



Advanced Video Analytics – Streaming Data Management with Cloud-OnPrem Integration

Client Overview

A global leader in specialized, mission-critical vehicles serving defense, airport, fire safety, and commercial industries. The organization needed a unified, secure, and highly scalable video management platform to support streamlined operations across distributed edge environments.

Business Challenge

To support mission-critical operations, the business needed a modern solution capable of ingesting multiple video streams from their fleet at high speed. It also required secure storage for all incoming data and seamless cloud-to-on-prem integration.

- ➡ No unified system for edge video ingestion and playback
- ➡ Difficulty handling high-volume, concurrent video streams
- ➡ High storage and infrastructure costs
- ➡ Lack of streamlined session management and metadata handling
- ➡ Operational delays due to slow or unreliable video retrieval

Technical Need

The client's existing systems could not support the speed, scale, and reliability required for mission-critical environments. They needed:

- ➡ A platform capable of handling concurrent video streams without failures
- ➡ Fast, reliable ingestion and retrieval of large, high-resolution video files
- ➡ Smooth integration between the cloud and on-prem Cloudera setup
- ➡ Improved session management and consistent video playback
- ➡ A cost-efficient, scalable storage architecture
- ➡ An architecture capable of supporting future edge AI and video analytics

Solution Delivered

Innominds built a next-generation, scalable video management platform that integrates the cloud with Cloudera's on-prem environment. The solution enables uninterrupted video ingestion, storage, retrieval, and playback across distributed edge devices.

Key Solution Components



Automated High-Speed Video Ingestion

Real-time ingestion pipelines designed for high-throughput edge environments.

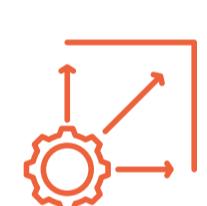


Cloud-On-Prem Integration – Seamless, secure data flow between the cloud and Cloudera's data lake.



Optimized Metadata & Session Management –

Enhanced session controls and metadata models for reliable playback and retrieval.



Scalable Storage Architecture – Cost-efficient data lake implementation supporting long-term storage and analytics.



User-Friendly Video Playback & Analytics

Interface – Intuitive UI enabling operational teams to quickly view, analyse, and retrieve video streams.

Outcome

With the new platform deployed, the client now has a unified system for ingestion, storage, retrieval, and playback across distributed edge locations:

- ➡ Stable support for 250+ concurrent video streams in production
- ➡ High-speed ingestion pipelines and significantly faster retrieval times
- ➡ More reliable session, metadata, and playback management
- ➡ Fully integrated cloud–Cloudera hybrid architecture enabling smooth data flow
- ➡ Reduced storage footprint through optimized data lake utilization
- ➡ A scalable architecture ready for advanced edge AI analytics and video intelligence

Tools and Technologies

C | Java | Springboot | Angular | RTSP | FFMPEG / Gstreamer | Cloudera Data Platform | HDFS

Business Outcomes



Lower Data & Storage Costs

Optimized use of Cloudera data lake reduced infrastructure spending.



Better Decision-Making

Real-time visibility into critical video insights.



Higher Operational Efficiency

Unified access to video streams across high-speed operations.



Improved Reliability

Smooth video retrieval and playback even at high concurrency.

Reimagine Video Management

Enabling smarter analysis, reliable operations, and scalable video intelligence.

Visit www.innominds.com or contact marketing@innominds.com

