

Virtuoso

Virtuoso IP Production Platform

Nevision Virtuoso is a revolutionary new software-driven media node platform, offering wide-ranging functionality, fieldupgradable through software.

The Nevision Virtuoso platform is designed to meet the challenges of an IP-based live production environment where the distinction between facilities and contribution is blurring, and where virtualization will play an increasing role, leading to faster time-to-production and greater cost-effectiveness.

The new Nevision Virtuoso platform can be used to perform a variety of tasks or Media Functions, including encoding and decoding, transport protection, monitoring, and signal processing, which can be changed on demand through software licensing.

Media Functions are generally implemented in software running on generic Media Servers, while some of the more process-intensive tasks (e.g. encoding/decoding) require supporting hardware, like Media Accelerators.

The versatile Nevision Virtuoso platform, together with Nevision's VideoIPath management software, are designed to enable to full potential of IP-based lean production to be realized.

- Outside broadcast live sports & event contribution
- Live remote production workflows
- Regional and wide-area contribution networks
- High availability managed media services
- Studio-to-studio media exchange
- Programming and Television distribution networks
- End-to-end service monitoring

Key features

- Software-based approach with license options ensures easy and future-proof upgrade path
- Multi-format video and audio compression
- Adaptation of SDI, ASI and audio signals
- Fully standards-compliant IP media transport
- Advanced audio/video processing
- Content protection and encryption
- High availability device and network redundancy
- Simple integration in any IT/IP network infrastructure
- Powerful monitoring and alarm handling

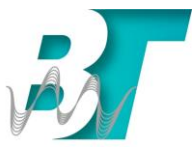
Virtuoso IP Production Platform

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Applications

- IP studio production connectivity and processing

- Virtuoso OS provides easy-to-use user interface for monitoring & control

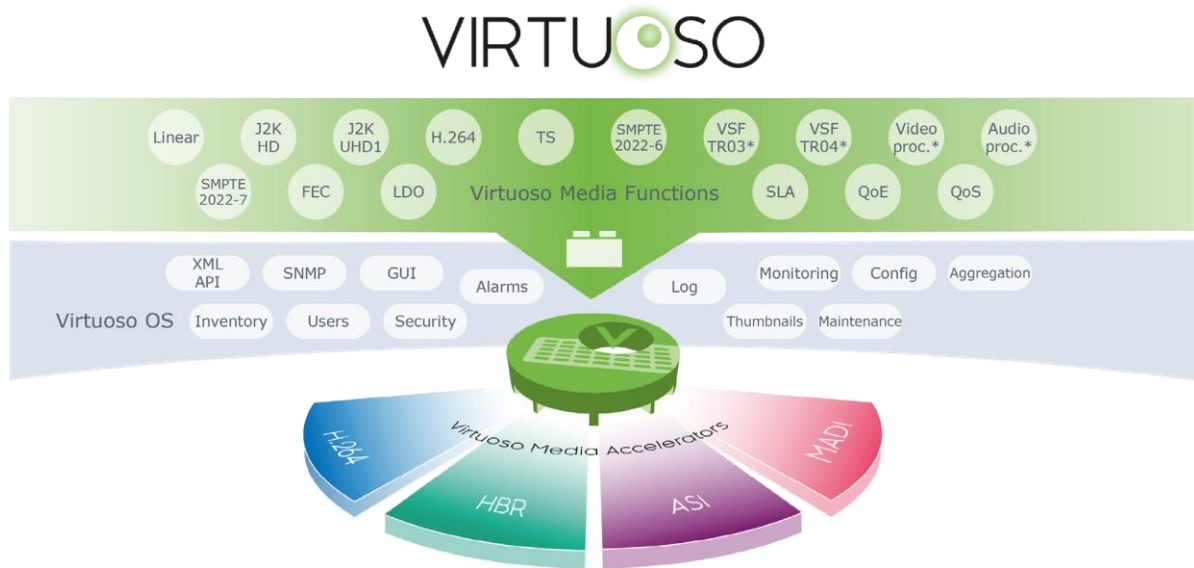


Flexible platform

The Nevision Virtuoso platform has been designed to allow for the provision of Media Servers (appliance) with different characteristics, such as size, number of Media Accelerators they can

Virtuoso through licencing to enable functionality to meet changing business requirements, thereby making it extremely versatile, cost-effective and future-proof.

Virtuoso OS



accommodate and level of modularity, in order to suit virtually any requirement. The Virtuoso M4 appliance is 1RU in size, and can hold up to four Media Accelerators.

Software licensed functionalities

The bulk of functionality of the Nevision Virtuoso is provided by Media Function software. Media Functions can be changed on the Nevision

Nevion Virtuoso offers a set of functionality related to the running of the system itself, such as APIs, logs, security, etc. This functionality is referred to as the Nevision Virtuoso OS (operating system). The easy to use web user interface simplifies operations and allows for fast reconfiguration for live event production. The OS includes network and input/output signal monitoring as well as extensive alarm management. Every event is stored in the logs and can be exported in different formats for reporting and inspection purposes.

- Audio adapters for AES3 and AES10/MADI

Virtuoso M4 Media Server

- Up to 4 Media Accelerators per 1RU

Virtuoso IP Production Platform

- Redundant power supplies
- 4x Ethernet ports: 2x GbE and 2x SFP+

Virtuoso OS

- User interface accesible from any browser
- Monitoring and alarm logs
- Easy integration to NMS systems using SNMP and XML APIs
- Integrated with Nevision's VideoIPath Media Management and Orchestration System.

