



Technology Partner



Dell and Artesyn: Deploying the Virtual Video Cloud with SharpStreamer™

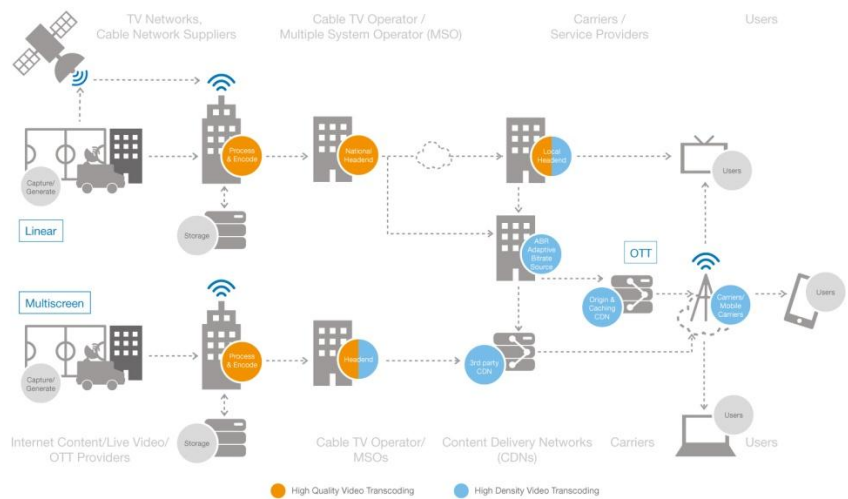
Delivering 6 Times the Video Processing Density at a Fraction of the Cost:

- SharpStreamer features video processing density up to (48) 1080p H.264 transcodes per card
- SharpStreamer™ Add-on card solution works on standard servers such as the Dell R620/T and R720T
- Designed for maximum density in new Dell 1U form factor
- Standard PCI Express full-height ¾ length add-on card compatible with Dell R620, R720 and (Trailbreaker) 1U servers

Artesyn and Dell integrated Video transcoding solutions provide communication service providers and OEMs with the ideal way to monetize OTT video platforms and maximize density while preserving cost:

- Next-day OTT Server Use Case:
 - 26X less time to transcode video
 - Deploys same density as 24 servers
 - Uses 91% less power
- Live Video Transcoding Use Case:
 - Requires 74% less server equipment
 - Uses 84% less power

Artesyn and Dell have enabled SharpStreamer™ technology to deliver higher density video processing solutions to broadcast and telecom service provider networks on standard servers.



The Solution

SharpStreamer acceleration (shown in blue) is targeted at applications such as the secondary distribution head end, service provider OTT video server and ABR server to deliver multiscreen content to users of cable and telecom carrier networks.

Challenges of Today's Networks:

- Service providers prefer using standard servers vs. dedicated hardware for video encoding/transcoding
- Standard Servers with software-based video processing solutions don't scale well to support higher densities, and become costly
- Network demand for video encoding/transcoding is rising as user habits change

Solution Benefits of the Artesyn and Dell Approach:

- Using SharpStreamer add-on card technology, service providers can scale to meet higher densities on existing servers
- Reach higher densities at a fraction of the cost – preserves server investment, less power and cooling, no need to qualify new hardware
- SharpStreamer is built on Intel technology with Media SDK ease of use to support existing x86 applications developers
- Game-changing density – delivering more density/RU than other solutions

SharpStreamer™. No dedicated appliances. Higher density. Standard Servers.

Reduced Capital Equipment Spending

The benefits of an accelerated approach mainly stem from the reduction in server footprint to the datacenter, and the reduced complexity to manage those resources. Network Function Virtualization enables providers to change the type and level of resources needed dynamically, and this applies to video transcoding as the VNF in the use cases below.

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Number of Servers Required	Virtual Servers Required	SharpStreamer Card Accelerated Virtual Server Required
Next-day TV OTT Content Delivery (200 hours of content in 10 different formats)	24	1
Capital Equipment Impact of Acceleration: 83% less equipment cost		
Real-Time Broadcast ABR Transcoding (96 1080p streams)	16	1
Capital Equipment Impact of Acceleration: 74% less equipment cost		

The savings to the service providers in terms of CAPEX equate to spending 74-83% less on equipment alone.

Power Savings and Reduced Overhead Cost

Number of Servers Required	Virtual Servers Required Power	Power Costs per Year	SharpStreamer Accelerated Required Power	Power Costs per year
Next-day TV OTT Content Delivery (200 hours of content in 10 different formats)	11405W	\$9,991	1056W	\$925 (1.056kW*(hours/year)* \$0.1 (energy unit cost/kWh)* 8760 (hours per year))
Power Cost Impact of Acceleration: 91% less power cost				
Real-Time Broadcast Multiscreen Transcoding (96 1080p streams)	7604W	\$6,661	1056W	\$925
Power Cost Impact of Acceleration: 86% less power cost				

The savings to service providers in terms of OPEX equate to spending \$925 per year versus \$6,661 or \$9,991 on an annual basis, a savings of 86-91% less power costs.

Scalability

When network demands increase or decrease for video transcoding, this also allows scaling up and down of resources with lower cost, as the number of video transcodes can be addressed through add-on cards to a lower population of servers. Having a lower population of servers in the network contributes meaningful operating cost reductions as noted above. So, as service providers increase their services to provide premium OTT video services, add-on cards can gradually increase the density levels required without capital equipment expenditures as significant as traditional methods have offered to date.

Ease of Use through Ubiquity of x86 processing in the Cloud

An x86-based way to solve the problem of video processing in the cloud has an important benefit for equipment vendors, in that Intel technology delivers a familiar and easy to use API to speed development and time to market. The Intel® Media SDK enables the transition from a pure software model to a media-offloaded SharpStreamer™.

Artesyn SharpStreamer™

Representative Performance					
# of 1060P30 Transcode Channels					
# of SharpStreamer(s)	1	2	4	6	16
H264 (AVC)	48	96	192	288	768
HEVC	4	8	16	24	64

*Table to be used as reference point based on Intel projected performance per processor. For actual performance, please consult your local Artesyn Field Application Engineer (FAE)



Integration Options

Dell R620



Dell R720



Dell Trailbreaker



About Artesyn

Artesyn Embedded Technologies, formerly Emerson Network Power's Embedded Computing & Power business, is a global leader in the design and manufacture of highly reliable power conversion and embedded computing solutions for a wide range of industries including communications, computing, medical, military, aerospace and industrial. For more than 40 years, customers have trusted Artesyn to help them accelerate time-to-market and reduce risk with cost-effective advanced network computing and power conversion solutions. Artesyn has over 20,000 employees worldwide across nine engineering centers of excellence, four world-class manufacturing facilities, and global sales and support offices.

The Dell Technology Partner Program

Artesyn Embedded Technologies is a Dell Technology Partner and SharpStreamer™ is certified by Dell to run on the Dell platforms specified in the technical architecture section.

The [Dell Technology Partner](#) program is a multi-tier program that includes ISVs, IHVs and Solution Providers. This global program helps partners build innovative and competitive business solutions using Dell platforms. Program resources keep customer costs low and helps to sustain competitiveness.

The program has a structured and streamlined process that combines technology and business strategies with Dell Solution Center expertise to onboard and test partner products on Dell platforms. This testing process helps ensure that products have met the technical requirements to perform well on Dell platforms.

