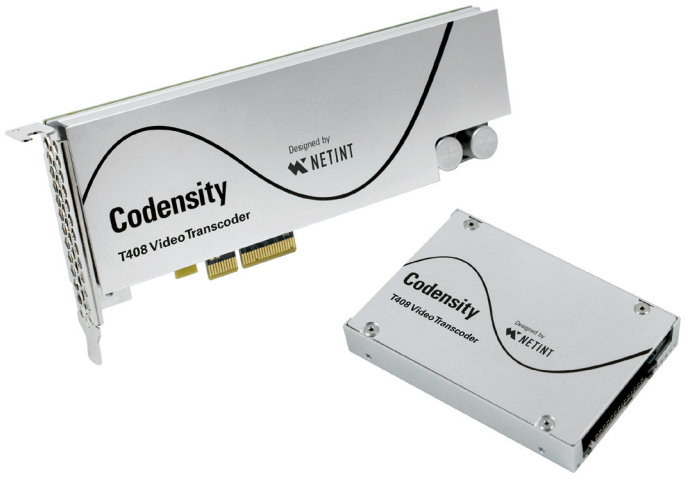
NETINT

PRODUCT BRIEF

Codensity T408 Video Transcoder

High Density Video Transcoding

Video content is the leading source of traffic on the Internet. Video is often generated and transmitted using the ubiquitous H.264 AVC video encoding standard. Meanwhile, H.265 HEVC video delivers equivalent quality with up to a 50% reduction in file size and bandwidth requirements, making it the codec of choice for newer video end points and devices. Transcoding between these top two video encoding standards is a common requirement for real-time streaming applications and services, however H.265 requires up to 10x the processing power of comparable H.264 video quality, limiting the scalability of software or even GPU-based video transcoding solutions. Codensity™ T408 Video Transcoders deliver scalable encoding ladder generation and real-time video transcoding between H.264 AVC and H.265 HEVC formats up to 4K UHD video resolution.



FEATURES

Scalable H.264/H.265 Real-Time Transcoding

Leverages NVMe Server Technology
T408 modules designed to plug into NVMe U.2 bays

High Density
4K60 or 8x 1080p30
encode/decode/transcode

FFmpeg-compatible SDK

BENEFITS

Improves Real-Time Transcoding Economics
Transcode and transrate live video content

Saves Equipment and Rack Space

80% Less Power compared to alternative software transcoding solutions

Simplified Integration

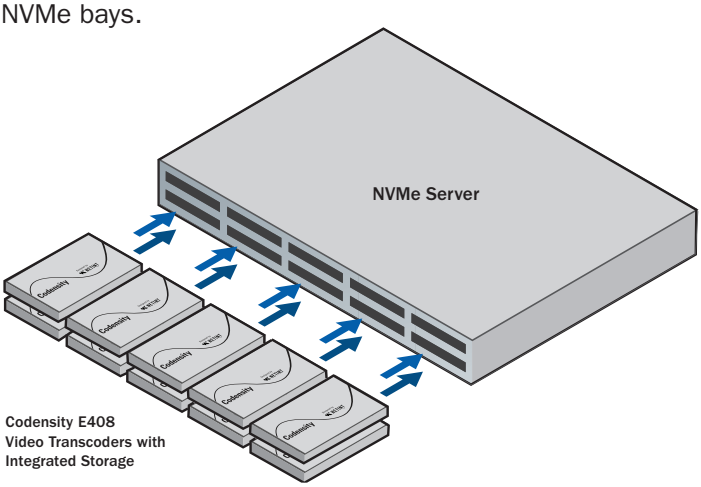
Designed for cloud transcoding architectures

High Density Real-time UHD Video Transcoding

Codensity T408 modules take full advantage of ASIC-based video processors inside the Codensity G4 SoC technology to support a staggering H.264/H.265 transcoding throughput of 60 fps of 4K UHD video, or 8x 1080p streams @ 30 fps per T408 module. At lower resolutions, even more simultaneous streams can be supported. By offloading complex encode/decode algorithm processing inside the ASIC, the T408 video transcoders minimize host CPU utilization. The result is a significant improvement in real-time transcoding density compared to any software or GPU-based transcoding solution.

