ELEMENTAL SERVER
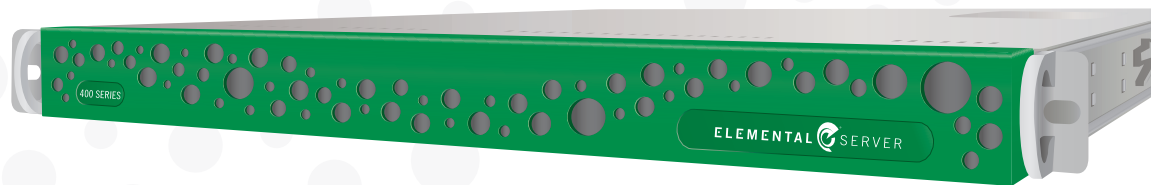
FILE-TO-FILE VIDEO PROCESSING SYSTEM

Elemental® Server is a file-based video processing system that provides fast and reliable transcoding for pay TV operators, content owners and film studios. The system merges the performance benefits of massively parallel hardware with the flexibility and forward compatibility of upgradable software, reducing total cost of ownership for video compression. Elemental Server performs simultaneous, faster-than-real-time conversion of multiple video files to create mezzanine deliverables or adaptive bit rate outputs for delivery to TVs, PCs and mobile devices. Ideal for large-scale broadcast and multiscreen video applications, Elemental Server is easy to install, configure and integrate into existing workflows.

EXPERIENCE THE BENEFITS

High Performance

Accelerate video compression through the power of parallel processing. Create content for delivery via Adobe Flash, Microsoft Smooth Streaming, Apple HLS, MPEG-DASH, Ultraviolet, QuickTime or traditional broadcast formats. Reduce storage costs by creating mezzanine files formatted and ready for wrapping with a separate packager such as Elemental® Stream File.

Versatile Design

Off-the-shelf hardware and flexible software allow for rapid optimization and enhancement of existing video codecs such as VC-1, MPEG-2 and H.264 as well as support for new codecs such as HEVC / H.265. Stay on the leading edge with highly upgradable video infrastructure that provides evolving support for ad insertion, captioning, watermarking and other monetization methods.

Ease of Management

Control the Linux-based system through an intuitive web-based user interface or REST / XML APIs for quick and simple integration into existing workflows. Unified control and management of deployments with Elemental® Conductor File reduces setup time, simplifies maintenance tasks and allows for centralized upgrades of multiple appliances.

ON DEMAND WORKFLOW

STORAGE

ELEMENTAL SERVER
File-Based Video Processing

ELEMENTAL STREAM File
Video Packaging & Customization

CDN

DISPLAY DEVICES

ELEMENTAL CONDUCTOR File
Unified Video Management

ELEMENTAL SERVER

WHY ELEMENTAL SERVER

Universal Input Support
Decode all common mezzanine, broadcast and editing formats with hardware and software that provide the best combination of speed and flexibility.

High-Density Video Processing
Convert content with unprecedented speed and throughput. Powerful hardware coupled with upgradable software provides maximum performance and scalability.

Uncompromised Video Quality
Deliver the highest quality encoding using codecs developed by Elemental including HEVC / H.265, H.264, VC-1 and MPEG-2.

Produce Multiple Outputs
Create multiple resolution, bit rate and output formats targeting a variety of players and platforms. Wrap files in popular formats or retain content in a base container for downstream packaging in the future.

Advanced Audio Processing
Multichannel, multi-language and broad audio codec support serves all audiences. Combine independent audio channels with a single video stream to create unique outputs without additional processing cost. Support for audio normalization provides future proofing for requirements such as the CALM Act.

Reduce Management Overhead
Use REST / XML APIs, the web-based interface, or watch folders for tasks such as system setup, workflow integration, job queuing, scheduling and prioritization. Simplify operations by reducing the total number of systems in use and manage systems through built-in tools or SNMP.

Scalable, Reliable Architecture
Scale server farms easily by combining multiple units in a shared job queue that automatically distributes encoding tasks. Deliver high reliability with a fully redundant job scheduler for automatic failover.

Monetize Multiscreen Assets
Support for current and future ad insertion platforms, including Adobe Primetime, ESAM and HLS-based insertion methods, allows for targeted monetization.

