

ELEMENTAL  **STREAM**

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Elemental® Stream is a platform component designed to segment, package and secure live and on-demand content for multiscreen delivery. It allows for customization of video at the optimal point in the IP video delivery infrastructure. The software-based solution can be positioned at the central encoding location or as part of the content delivery pipeline, making it ideal for pay TV operators, Content Delivery Networks (CDN), broadcasters and content owners. By customizing content independently of the encoding process, Elemental Stream lowers costs for IP video delivery and is perfectly suited to enhance TV Everywhere and over-the-top video infrastructures.

EXPERIENCE THE BENEFITS

Reduce Network Strain

Minimize network bandwidth costs and simplify file management by allowing origin encoders at the headend, such as Elemental Live and Elemental Server, to create multi-bitrate video streams in a single format for efficient delivery and further processing by Elemental Stream at the edge of the network.

Maximize Revenue Opportunity

Customize content distribution to meet device proliferation and regional advertising requirements to enable faster monetization of content. Maintain a current encoder infrastructure while Elemental Stream packages video to support existing and future content delivery protocols such as MPEG-DASH.

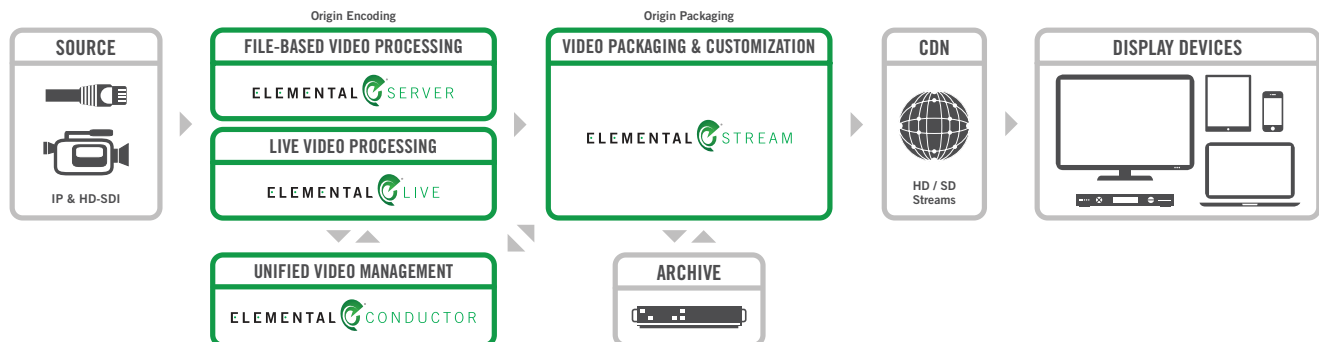
Take a Best of Breed Approach

Integrate seamlessly with existing delivery infrastructures, taking advantage of encoders and CDN solutions already in place. Support multiple IP inputs for redundancy and apply specific DRM to adaptive bitrate formats at the time of distribution.

SOFTWARE-DEFINED VIDEO

- Package video for the most popular streaming protocols
- Process either on-demand or live streaming content
- Retrieve ads for delivery to a targeted audience
- Lower network costs with improved bandwidth efficiencies for IP video delivery
- Deliver video directly to a CDN or service provider network

ELEMENTAL STREAM WORKFLOW



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WHY ELEMENTAL STREAM

High-Density Packaging

Achieve maximum throughput with high performance processing that leverages powerful, off-the-shelf hardware. Format multiple input channels for adaptive bitrate distribution in a single Elemental Stream system, while simultaneously providing DRM wrapping.

Simple Monetization & Captioning

Support for SCTE-35 allows insertion of targeted advertising at the origin or the edge. Metadata management is also supported, allowing the system to extract data from an incoming stream, including closed captioning data and ad insertion messages, and convert it as needed for each type of output stream.

Easy to Manage

REST/XML APIs and a web-based user interface allow for automated system integration as well as real-time manual control of the video distribution workflow. Configure, manage and monitor multiple encoder instances with Elemental® Conductor unified video management.

Valuable Content Secured

Simultaneously ingest, format and wrap content using today's leading DRM solutions including Microsoft PlayReady, DECE Ultraviolet and AES 128-bit for Apple encryption standards. Easily create specialized wrapping rules for premium and standard content types without incurring additional overhead.

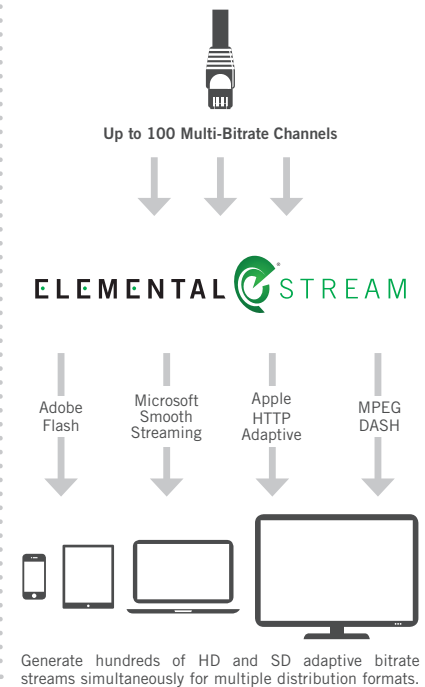
Efficient Audio & Metadata Processing

Lower bandwidth overhead by embedding audio and metadata in only one input stream. The system performs extraction and distribution of audio and metadata for individual output streams.

Exceptional End User Experience

Low latency processing guarantees quick and efficient content distribution. Automated quality control verifies input and output streams are stable and delivered correctly. An uninterrupted viewing experience is further assured with seamless switching between redundant input streams.

ADAPTIVE BITRATE STREAMING



SPECIFICATIONS

Supported Codec Formats	Input Protocols	Output Protocols	Embedded DRM & Encryption	Processing	Communications Protocol	Redundancy Management	Alerts and Warnings	Physical and Power
H.264 AAC (AAC-LC, AAC-HE), 5.1, 2.0	MPEG2-TS (SPTS, MPTS) IGMPv3 SSM For File-to-File, Most Major Container Formats	Apple HTTP Live Streaming (HLS) Microsoft Smooth Streaming Adobe Flash RTMP MPEG2-TS MPEG-DASH Origin Server (Future)	Microsoft PlayReady AES 128-Bit for Apple Verimatrix SecureMedia Irdeto	Up to 100 Multi-Bitrate Live Channels File-to-File for Video on Demand SCTE-35 Ad Insertion Triggers Closed Captions; 608/708, DVB Teletext Full Transmuxing Capabilities	REST / XML APIs HTML-Based UI SNMP	1 + 1 N + M Simulated Switchover Warm Backup Cold Backup Auto-Restart Capability Remotely Upgradable	On-Demand Device Polling SNMP Trap Selection Alarm Email Notification Configurable Alarms Alarm History	Linux CentOS Redundant Power Supply 120V / 240V 40 – 69Hz 500 GB Redundant HDD