NETINT

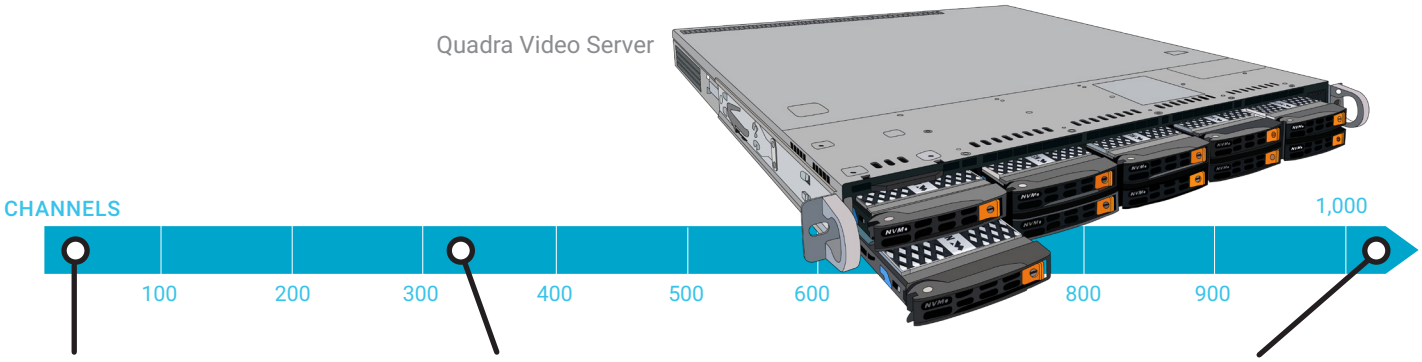
Broadcast Encoding in-a-Box

Scale channels from 20 to 1,000+.

Broadcast Encoding in-a-Box.

20 to 1,000+ channels.

Choose a server by the number of channels you need to deliver. Every size runs the same silicon and the same software, so you add capacity without rebuilding your workflow.



20

SMALL

Quadra Mini Server
Half-rack 1RU

For edge and SDI contribution.

320

LARGE

Quadra Video Server
1RU, 10 VPUs

For OTT services and regional head-ends.

1,000+

STACKED

4x Quadra Video Servers
4RU, 40 VPUs

For national channel distribution.

1080i

Interlaced SDI and IP sources in, progressive 1080p out.

Ins & Outs

11 inputs and outputs, including SDI, ST 2110, SRT, UDP multicast, HLS, DASH and CMAF.

Resolutions

HD, UHD, p30, p60, HDR.
320x 1080p30,
160x 1080p60,
80x 4Kp30, 40x 4Kp60.

Quality

4-10% reduced bitrate than x264 & x265 at the same picture quality.

Advertising

SCTE-35, ad markers, CEA-608/708 captions, Teletext and HDR pass through encoding intact.

Power

1.56 W per 1080p30 channel on the Quadra Video Server. Up to 6x more channels per watt than CPU encoding.

NETINT

Choose server by channel count.

Start with the channel count you need today. Plan additional capacity by the rack unit and stack.

SMALL

Quadra Mini Server

Half-rack 1RU · 1 VPU · ~138 W

20 1080p30 channels **encoded**

25 1080p30 channels **decoded**

10 1080p60 **encoded**

3 4Kp30 **encoded**

10 ABR **ladders**

LARGE

Quadra Video Server

1RU · 10 VPUs · ~500 W

320 1080p30 channels **encoded**

480 1080p30 channels **decoded**

160 1080p60 **encoded**

80 4Kp30 **encoded**

40 4Kp60 **encoded**

160 ABR **ladders**

How to scale to 1,000+ Stack.

1,280 channels in 4RU

Four 1RU Quadra Video Servers, contains 40 VPUs and delivers 1,280 channels in 1080p30.