Secure Valuable Content
Encrypt content using traditional AES and SAMPLE-AES for HLS, PlayReady for HLS and Smooth Streaming, Adobe Access for HDS and HLS or Adobe pHDS or pHLS. Alternatively, use content protection systems such as Widevine and NDS or Civolution forensic watermarking to meet requirements for pay TV operators and content owners.

Seamless Cloud Integration
Expand video processing as needed to flex with variable demand. Integration with Elemental® Cloud replicates the profiles, capabilities and formats used on premise so that video outputs are identical regardless of where they are processed.

MEDIA MULTIPLIED™

- Deliver video to any screen, at any time, all at once
- Eliminate bottlenecks and reduce risk with fast and reliable transcoding
- Save time and resources with improved workflow efficiency
- Reduce total cost of ownership with a smaller hardware footprint

ELEMENTAL CLOUD

ELEMENTAL CONDUCTOR
File

ELEMENTAL SERVER

Elemental's unified software architecture offers the ability to implement on demand video processing in on-premise, cloud-based or hybrid ground-cloud deployments.

SPECIFICATIONS

Output Formats

Video:
- Apple ProRes
- AVC / H.264 (Baseline, Main, High)
- HEVC / H.265
- MPEG-2 (4:2:0, 4:2:2)
- VC-1 (Simple, Main Advanced)

Audio:
- AAC-LC / AAC-HEV1 / AAC-HEV2
- Dolby Digital (AC-3), AC-3 Passthrough
- DTS Express
- Dolby Digital Plus (E-AC-3), E-AC-3 Passthrough
- Uncompressed WAV, AIFF
- WMA2

Output Containers
- 3GP (3GPP)
- Adobe HTTP Dynamic Streaming (HDS)
- Adobe Media Server (F4F / F4V)
- Apple HTTP Adaptive (MPEG-TS)
- Apple ProRes (MOV)
- CableLabs Compliant Option (MPEG-TS)
- Microsoft Smooth Streaming (ISMV)
- Microsoft Windows Media (WMV / ASF)
- MPEG-2 Part 1, Systems (MPEG-TS)
- MPEG-4 Part 10 (MP4)
- MPEG-DASH (MP4)
- Ultraviolet (CFF, UVU)
- DASH (ISO, TS)

Video Processing
- Adaptive Quantization
- Anti-Aliasing Scaler
- Deblocking Filter
- Frame Rate Interpolation
- Inverse Telecine Support
- Lanczos Scaling
- Logo Insertion
- Look Ahead Rate Control
- Motion Adaptive Deinterlacing
- MPEG-2 Error Concealment
- Noise Reduction
- Scene Change Detection

System Hardware / Software
- Linux CentOS
- 8-16 CPU Cores
- 500 GB RAID-1 Local Storage
- 10GigE Ports (Option)
- Up to 4 High Performance GPUs
- Up to 16 GB Main Memory
- Up to 6 Gigabit Ethernet Ports
- Fibre Channel Interface (Option)
- Hot-Swappable Power Supplies (Option)

System Control
- Automated Load Balancing
- Web-Based User Interface
- Elemental Conductor File
- Integrated CDN Support
- Job Prioritization and Planning
- Multiple Authentication Tiers
- Notifications and Alerts
- REST XML API
- SNMP Version 2c
- System Resource & Statistics Monitoring
- Video and Audio Preview

Other Features
- 4K Ultra HD Output
- Ad Avail Blanking & Black-Out Capability
- Apple Store Compliance
- Audio Channel Mixing
- Audio Loudness Management (CALM Compliant)
- Burned-In Timecode
- Caption Extraction and Passthrough
- Comprehensive Encryption / DRM Support
- Forensic Watermarking
- Multiple Audio Tracks (SAP)
- Nielsen ID3 Support
- Open Caption Support
- SCTE-35 and SCTE-104 Support
- Support for Auxiliary Data (EBIF / KLV / V-Chip / CGMS-A)

Ready to get started?

Contact us or visit our website to learn more about Elemental Server and video delivery to any screen, anytime – all at once.

+1 888.900.8104
elementaltechnologies.com
info@elementaltechnologies.com
@elementaltech

225 SW Broadway, Suite 600
Portland, OR 97205

ELEMENTAL SERVER

Learn More
elementaltechnologies.com/server