-time video with minimal buffering.
- Reliability – Ensuring a consistent viewing experience across all devices.
- Cost-Efficiency – Reducing load on origin servers to optimize operational costs.

## AWS CloudFront Solution

Amazon CloudFront played a critical role in meeting these demands by leveraging its global Edge Locations to cache and deliver content efficiently.

## CloudFront Live Streaming Workflow

1. **Live Event Captured** 📹
  - The match is recorded and encoded in real time.
2. **Uploaded to Origin Server (S3/Media Servers)** 📶
  - The encoded video chunks are stored in AWS S3, MediaPackage, or MediaStore.
3. **CloudFront Caches & Distributes Content** 🌐
  - CloudFront fetches the video content and distributes it to multiple Edge Locations worldwide.
4. **User Requests & Nearest Edge Location** 📶
  - When a user requests the live stream, CloudFront routes them to the nearest Edge Location to reduce latency.
5. **Smooth Playback Experience** ⚡
  - Viewers receive real-time, buffer-free video content.

## Key Benefits of CloudFront for Live Streaming

- ☒ **Reduced Latency** – Streams are served from the nearest Edge Location.
- ☒ **High Scalability** – Handles millions of concurrent viewers.
- ☒ **Lower Costs** – Offloads requests from the origin servers.
- ☒ **Security & DDoS Protection** – Integrated with AWS WAF & Shield for enhanced security.
- ☒ **Global Reach** – Ensures consistent performance worldwide.

## Conclusion

The ICC Champions Trophy 2025 live stream on Jio Hotstar demonstrated how AWS CloudFront enables real-time, high-quality content delivery at an unprecedented scale. By leveraging CloudFront's caching, scalability, and security features, enterprises can ensure a seamless and engaging experience for millions of users.

## Additional Resources

- [AWS CloudFront Documentation](#)
- [AWS Live Streaming on CloudFront](#)