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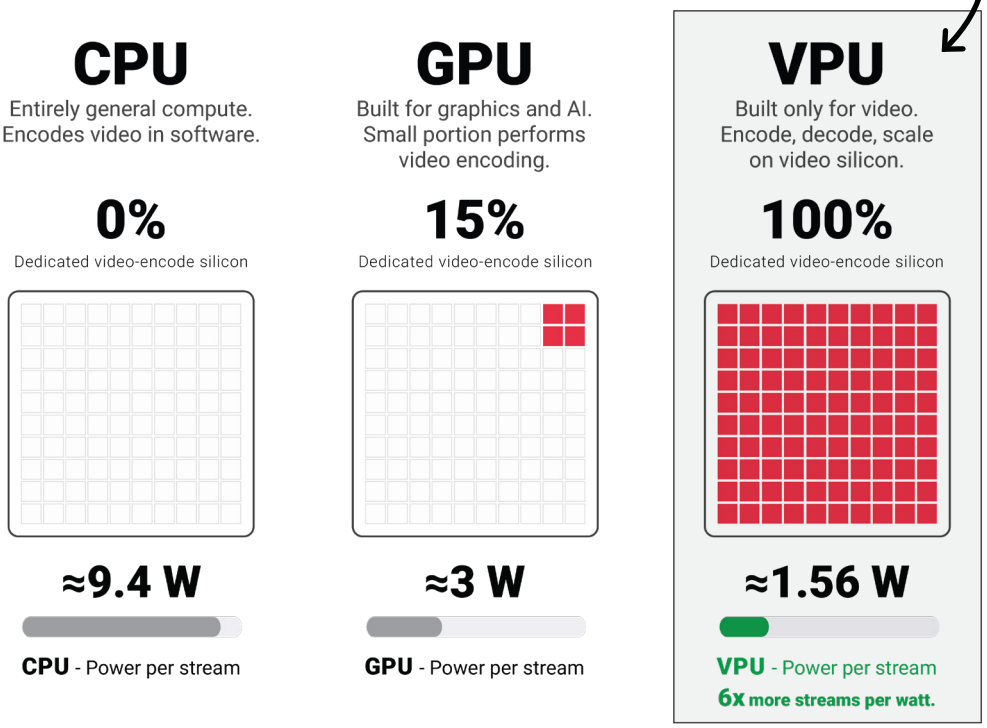
VPUs built only for video.

Each Quadra VPU chip does one job. Decode/scale/encode on dedicated video silicon, raises channel density and lowers power per channel.

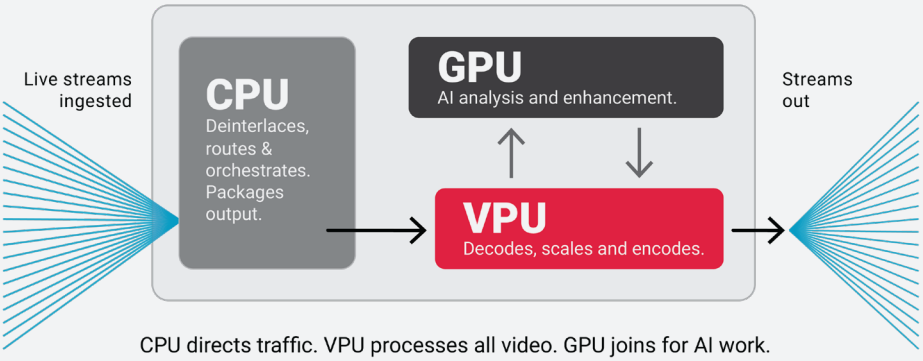


The bottleneck is general-purpose silicon. Software encoding is slow because there is no video silicon underneath. You cannot optimize your way out. It's an architectural problem, not an effort problem.

How the system works.

Inside the server, the CPU routes streams, deinterlaces sources and packages output. The VPU decodes, scales and encodes every channel, so channel count does not depend on CPU load.

Your workflow software drives the server through its API.



CPU directs traffic. VPU processes all video. GPU joins for AI work.

