

QuadraVideoServers

Quadra Video Servers

320 Streams. 500 Watts. Game Over.



Built with award-winning Smart VPUs, NETINT video servers deliver 10x more throughput at one-tenth the cost of CPU or GPU-based systems. VPUs handle heavy video lifting, freeing CPUs for everything else—crushing the competition in density, efficiency and TCO.

Maximum stream density—coming and going

One compact 1RU server handles up to 480 simultaneous 1080p30 decodes and 320 encodes with ultra-low latency.

Ultra-low TCO, easy on your bottom line

Cut OPEX and CAPEX by up to 80% compared to CPU-based solutions. VPU's efficiency enables smaller footprint which consumes less power.

Simple stream management, no dev team required

Preloaded with NETINT Bitstreams[™] management tool to simplify live stream workflows and automate technical FFmpeg/GStreamer tasks.

Quadra Video Server

Quadra T1U Smart VPU





Architecture		x86	ARM		
CPU		AMD [®] EPYC	Ampere [®] Altra Max		
Server Chassis		Supermicro [®] 1114S-WN10RT	Supermicro Mega DC ARS-110M-NR		
ASIC VPU		10x T1U	10x T1U	Codensity G5 ASIC	
Software		Preloaded with N	-		
Size / Form Factor		1U	1U	U.2	
Power Consumption		~500W	~500W	17W	
Artificial Intelligence		150 TOPS	150 TOPS	15 TOPS	
Encode		320x 1080p30, 80	20x 1080p30, 5x 4Kp30		
Performance	Decode	480x 1080p30, 120	25x 1080p30, 6x 4Kp30		
Codece	Encode	H.264, HEVC, AV	H.264, HEVC, AV1, JPEG, HEIF, AVIF		
Codecs	Decode	H.264, HE\	H.264, HEVC, VP9, JPEG		
Features		Capped bitrate CRF / scaling / cropping / padding / overlay / color conversion			

	-	Quadra Mini Server Halfrack	Quadra T1M VPU		
Architecture		x86			
CPU		Intel® 13th Gen i7			
Server Chassis		Advantech® Vega 6321			
Size / Form Fac	ctor	1U Half Rack	M.2		
ASIC VPU		1x T1M	Codensity G5		
Video Interface)	SDI capture card / Blackmagic [®] Decklink	-		
Software		Preloaded with NETINT Bitstreams™	-		
Power Consumption		~138W	8-10W		
D. (Encode	20x 1080p30, 5x 4Kp30	20x 1080p30, 5x 4Kp30		
Performance	Decode	25x 1080p30, 6x 4Kp30	25x 1080p30, 6x 4Kp30		
. .	Encode	H.264, HEVC, AV1, JPEG, HEIF, AVIF	H.264, HEVC, AV1, JPEG, HEIF, AVIF		
Codecs	Decode	H.264, HEVC, VP9, JPEG	H.264, HEVC, VP9, JPEG		
Features		Capped bitrate CRF / scaling / cropping / padding / overlay / color conversion			



Quadra Video Server



Architecture	x86				
CPU Options	AMD EPYC [™] 7232P Server Processor (8-core)				
	AMD EPYC 7543P Server Processor (32-core)				
	AMD EPYC 7713P Server Processor (64-core)				
Operating System	Ubuntu 20.04.05 LTS				
Memory	16x 16GB DDR4-3200				
Storage	400GB M.2 SSD				
NVMe Support	10x				
PCIe Expansion	Up to 3x PCIe slots				
Network Options	Dual 10GBase-T LAN				
Power Consumption	~500W				
Power Supply	700W: 100 - 140Vac				
	750W: 200 - 240Vac				
	750W: 200 - 240Vdc (CCC only)				
ASIC transcoder	10x Quadra T1U Smart VPUs				
Encoding capacity	Up to 20x 8Kp30, 80 4Kp30 or 320x 1080p30				
Decoding capacity	Up to 30x 8Kp30, 120 4Kp30 or 480x 1080p30				
Codec Support	Encode: H.264, HEVC, AV1, JPEG, HEIF, AVIF				
	Decode: H.264, HEVC, JPG, VP9				
Software Integration	FFmpeg, GStreamer, NETINT SDK				
	Preloaded with NETINT Bitstreams [™]				
Physical Dimensions	W: 17.2" (437mm), H: 1.7" (43mm), D: 23.5" (597mm)				
Rack Size	1RU				
Weight	39 lbs (17.69 kg) fully loaded with 10x T1Us				
Environmental	50 degrees F to 95 degrees F operating temp, 8% to 90% operating relative humidity				
Power Inputs	100 - 140Vac / 8 - 6V / 50-60Hz				
	200 - 240Vac / 4.5 - 3.8A / 50-60Hz				
	200 - 240Vdc / 4.5 - 3.8A (CCC Only)				
Certifications	RoHS Compliant, UL Approved				

