



Synamedia Content Delivery Engine 290

Synamedia® Content Delivery Engines (CDEs) are carrier-class appliances that power Synamedia's CDN software for Internet video streaming. This latest generation model offers a wide range of solid-state-drive (SSD) and hard-disk-drive (HDD) models, which are performance optimized for delivering video on demand, live streaming, and file download. Storage options include 2 SSD and 3 HDD models, giving service providers the price and performance they need.

The Synamedia CDE 290 delivers an exceptional level of scalability and reliability while giving service providers a distinct service-velocity advantage in supporting the next generation of personalized entertainment and interactive media. The Synamedia CDE 290 platform combines with the Synamedia Media Streamer software, which provides ingest, storage, caching, streaming, and other real-time, scalable, and resilient capabilities. Synamedia CDE 290s work together to form a scalable, flexible, and highly available system that allows service providers to rapidly deploy high-value distribution services for applications such as video on demand (VoD), live streaming, and time-shift TV (TSTV).

Content Delivery Engine 290 Product Overview

The Synamedia CDE 290 extends the capabilities of the Synamedia CDE portfolio in a 2RU form factor, it has two main configurations:

- CDE290-2H – 2 Rack Unit server with 24 hard-disk-drives (HDD) drives providing up to 52 TBytes Cache
- CDE290-2S – 2 Rack Unit server with 24 solid-state-drives (SSD) drives providing up to 20 TBytes Cache

The Synamedia CDE 290 includes:

- Two 2.3-GHz Intel® Xeon® Gold 5118 processors
- 192-GB double data rate fourth generation (DDR4) dual in-line memory modules (DIMMs) for improved performance and lower power consumption
- 24 small form factor (SFF) drives
- Two 480-GB 2.5-inch SATA solid-state drives (SSD) (BOOT)
- 12G SAS modular RAID (PCIe Gen 3.0) Controller provides enterprise-class data protection for up to 24 SAS disk drives or SSDs
- Four dual-port 10 Gigabit Ethernet enhanced small form-factor pluggable (SFP+) network adapter cards
- Four copper Gigabit Ethernet ports (One Intel i350 Quad Ethernet ports)
- Two integrated 10 Gigabit Ethernet (RJ45) ports (Intel x557)
- Hot-swappable redundant dual DC or AC power supply
- Flexible cache storage bundle structure, supporting storage upgrade paths and server repurposing opportunities

Table 1 lists the Synamedia CDE 290 supported models.

Table 1. Synamedia CDE 290 Models

Platform	Rack Units	Processor	Boot Drive	Memory	I/O	Model Name	Storage Capacity (GB)
Synamedia CDE 290	2 RU	2 x 2.3 GHz with 12 cores	2 x 480 GB SATA SSD	128 GB	<ul style="list-style-type: none"> • 8 SFP+ 10 Gigabit Ethernet • 4 Gigabit Ethernet management 	CDE 290-2H1	No storage drives
						CDE 290-2H26	(24 x 1.2 TB SAS HDD)
						CDE 290-2H52	(24 x 2.4 TB SAS HDD)
						CDE 290-2S10	(24 x 480 GB SATA SSD)
						CDE 290-2S20	(24 x 960 GB SATA SSD)

Synamedia CDE 290 Features and Benefits

Table 2 lists the main features and benefits of the Synamedia CDE 290.