Integrates into Enterprise-Class NVMe Servers

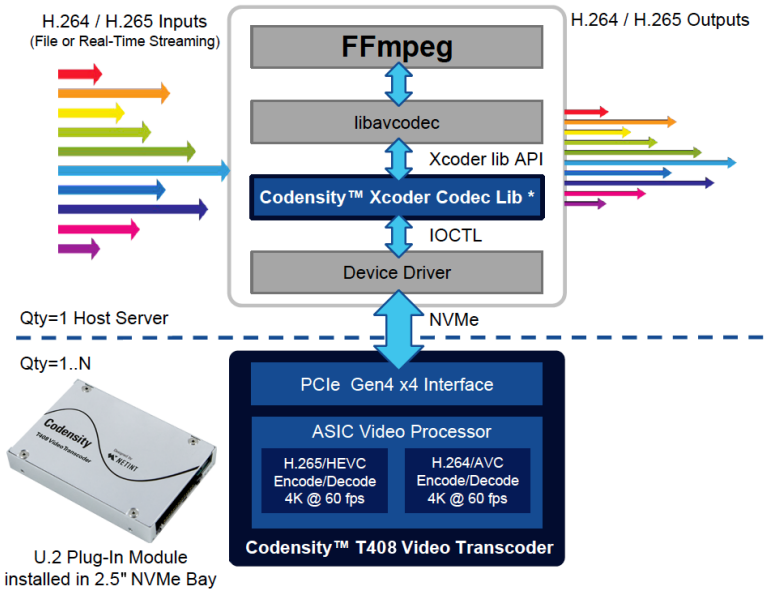
The T408 video transcoding solution offers an elegant, simple, yet effective hardware architecture for transcoding scalability. SSD storage products are increasingly available based on PCIe 2.5" U.2 form factor. Similarly, NVMe was designed as a high performance, low latency, and extensible interface protocol for fast storage I/O. Enterprise-class server vendors have embraced these trends with an increasing variety of storage server products designed to host multiple U.2 NVMe bays. But rather than adding storage capacity, instead transcoding capacity can be added by plugging in Codensity T408 modules into the NVMe bays.



A mid-range Intel® multi-core 1U server with 10x NVMe bays can host 10x T408 transcoder modules supporting 80x simultaneous 1080p @ 30 fps real-time transcoding sessions.

Software Integration with FFmpeg Library Support

Many video processing and transcoding applications developers are familiar with FFmpeg, an opensource software library with a vast suite of video processing functions. The Codensity solution includes a highly-efficient FFmpeg compatible SDK, requiring operators to simply apply a FFmpeg/libavcodec patch to complete the integration. The libavcodec patch on the host server functions between Codensity T408 NVMe interface and the FFmpeg software layer, allowing existing video transcoding applications already using FFmpeg to achieve quick and significant performance and capacity upgrades with Codensity T408 Transcoders.



High Power Efficiency

Each Codensity T408 U.2 module consumes only 7W of power at full load. Plug 10x T408 U.2 modules into a 1RU server, and you have a highly efficient video transcoding cloud server.

Codensity T408 Video Transcoder Technical Specifications

	T408 - U.2	T408 - AIC
Form Factor	U.2 (SFF-8639)	AIC (HHHL)
Interface	PCIe 3.0 x4	
Protocol	NVMe	
Power Consumption (Typical)	7W	
Usage	24/7 Operation	
Operation Temperature	0 degrees C to 70 degrees C	
RoHS Compliance	Meets requirements of European Union (EU) ROHS Compliance Directives	
Product Health Monitoring	Self-Monitoring, Analysis, and Reporting Technology (SMART) commands	
	Temperature Monitoring and Logging	
Hardware Interface	Available U.2 or PCIe slot	

	H.264 AVC Encode/Decode	H.265 HEVC Encode/Decode
Profile	CBP / BP / XP / MP / HiP / HiP10	Main / Main10
Level	1 to 6.2	1 to 6.2 Main-Tier
Max Resolution	8192 x 5120	
Min Resolution	32 x 32	
Scan Type	Progressive	
Bitrate	64kbit/s to 700Mbit/s	
Software Integration	FFmpeg SDK	
	Direct Integration with LibXcoder API	
Capacity	4K @ 60 fps | 1080p @ 240 fps	

	Advanced Features
Region of Interest (ROI)	ROI permits the quality of some regions to be improved at the expense of other regions
Closed Captioning	T408 supports EIA CEA-708 closed captions for H.264 and H.265 encode and decode
High Dynamic Range (HDR)	T408 supports HDR10 and HDR10+ for H.264 and H.265 encode and decode
Low Latency	T408 supports sub-frame latency
IDR Insert	Forced IDR frame inserts at any location
Flexable GOP Structure	8 presets plus customizable GOP structure

NETINT Technologies is an innovator of SoC solutions intersecting computational storage and video processing. Its Codensity portfolio enables cloud data centers, edge computing companies, and content providers to deploy scalable high-performance applications, while minimizing their data storage and video processing costs. NETINT, founded by an experienced team of storage SoC veterans, is a Canadian venture-funded high-tech company with R&D facilities in Vancouver, Toronto and Shanghai, China.

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For more information, visit **www.netint.ca**

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