High Bit Rate Accelerator

- JPEG 2000 compression for HD and UHD
- Uncompressed media adaptation
- SMPTE 2022-6, TR-04 and TR-03
- Advanced Audio/Video processing

H.264/AVC Accelerator

- High quality H.264/AVC compression (10-bit 4:2:2)
- Same Accelerator for encoding or decoding

Audio Accelerator

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ASI Accelerator

- ASI adapters with configurable direction of ports

Virtuoso M4 Media Server (appliance)

Model version	VIRTUOSO-HW-1U-M4-[AC AC2 DC]-[FPD] AC AC2 DC - power supply options FPD - front panel display option
Expansion slots	Up to 4 accelerator modules per unit
ASI input/output	4 ports - configurable as input or output DVB-ASI ETSI EN 50083-9, Annex B, 188 B/pkt Female BNC connectors (75 Ohm)
Ethernet ports	2 x 100/1000Base-T, RJ-45 2 x 1000Base-X / 10GBase-R SFP+
Interface type	Gigabit Ethernet, 802.3ab (el), 802.3z (optical) Fast Ethernet (FE) IEEE 802.3u, Ethernet 802.3i
Sync input	Analog bi-level (black burst) or tri-level 1PPS (1 pulse per second) Female BNC (75 Ohm)
Alarm relay	9-pin D-SUB
Maintenance port	USB (Mini B)
LEDs	Power on (Green) Alarm status (Clear - OK, Red - critical alarm)
Front panel display	Basic setup, device status & information
Physical dimensions	1RU 19" rack-mount chassis



Virtuoso IP Production Platform

WxDxH = 420 x 400 x 44.5mm

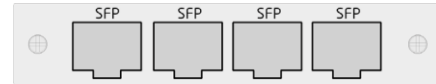
Example appliance: VIRTUOSO-HW-1U-M4-AC2

Power configuration	AC - single AC power supply AC2 - dual load-sharing AC power supplies DC - single DC power supply
Input Voltage	100-240V AC +/- 10%, 50/60 Hz or -48V DC
Power consumption	Up to 300W (maximum incl. accelerators)
Cooling	Temperature-controlled fans
Airflow	Front to rear side
Operating temperature	0°C to 50°C Storage temperature -20°C to 70°C

Virtuoso Accelerator Modules

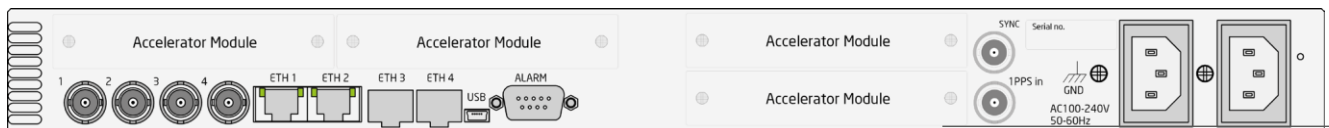
High Bit Rate Media Accelerator

Number of ports	4
Connector type	SFP+ cages
Interface type	Network 10GE (10GBase-R), 1GE (1000Base-X) Video SFPs (Non-MSA 270 Mb/s to 3 Gb/s)
Sync input format	PTP (IEEE 1588v2:2008)



H.264/AVC Accelerator

Number of ports	4xSDI/ASI inputs/outputs 1x ASI output or SYNC input
Connector type	Female BNC (75 Ohm)
Sync input format	Analog bi-level (black burst) or tri-level



Relative humidity	5% to 95% (non condensing)
Compliance	CE: 73/23/EEC (Low voltage equipment), CE: 89/336/EEC (Electromagnetic compatibility) Safety: IEC60950 and EN60950, EMC: EN55022, EN55024, EN6100-3-2 CSA: designed for CSA approval



Virtuoso OS PI

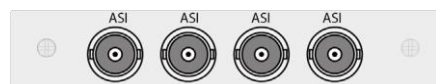
tform Manager

Features	Configuration and monitoring via dynamic rich web user interface, HTTP/XML or SNMPv2c Out-of-band or in-band remote access Built-in monitoring and alarm handling Searchable event logs with 100.000 entries Integrated with VideoPath
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Protocols	HTTP/HTTPS, FTP/FTPS, Telnet/SSH, TCP, SNMP RTP, UDP, IP, ICMP, ARP, IGMPv2/v3, Diffserv/ TOS, 802.1Q (VLAN tag), 802.1P (VLAN priority)
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ASI Adapter

Number of ports	4 - configurable as input or output
Interface Type	DVB-ASI ETSI EN 50083-9, Annex B, 188 B/pkt
Connector type	Female BNC (75 Ohm)



Nevion Virtuoso is our latest generation of Media Node platform fulfilling the highest requirements of broadcasters and service providers. Virtuoso is designed to meet the challenges of an IP-based live production environment where the distinction between facilities and contribution is blurring, and where virtualization will play an increasing role, leading to faster time-to-production and greater cost-effectiveness.

Nevion Virtuoso is a comprehensive, flexible and scalable platform for real-time adaptation, transport and processing of live media content (video, audio and data) that provides tools for broadcasters and service providers to implement and operate state of the art media production systems. IP adaption, compression, protection, monitoring and aggregation are functionalities provided by Nevion Virtuoso. As an example, the platform is ideal for processing high quality media streams in a reliable manner with very low latency over network infrastructures with very high or constrained bandwidth capacity.