Feature	Benefit
Industry-leading HTTP ABR stream density	With high performance of HTTP Live ABR streaming in a 2RU form factor, the Synamedia CDE 290 Internet streamer offers industry-leading video streaming for HTTP ABR formats. This translates to maximum streaming capacity that can be served by a single rack, optimizing space requirements and reducing total ownership costs.
High-performance processing	Twenty-four CPU cores promote high performance for computationally intensive tasks such as sustained live video streaming operations or extensive high concurrency of VoD requests.
High-performance content acquisition	Synamedia CDE 290 combined with the Media Streamer software application can simultaneously ingest a high number of streams, providing highly scalable content acquisition of real-time live channels for time-shift TV and live services.
High-performance throughput	CDE 290 is the leading appliance in the market that includes 8 x 10 Gigabit Ethernet SFP+, allowing outstanding streaming performance in a 2RU form factor, both for VoD and live applications. The high density of 10 Gigabit Ethernet ports powered by the Media Streamer software application provides optimal load balancing during peak hours of video consumption, so service providers can deliver the highest quality of experience (QoE) to their subscribers.
Flash memory SSD technology and hard-disk drive (HDD)	Flash memory SSD technology complements with HDD options for high-availability VoD streaming. The technology is used for video cache and transaction logging to lower operating costs and lay the foundation for even better performance and scale. Synamedia optimized the CDE 290 to provide outstanding performance for VoD content delivery.
SATA SSD boot drive	Two 480-GB boot drives, help ensure reliable bootup operations with dedicated capacity for day-to-day system operation.
Synamedia 12-Gbps SAS modular RAID controller	12Gbps Modular RAID PCIe Gen 3.0 controller provides enterprise-class data protection for up to 24 SAS SSDs. It includes a configurable DDR3 cache memory with 2-GB flash-backed write cache (FBWC).
Dual-port management access	Quad dedicated 1 Gigabit Ethernet management ports are available, in addition to 10G ingest and streaming ports, to simplify connectivity and manageability.
Security features	A locking bezel can be mounted to the front of the chassis to prevent unauthorized access to the drives.
Multifunction capabilities	Synamedia CDE 290 models are built on a selected base system with minor differences among the available configurations, simplifying personnel training and equipment-sparing strategies.
Flexibility	Synamedia CDE 290 offers a flexible cache storage bundle structure, supporting storage upgrade paths and server repurposing opportunities.

Synamedia CDE 290 Specifications

The Synamedia CDE 290 is a versatile platform that is available in the following models, each optimized for particular content delivery applications:

- **Model CDE 290-2H1:** Cost-optimized HDD streamer for Live streaming
- **Model CDE 290-2H26:** Dense HDD streamer for small/medium VOD libraries and Live streaming
- **Model CDE 290-2H52:** Very Dense HDD streamer for medium/large VOD libraries and Live streaming
- **Model CDE 290-2S10:** Dense SSD streamer for high performance/availability ABR VOD and Live
- **Model CDE 290-2S20:** Very Dense SSD streamer for high performance/availability ABR VOD and Live

All configurations are available with AC or DC redundant power supplies. All servers support eight 10-Gigabit Ethernet ports with SFP+ media modules. See Table 3 for specifications.

Table 3. Technical Specifications for the Synamedia CDE 290

Description	Synamedia CDE 290
Rack units	2
Storage	Flash memory SSD technology and HDD: <ul style="list-style-type: none"> • 24 x 1.2 TB SAS HDD • 24 x 2.4 TB SAS HDD • 24 x 480 GB SATA SSD • 24 x 960 GB SATA SSD Refer to the model-specific details in Table 1
Memory	192-GB DDR4 SDRAM
Processors	Two Intel Xeon processor 2.3 GHz Gold 5118 with a total of 24 cores
RAID controller	12Gbps Modular RAID (PCIe Gen 3.0) Controller provides enterprise-class data protection for up to 24 SAS HDD or SSDs
Network interfaces	Eight 10 Gigabit Ethernet of SFP media module SFP+ options: <ul style="list-style-type: none"> • Short-reach (SR) fiber optic - 850 nm • Long-reach (LR) fiber optic - 1310 nm • CX-1 Twinax copper - 1, 3, and 5m
Management interfaces	Four onboard copper Gigabit Ethernet ports - 10/100/1000 Mbps
Additional rear connectors	Additional interfaces including a video graphics array (VGA) port (DB-15 connector), an RJ45 serial port, 1 Gigabit Ethernet host management port, IPMI 2.0 port, grounding-lug holes (for DC power supply), Two integrated 10 Gigabit Ethernet (RJ45) ports (Intel x557), 4 USB 3.0 ports,
Rail kit options	Ball bearing rail kit with optional reversible cable management arm
Power supplies	Hot-plug, redundant 930W -48 DC or 1200W AC power supplies
Operating humidity (RH)	8 to 90% (noncondensing)
Non-operating humidity (RH)	5 to 95 (noncondensing)
Operating temperature	50 to 95° F (10 to 35° C)

