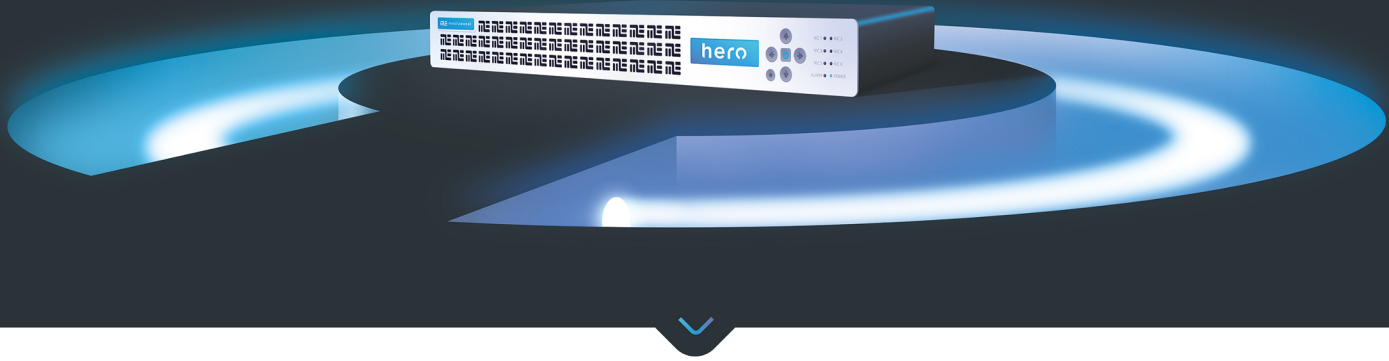
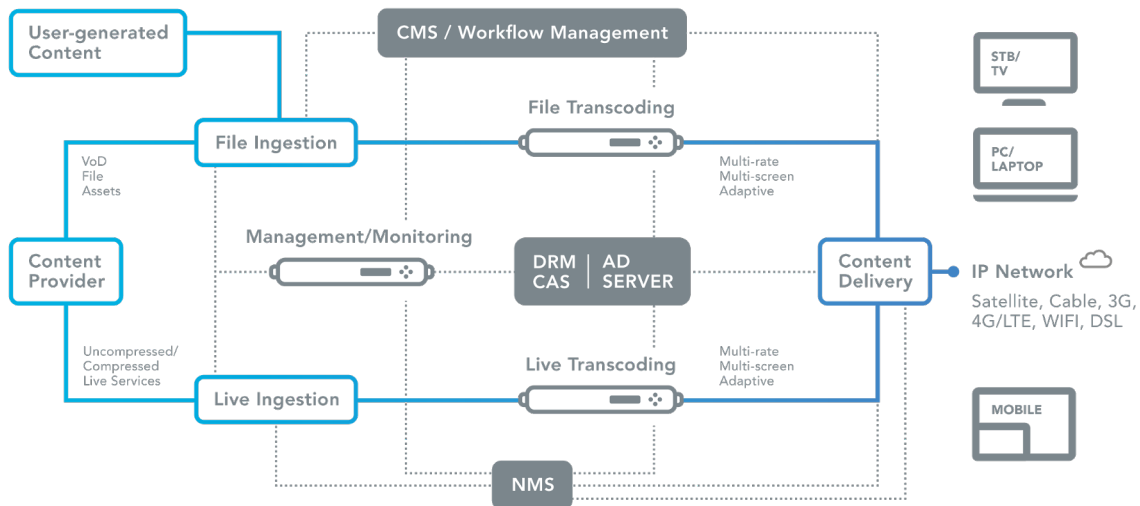


Multiscreen File Transcoder

4K



Media Excel defines the adaptive bitrate, multi-device transcoding standard for multiscreen video delivery. The HERO product line enables Live and File workflows in a single platform and delivers content to over 400 million multiscreen subscribers worldwide. Media Excel's five 9s reliability powers the 24/7, mission critical deployments of Fortune 500 companies and global brands in Broadcast, Cable, Satellite, IPTV, Pay TV, OTT/TVE, Mobile and Government/DoD.