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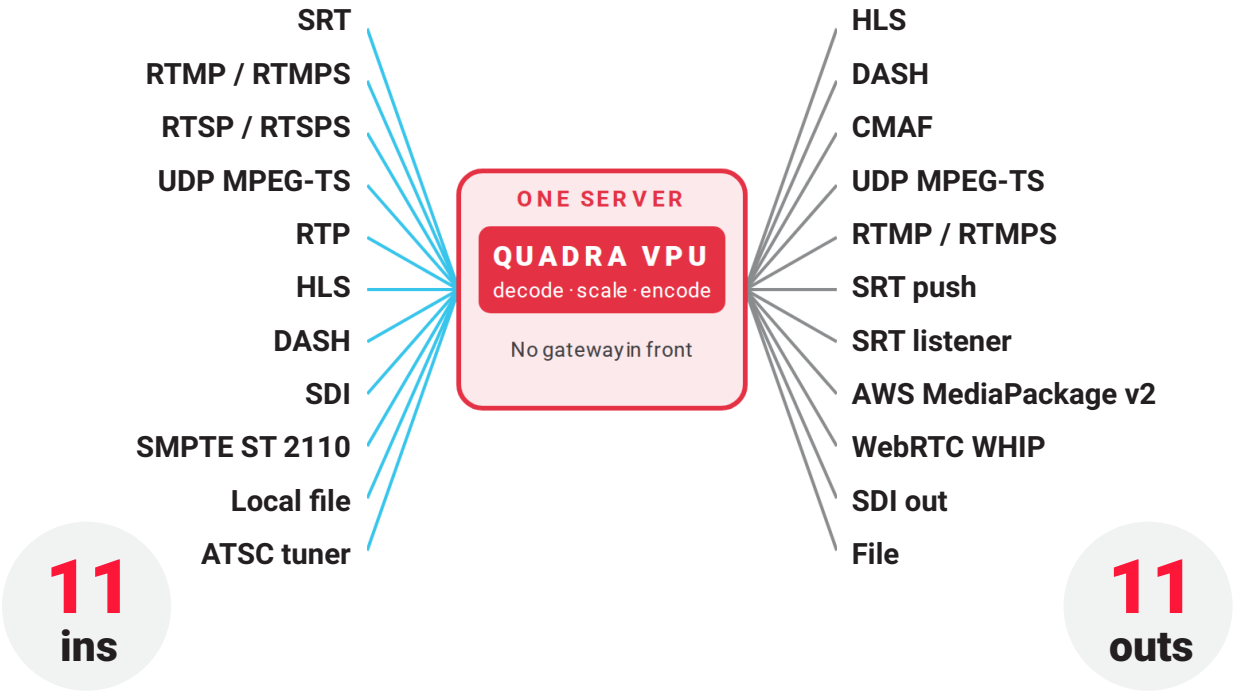
Any input. Any output.

Both Quadra Servers connect to the signal chain you already run. SDI, SMPTE ST 2110, SRT and UDP multicast come in; HLS, DASH, CMAF, MPEG-TS and SDI go out, with no gateway in front.



Video

H.264, HEVC, AV1 (encode), VP9 (decode), YuV for SDI. VBR, CBR, CRF rate control, and 10-bit HDR.

Audio

AAC LC, HE, HEv2, AC-3, E-AC-3, Opus, MP2, MP3, FLAC, PCM. Up and down-mixing 0.1 to 7.1.

Captions

CEA-608 and 708 pass-through, Teletext, DVB Subtitle, WebVTT, TTML, SBTVD.

Ad signals

SCTE-35 pass-thru to HLS, CMAF, MPEG-TS over SRT and MediaPackage v2. SCTE-104 over SDI.

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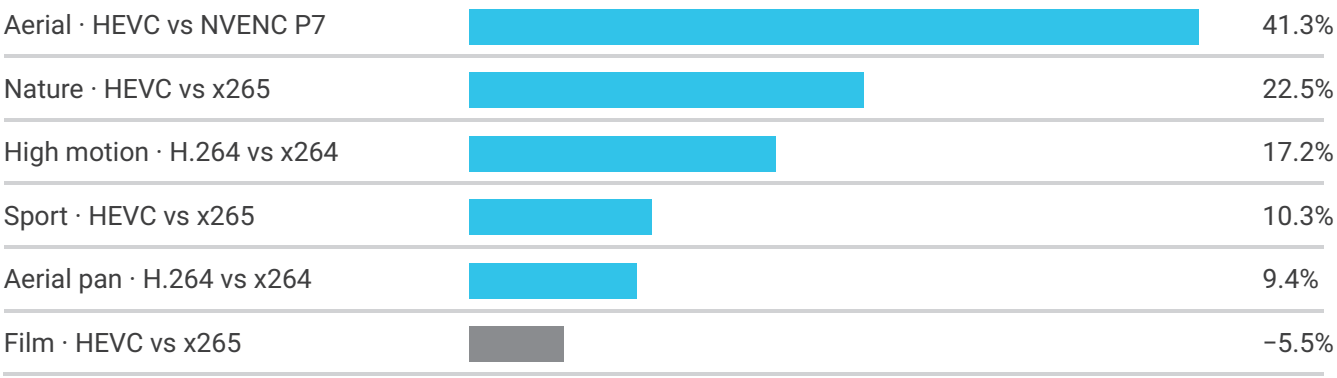
Encoding performance: VPU vs. CPU.