5



Quadra Video Server ARM



Architecture	ARM				
CPU	Ampere Altra Max M96-28, 96-cores				
Operating System	Ubuntu 22.04.3 LTS				
Memory	256GB of DDR4-3200 RDIMM				
Storage	400GB M.2 SSD				
NVMe Support	10x				
PCIe Expansion	Three PCIe 4.0 x16 LP slots One PCIe 4.0 x16 AIOM slot				
Network Options	1 RJ45 Dedicated IPMI LAN port 2x 25Gb SFP28 Ethernet LAN Ports				
Power Consumption	~500W				
Power Supply	800W Redundant Platinum Level				
ASIC transcoder	10x Quadra T1U Smart VPUs				
Encoding capacity	Up to 320x 1080p30, 80x 4Kp30 or 20x 8Kp30				
Decoding capacity	Up to 480x 1080p30, 120x 4Kp30 or 30x 8Kp30				
Codec Support	Encode: H.264, HEVC, AV1, JPEG, HEIF, AVIF				
	Decode: H.264, HEVC, JPG, VP9				
Software Integration	FFmpeg, GStreamer, NETINT SDK				
	Preloaded with NETINT Bitstreams™				
Physical Dimensions	W: 17.2" (437mm), H: 1.7" (43mm), D: 23.5" (597mm)				
Rack Size	1RU				
Weight	39 lbs (17.69 kg) fully loaded with 10x T1Us				
Environmental	50 degrees F to 95 degrees F operating temp, 8% to 90% operating relative humidity				
Power Inputs	750W: 100-127Vac / 50-60Hz				
	800W: 200-240Vac / 50-60Hz				
	800W: 230-240Vdc / 50-60Hz				
Certifications	RoHS Compliant, UL Approved				





Quadra Mini Server Half rack



Ideal for mobile broadcast for onsite event recording and distributon of single stream with edge processing.

Push multiple simultaneous streams live to social sites.

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Blackmagicdesign

SDI capture card options:

• Blackmagic Decklink Duo 2

- Supports up to 4x 1080p60 or 1080i60 - Supports multiple outputs resolutions (1080p30, 720p30, 540p30, 360p)

CPU	Intel 13th Gen (i7-13800HE)		
Server Chassis	Advantach Vega 6321H		
Memory	16G Dual DDR5 SODIMM		
Storage	2x M.2 Type E (PCle Gen 3x1)		
NVMe Support	M.2 256GB NVMe		
Video Interface	SDI capture card / Blackmagic® Decklink		
Display	2x HDMI 2.0		
USB	2x USB 3.2 Gen 2		
Ethernet Network	3x 2.5G RJ45		
Power Consumption	138W		
Power Supply	AC/DC 138W power adapter		
ASIC transcoder	1x Quadra T1M VPU		
Encoding capacity	Up to 20x 1080p30 or 5x 4Kp30		
Decoding capacity	Up to 25x 1080p30 or 6x 4Kp30		
Codec Support	Encode: H.264, HEVC, AV1, JPEG, HEIF, AVIF		
	Decode: H.264, HEVC, JPG, VP9		
Software Integration	FFmpeg, GStreamer, NETINT SDK		
	Preloaded with NETINT Bitstreams [™]		
Physical Dimensions	330mm x 160mm		
Rack Size	1RU & Half rack		
Environmental	50 degrees F to 95 degrees F operating temp, 8% to 90% operating relative humidity		
Power Inputs	100 - 240Vac / 50-60Hz		
Certifications	RoHS Compliant, UL Approved		

x86

Architecture

- Blackmagic DeckLink 4K Extreme 12G
 - Supports up to 2x 4Kp60
 Supports multiple output resolutions (1080p30, 720p30, 540p30, 360p)

NETINT

Artificial Intelligence Specs

Deployment Workflow for Pre-trained AI models

Al deep learning models are imported to Quadra VPUs with the NETINT AI Toolkit then processed (Import, quantization, validation & optimization), exported, and executed on Quadra Neural Processing Units (NPUs).