Unique advantages

Video quality

- Industry-leading quality video for HEVC, AVC and MPEG-2
- Superior compression performance and rate control
- Native support for mezzanine, playout and adaptive formats

reliability

- 99.999% proven uptime in 24/7 operations
- Quality control monitoring and reporting
- Enhanced workflows management and load balancing

VERSATILITY

- Local and cloud storage integration with progressive ingest
- Multi-language subtitle and audio sidecar processing
- On-premise, Virtual, Cloud and Hybrid deployments

Advantages

- Delivers unmatched video quality & service reliability
- Installs on virtualized architectures, x86 blades or COTS/IT servers
- Enables both Live/Linear and File/VoD workflows
- Cooperates seamlessly with local & remote HERO units
- Scales with service demand and business growth
- Sync across instances for frame-accurate adaptive and highly-available workflows
- CPU/GPU/SoC hybrid encoding for best performance and quality

Input

- INTERFACE**
- Gigabit ethernet (up to 6 ports)
 - Fibre channel interface *

- NAS/SAN**
- NFS, CIFS/SAMBA
 - Cloud object storage (Amazon, Azure etc)

- AUDIO/VIDEO CODECS**
- Avid DNxHD
 - Apple ProRes
 - Canopus HQ Video
 - DVCPro
 - H.265/HEVC
 - H.264/AVC, AVC-Intra
 - H.263, MPEG-4
 - IMX 30/40/50
 - MPEG-2 (4:2:2, 4:2:0)
 - MJPEG
 - XDCAM
 - VP6, VP6F, VP6A
 - Windows Media WMV/VC-1
 - Windows Media Audio & Audio PRO
 - PCM
 - MPEG-1 Audio Layers I, II & III

- AAC/AAC-HE v1 & 2 (MPEG-2, MPEG-4)
- AC-3 (DD), E-AC-3 (DD+)

- CONTAINERS**
- MPEG-2 TS
 - MPEG-2 PS VOB
 - 3GP, 3GPP
 - AVI, MP3, MP4, FLV, F4V
 - Quicktime MOV
 - MXF (OP1A, OPAAtom)
 - ProRes
 - WMV, WMA, ASF

- AUXILIARY DATA**
- Line 21, CEA 608/708 closed captions
 - OP-47, DVB-Teletext subtitles
 - SCC, TTML, DFXP, SMPTE-TT, SRT, DFXP
 - DVB-Teletext
 - Multiple subtitle tracks/languages
 - Multiple audio tracks/languages
 - MIPS KLV medatata sync/async
 - SCTE-35 ad signaling

Output

- AUDIO/VIDEO CODECS**
- H.265/HEVC Main and Main-10 *
 - H.264/AVC BL/MP/HP
 - MPEG-2
 - AAC/AAC-HE, v1 & 2
 - Dolby EAC3/AC3+ *
 - MPEG-1 Audio Layers I & II

- 4K/8K Ultra HD, 1080, 720, 540, PAL, NTSC
- Custom resolutions down to QCIF
- Rec 2020 WCG
- HDR-10, HLG, SDR conversion

- AUXILIARY DATA**
- CEA 608/708 closed captions
 - OP-47, DVB-Teletext subtitles
 - WebVTT, TTML, DFXP, ISMT subtitles
 - DVB-Teletext passthrough, burn-in
 - Multiple subtitle tracks/languages
 - Multiple audio tracks/languages
 - Multiple subtitle tracks/languages
 - Multiple audio tracks/languages

- CONTAINERS**
- Apple HLS, TS/fMP4
 - Microsoft Smooth Streaming
 - MPEG-DASH, TS/fMP4 CMAF
 - MPEG-2 TS
 - MXF
 - ISMA MP4

- FORMATS**
- Progressive and interlaced output
 - Frame rates: 1 - 60 Hz

Transcoding features

- PRE-PROCESSING**
- Cloud storage progressive ingest
 - Auto/manual program/language selection
 - VBI black-out control
 - Contrast/Brightness/Gamma control
 - Audio gain control
 - Error concealment logic
 - De-blocking & noise reduction filters
 - Content adaptive de-interlacing
 - Frame scaling with anti-aliasing options
 - Smoothness/Sharpness control
 - Cropping per output
 - Graphic overlay (4 layers with alpha color)
 - Timecode burn-in
 - EIA 608/708, OP47, DVB-Sub burn-in/OCR