Channel count only matters if picture quality holds. Quadra matches x264 and x265 medium quality at lower bitrate, and stays about 2x faster than NVENC and 3 to 8x faster than CPU encoding as sessions rise.

Bitrate saved at equal VMAF, 1080p clips



Results vary by content. Source: Akamai Throughput and Quality Report V5.7.2.

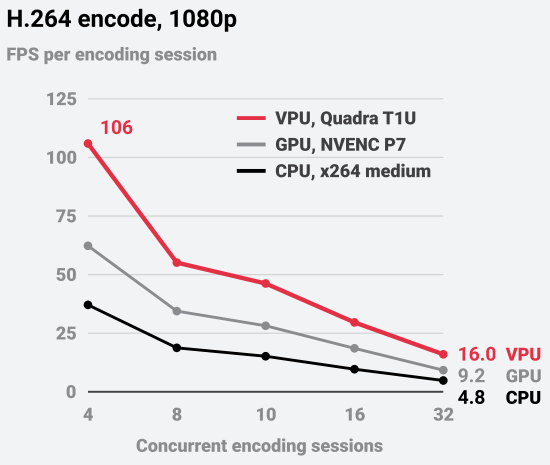
4-10%

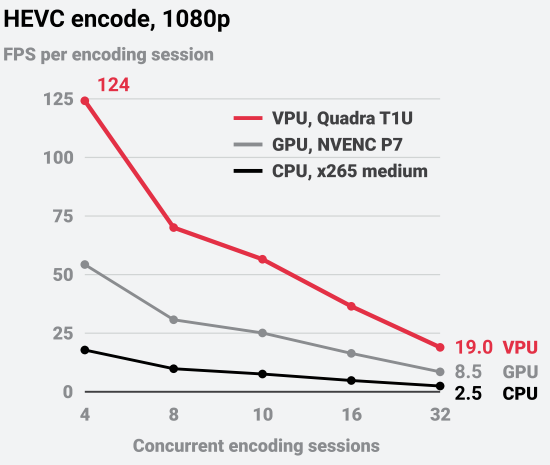
Lower bitrate than x264 / x265 medium, same quality.

<7 ms

Per 1080p frame @ 32 sessions per VPU for H.264 and HEVC.

Frames per second under load.





FPS per encoding session as sessions rise, 1080p. Quadra (red) vs NVENC P7 and x264 / x265 medium. Source: Akamai report V5.7.2.

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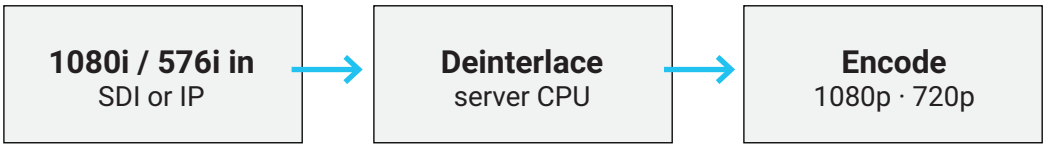
1080i in. Progressive out.

Most broadcast sources arrive interlaced. The server deinterlaces 1080i and 576i sources on its CPU, and the VPU then encodes progressive output.



Interlaced channels per server.

Ask our engineers for interlaced capacity according to your server configuration and source formats.

Progressive frame rates, channels encoded

Format	Small: Quadra Mini Server	Large: Quadra Video Server (1RU)
1080p30	20	320
1080p60	10	160

Built for broadcast signal chains.

Ad markers, captions, subtitles and HDR metadata pass through encoding intact, so downstream systems receive exactly what they expect.

