

VIDEO MANAGEMENT & RESTREAMING PLATFORM

One platform for every camera, every stream, every stakeholder.

XFlow lets transportation agencies view, control, secure, and share live camera video — from the operations center to the traveling public — on a single, highly scalable platform.

5,000+

cameras per deployment

**as low as
250 ms**

ultra-low latency

ONVIF / NTCIP

camera control

REST API

for every capability

What XFlow is

The first unified, cost-effective solution for both video management and scalable restreaming in the TSMO domain.

XFlow is a feature-rich platform for camera control and management, video normalization, and secure restreaming — with intelligent real-time monitoring, a modern browser-based interface, and a fully featured REST API for external-system integration. It scales through the simple addition of XEngine instances, and deploys on private virtualized environments, bare-metal servers, or commercial cloud.

BUILT FOR THE MANY WAYS AGENCIES PUT VIDEO TO WORK:

Traffic operations & video walls

511 / traveler-information web & mobile apps

GIS departments (e.g. ArcGIS)

Video analytics & machine learning

Emergency management

Partner agencies

First responders

Media organizations

CAPABILITIES

A comprehensive platform, end to end

VIEWING & CAMERA CONTROL

Best-in-class viewing & control

Fast, intuitive live viewing and responsive PTZ control, with stream tours, camera preset tours, and personalized video-wall layouts.

Automated stream configuration

Define encoding templates once; XFlow provisions and maintains matching profiles across your ONVIF cameras.

Protocol-agnostic camera control

Control cameras over ONVIF or NTCIP 1205 (SNMP), selectable on a camera-by-camera basis.

STREAMING & DELIVERY

Broad, modern format support

Restream to browsers, mobile devices, workstations, video walls, unattended displays, recorders, and external systems.

On-demand ingestion

Ingest an input stream only while it is being viewed — ideal for metered / wireless cameras and resource-constrained hosts.

Multicasting & publishing

Efficient one-to-many RTSP multicast, plus stream 'push' to partner servers over RTSP/S and RTMP/S.

Ultra-low latency

As low as 250 ms for real-time applications such as camera control and incident detection.

Input conversion

Re-multiplex or transcode on the fly: support legacy formats and adapt bitrate, resolution, and frame rate before restreaming.

CDN overflow delivery

Optionally deliver HLS / LLHLS through a CDN edge for very large public audiences.

SECURITY & MONITORING

Multi-layered stream security

Request-header validation, rotating token authorization, automatic blacklisting, and host-firewall IP white/blacklisting — deterring commercial piracy of public streams without impacting legitimate viewers.

Connection monitoring & audit history

Live client-connection visibility, plus audit trails for logins, stream requests, blacklisting, and camera control.

Active monitoring

Real-time status and performance for servers, streams, and cameras, with a rolling history exposed through the REST API.

Load balancing & failover

Distribute load across XEngine instances with economical single-tier balancing and host-failover support.

INTEGRATION & EXTENSIBILITY

Open REST API

Every platform capability — configuration, monitoring, and low-latency camera control — available to external systems.

Analytics / AI integration

Feed snapshots, live streams, or pushed frame-clips to video-analytics and ML systems, minimizing bandwidth.

Video-wall integration

Synchronize inventory, presets, and layouts with XCube, Datapath, and Barco controllers.

Snapshot publishing

Generate and archive still images on a schedule — with logos, timestamps, and thumbnails — to folders, network shares, or FTP.

Protocols & latency

OUTPUT PROTOCOL	RELATIVE LATENCY	LATENCY	TYPICAL USAGE	CODECS
WebRTC / WHEP		< 500 ms	Web client — camera control	H.264 H.265
RTSP / UDP		< 1 s	Native client or server	H.264 H.265
SRT		< 1 s	Native client or server	H.264 H.265
RTSP / TCP		< 2 s	Native client or server	H.264 H.265
RTSPS		< 2 s	Native client or server	H.264 H.265
RTMP / RTMPS		1–2 s	Native client or server	H.264 H.265
LLHLS		4–10 s	Web client — mass distribution	H.264 H.265
HLS		12–30 s	Web client — mass distribution	H.264 H.265

SUPPORTED INPUTS

RTSP / UDP (RTP, RTCP)

RTSP Multicast

RTSP / TCP

RTSPS

RTMP

RTMPS

Multicast TS

HLS

LLHLS

Non-exhaustive. Additional protocols and codecs supported via re-multiplexing and transcoding. H.264 and H.265 (HEVC) inputs are both supported; WebRTC/WHEP is not offered for H.265, due to web browser (decoding) limitations.