- POST-PROCESSING**
- Dynamic audio normalization
 - Loudness management
 - Adaptive/multi-rate output
 - NTP-synced, GOP-aligned outputs
 - Multiple audio tracks/languages output
 - Multiple publishing points for redundancy
 - Auto-generation/retrieval of DRM keys
 - Network traffic shaping/smoothing
 - Aspect ratio adaptation
 - WebDAV/FTP/HTTP support
 - R-sync/reverse-proxy support
 - CDN authentication and publishing
 - PlayReady v.2, AES & CENC encryption
 - DRM/CA KMS integration

- VIDEO**
- Up to 4:2:2 10 bit WCG support
 - Frame rates (Hz): 1 – 60
 - Rate control: CBR, VBR, ABR
 - Look ahead and dual pass options
 - Progressive and interlaced encoding
 - High quality frame rate conversion
 - Low latency mode

- AUTOMATION FEATURES**
- Watch folder automation
 - Cloud storage direct integration
 - Job prioritization and queue management
 - Job parallelization
 - MP4 & TS archival/recording automation
 - Dynamic mosaic screen generation
 - Customizable thumbnail extraction
 - Customizable file naming options
 - Ad avail generation (CableLabs ESAM)
 - Ad replacement/blocking automation
 - Quality control reporting

- AUDIO**
- Audio-only/radio processing option
 - Pass-through option
 - Re-sampling, down-mix processing
 - Multiple audio tracks/languages

Management

- MANAGEMENT/CONTROL**
- Central management for Live & File workflows
 - Watch folder based automation
 - Manual job creation via API
 - Web-based management console
 - SOAP/XML & REST APIs
 - LDAP-based multi-tier user authentication

- Automatic load balancing
- Batch, secure remote firmware upgrade
- Configurable audio/visual alarms and SNMP v.2 traps/alarms
- NIC bonding/teaming & VLAN support
- NAS integration (NFS, SAMBA)

Ecosystem

- MEDIA SERVERS**
- Amazon S3 Storage
 - Azure Media Services
 - Unified Streaming (USP)
- VIRTUAL/CLOUD**
- VMWare, KVM, HyperV
 - Docker, Kubernetes, AKS
 - Azure, AWS, Google

Chassis

- FORM FACTOR**
- 1U 19" wide (rack mount)
 - 25.6" (650mm) depth
 - 20lbs (9.3kg)
- POWER SUPPLY**
- AC 90-264V, 47- 63Hz
 - 350~600w

- ENVIRONMENTAL**
- Op. temp: 0 ~ 50° C (32 ~ 122° F)
 - Storage temp: -20 ~ 65° C (-5 ~ 150° F)
 - Humidity: 5 to 90 %
 - Shock: 10G / 11ms in all axis
 - Vibration: 0.8G / 5 to 100 Hz

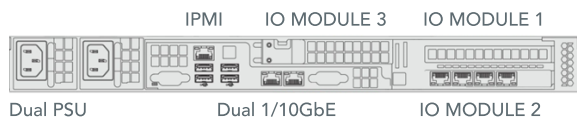
- REDUNDANCIES**
- Dual hot-swappable PSU
 - Up to 6 GigE ports, bonding
- DISPLAY & INTERFACE**
- 32-character LCD
 - front panel controls

- COMPLIANCE**
- FCC Class A
 - CE/RoHS 5-compliant
 - WEEE-compliant
 - EN61000-6-2
 - EN55022/24
 - EN60950:2000
 - UE 89/336/EEC
 - UE 73/23/EEC

Product ordering options

CODEC	RESOLUTION	DEPLOYMENT
<input type="checkbox"/> MPEG-2, H.264 HP	<input type="checkbox"/> Up to FHD 60fps	<input type="checkbox"/> Hardware appliance
<input type="checkbox"/> +HEVC Main 4:2:2 10	<input type="checkbox"/> Up to UHD 4K 60fps	<input type="checkbox"/> VM, docker on cloud
	<input type="checkbox"/> Up to UHD 8K 60fps	

IO/PROCESSING MODULE 1 & 2 (TWO OF FOLLOWINGS) 1. <input type="checkbox"/> 2p NIC <input type="checkbox"/> 4p NIC <input type="checkbox"/> RJ-45 <input type="checkbox"/> SFP 2. <input type="checkbox"/> GPU/SoC HW accelerator (not user selectable)
IO MODULE 3 1. Low Profile <input type="checkbox"/> 2p NIC <input type="checkbox"/> 4p NIC <input type="checkbox"/> RJ-45 <input type="checkbox"/> SFP



* Optional items: certain features are available in specific models only
 ** Specifications subject to change without notice