Specifications

- Test hardware: T1A, test firmware version: 3.1
- AI capability per G5 ASIC: 18 TOPS
- Datatype for evalutation: INT8, batch size: 1
- Performance based on original model without pruning, sparsity or modification
- Quadra supports multiple AI modes (Full, Eco, Off) depending on power/performance requirement

Specification	Input Size	Performance FPS @ 1 GHz	
Yolov5s	640x640	78	
Yolov5s	320x320	231	
Yolov4-tiny	416x416	276	
ResNet 50	224x224	228	
MobileNetv2	224x224	1234	
FSRCNNx3	360x640	36	
DeepLabv3	257x257	452	
BiSeNetV1	512x512	51	
HrNet	256x192	72	



Supported Frameworks

- ONNX
- TFLite
- PyTorch
- Darknet
- TensorFlow
- Keras



Features

- 8 /16 bit quantization
- Hybrid quantization
- Accuracy validation
- Graph optimization
- Pre-processing integration



Features

- Hardware-aware
 optimization
- Execution graph generator
- Performance profiling
- Python/C Inference API

AI Deep Neural Network Inference Engines

INT8 Trillion Operations Per Second (TOPS)

- T1U: 15 TOPS
- T1A: 18 TOPS
- T2A: 36 TOPS

AI Deep Learning Frameworks used:

- Caffe
- Darknet
- Keras
- ONNX
- PyTorch
- TensorFlow
- TensorFlow Lite

Applications for Quadra AI Inference Engine include:

- ROI encoding
- Scene detection
- Background removal
- Video enhancement
- Facial recognition
- Object detection



FFmpeg power without the pain

NETINT's Bitstreams[™] replaces command lines with a friendly dashboard, ready-made templates, and always-on VPU optimization.

Manage, monitor, and scale live streams effortlessly.

No code. No chaos. Just streaming simplified.



NETINT

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Dashboard View

Command central for your streams

- **FFmpeg power. Zero code.** Tap into FFmpeg 7.0 without ever writing a command line
- Built for non-engineers Streamlined interface designed for operators, not developers
- Live stream launch in clicks Prebuilt templates make setup fast, repeatable, and foolproof
- VPU health at a glance Real-time dashboard shows system load, errors, and stream status
- Preloaded and ready to go Comes installed on every Quadra server—no setup required

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Preview and manage all live encoding sessions with a clear visual breakdown of each stream.



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Templates

Set once. Stream often.

Use prebuilt or custom templates to standardize configurations and launch streams faster.

Bitstreams was built for companies that want the power of FFmpeg without requiring a dev team. Designed for edge deployment, it gives teams a code-free way to manage live streams, optimize video workflows, and monitor VPU health—all through an intuitive interface.

Easy to Deploy

- Preloaded on all Quadra Video Servers
- Compatible with legacy NETINT hardware
- Runs on Linux (x86 or ARM) via Docker
- Minimal setup—few command strings to launch
- Self-managed upgrades during your own
 maintenance window

Bitstreams Features:

- Simplified, code-free configuration of FFmpeg 7.0 for non-technicals to manage and distribute
- Dashboard visual quick-check for:
 - Streaming Error Alerts
 - System Health Check
 - CPU/VPU capacity loads
- Generates report logs for stream status
- Preset templates for simplified management of live stream sessions, set once-use many
- Web app or custom API
- Annual subscription model includes new features, bug fixes, tech support, and failover redundancy

Live Streaming:

- Supports long duration, multiple hour events
- Input: SRT, RTMP
- Output: Dash/HLS

Live Video Encoding:

- System runs 24/7/365
- Records to a file
- Input support: SRT, RTMP, Dash/HLS, Multicast/UDP
- Output support: Dash/HLS, Multicast/UD

Here's what's possible with VPUs

Encoding at the Edge

Live / VOD Source

Dynamic Ad Insertion: Customized for different regions with reduced latency.

Cloud Gaming: Rendering and encoding at the edge to reduce latency.

CDN

Ad Decision

Ad Server

Quadra delivered:

New form factor M.2 VPU resulting from cooperative development: T1M VPU. Delivers high quality and low latency encoding with P2P pull of YUV or RGBA.

Live Contribution Encoding

SDI source capture generated a mezzanine stream and ABR ladder at the same time, reducing latency and increasing quality compared with cloud ABR ladder generation.

Quadra delivered:

Affordable, high-quality, high-density encoding of mezzanine stream (4K60 10-bit HEVC) and generated ABR ladder (e.g. 4K/1080p/720p/480p with various codecs & bitrates)



AI Acceleration in Transcoding

Assist with AI detection to key regions of interest during transcoding.



Edge Node with Quadra M.2

Retreives main feed & ad media

On-the-fly ad transcoding and

ladder generation

Manifest stitching

Quadra delivered:

Region of interest coordinates are fed into GPU that runs more advanced AI models, effectively reducing GPU load.

Multiview Encoding for Live Streaming

View multiple games simultaneously in user-defined quad split screen, ideal for fantasy sports watching and betting (YouTube and NBA do this now.)

Quadra delivered:

Stitching 4 independent bitstreams into one tilebased bitstream **encoding once** per combination, NOT per stream (upwards of 210 combos of 4).



We were first.

We created the VPU category to exponentially reduce costs, shrink server footprint and expand global reach.





minutes streamed



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