SCTE-35 / 104
Ad markers end to end; SCTE-104 over SDI

Captions
CEA-608/708, Teletext, DVB Subtitle to WebVTT or TTML

SDI and ST 2110
Capture card in the box; SDI input on server

SRT
Caller and listener, passphrase encryption

Rate control
CBR, VBR, CRF, capped CRF, HRD buffering

HDR
HDR10, HDR10+, HLG

Chroma
4:2:0, 8 and 10-bit

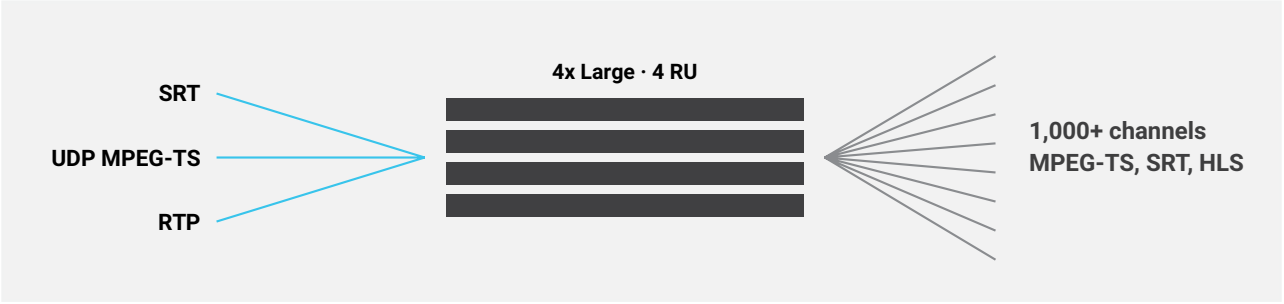
Audio
AAC, AC-3, E-AC-3, MP2, Opus, pass-through

Resilience
A/B input failover, slate on input loss, 24/7 duty

Broadcast and OTT.

Broadcast distribution and OTT run on the same servers, so one platform covers both.

Broadcast

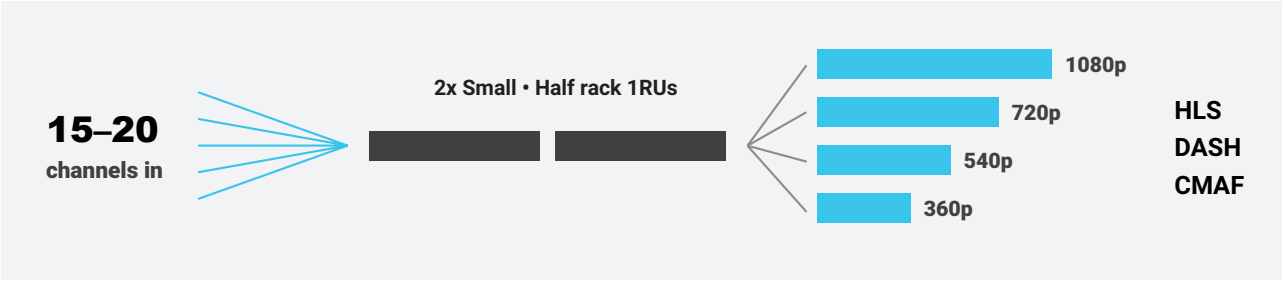


1,000+
Channels distributed

4 RU
Rack space, ~2kW,
and 1,280 channels

4x Large
Quadra Video Servers

OTT



15–20
Channels per service

20
ABR ladders,
10 per Mini Server

2x Small
Quadra Mini Servers,
two per rack shelf.

More than 20 channels? Move to one Quadra Video Server and get up to 160 ABR ladders in 1RU.

NETINT

Contact Us.

Send us your channel plan: source formats, output ladders and target frame rates.

Our engineers will return a sized configuration and arrange evaluation units or cloud testing.

NETINT

VPU Category Leader

Purpose-built silicon for video encoding.

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support@netint.com

Technical docs - docs.netint.com
Releases - docs.netint.com/notify
Product Specs - netint.com/go

225,000+	1.1 Trillion+	Emmy® Award
VPUs in production	Minutes of video encoded	Technology & Engineering Award, 2024