Built to scale, deployed your way

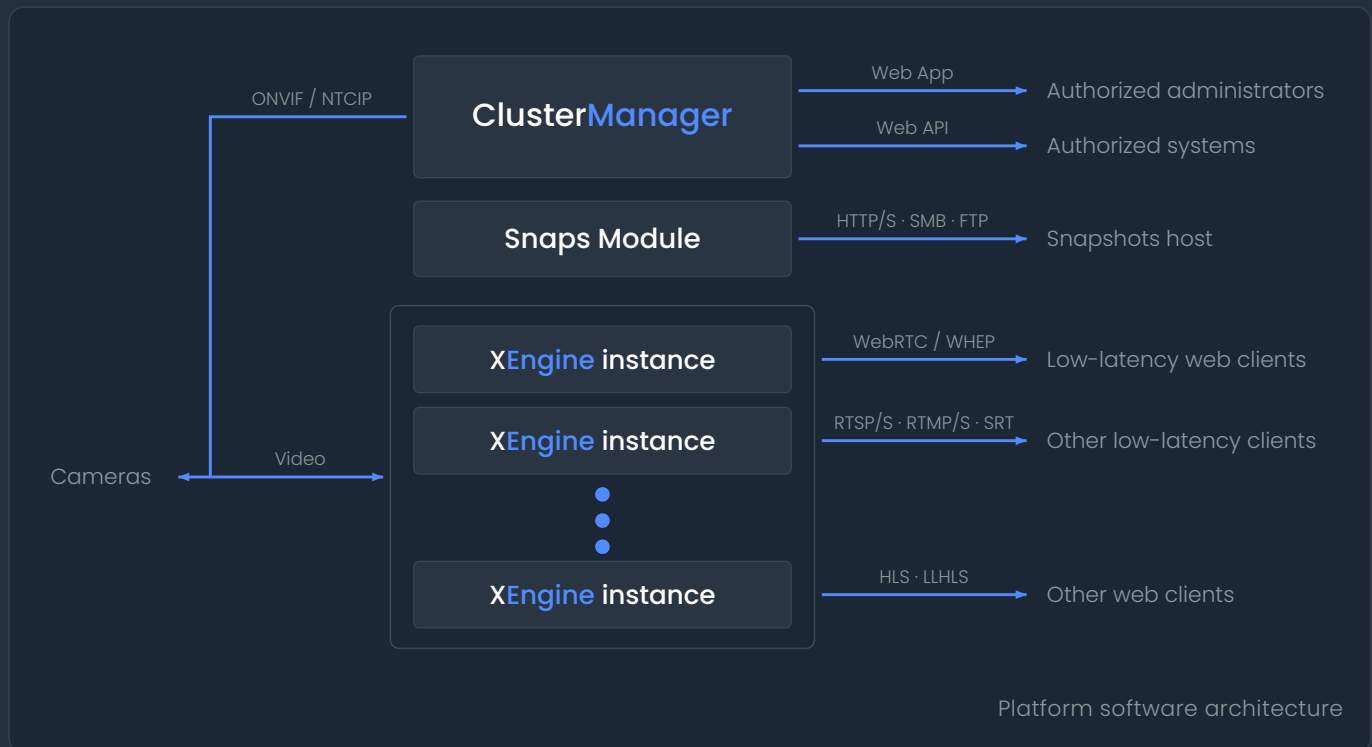
XEngine Instance

The XFlow Restreaming Engine — Go and C/C++ — delivers high-quality restreaming at low latency and resource cost.

XFlow Cluster Manager

The central component: control, monitoring, and configuration for the entire platform.

Scale horizontally by adding XEngine instances. Deploy on private virtualized environments, bare-metal servers, or commercial cloud.



Proven in production on statewide traveler-information systems, serving live video to the public at scale.

Bring XFlow to your operation.

Additional protocols and codecs are available via re-multiplexing and transcoding. Contact Optima DTS to discuss your deployment or arrange a demonstration.

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