Non-operating temperature (When the server is in storage or is being transported)	-40 to 140°F (-40 to 05°C)
Operating altitude	0 to 3,000m (0 to 10,000 ft.)
Dimensions (H x W x D) * Including slam latches	17.2 x 3.5 * 24.8 in. (437 mm x 89 mm x 630 mm) 3.43 x 18.96 x 30.18 in. (8.70 x 48.2 x 76.6 cm) – width and depth Including handles.
Clearance: Front, side, rear	3 in, 1 in, and 6 in
Weight (fully configured)	61 lb. (27.7 kg) – for 290-S configuration
Regulatory compliance	Product should comply with CE Markings per directives 2004/108/EC and 2006/95/EC
Safety	UL 60950-1 Second Edition CAN/CSA-C22.2 No. 60950-1 Second Edition EN 60950-1 Second Edition IEC 60950-1 Second Edition AS/NZS 60950-1 GB4943 2001
EMC - Emissions	47CFR Part 15 (CFR 47) Class A AS/NZS CISPR22 Class A CISPR22 Class AEN55022 Class AICES003 Class A VCCI Class A EN61000-3-2 EN61000-3-3 KN22 Class A CNS13438 Class A
EMC – Immunity	EN55024 CISPR24 EN300386 KN24

Ordering Information

Tables 4 and 5 list the Synamedia CDE 290 products and part numbers required for placing an order. Examples of product orders:

- **Example 1:** Product CDE 290-2S10 equals CDE290, plus V2P-PSU2V2-1200W, plus SB-CDE290-2S10, plus L-OMD-CACHEC10G-P software application, plus SFP, plus accessories
- **Example 2:** Product CDE 290-2H52 equals CDE290, plus V2P-PSU2V2-930DC, plus SB-CDE290-2H52, plus L-OMD-CACHEC10G-P software application, plus SFP, plus accessories

To place an order, visit the [Synamedia Ordering Home Page](#) and refer to Tables 4 and 5.

Table 4. Ordering Information

Product	Model Number	Part Number	Product Description
CDE 290-S/L	(2RU Base System)	CDE290	CDE290, 2RU Content Delivery Engine, SFF
	CDE 290-2S10	SB-CDE290-2S10	24 x 480 GB 2.5" Ent Value SATA SSD
	CDE 290-2S20	SB-CDE290-2S20	24 x 960 GB 2.5" Ent Value SATA SSD
	CDE 290-2H26	SB-CDE290-2H26	24 x 1.2 TB 12G SAS 10K RPM SFF HDD
	CDE 290-2H52	SB-CDE290-2H52	24 x 2.4 TB 12G SAS 10K RPM SFF HDD
	L-OMD-CACHEC10G-P	L-OMD-CACHEC10G-P	LIC, 10G Edge or Mid-Tier Cache, Perpetual Open Media Distribution Cache with 10G Interfaces, Activation, Perpetual
	L-OMD-CAP1GBPS-P	L-OMD-CAP1GBPS-P	SW LIC, 1 Gbps Peak Delivery Capacity, Perpetual
	CDE290 PS AC	V2P-PSU2V2-1200W	1200W V2 AC Power Supply for 2U C-Series Servers
	CDE290 PS DC	V2P-PSU2V2-930WDC	930W V2 DC Power Supply for 2U C-Series Servers

Table 5. Hardware Options: Synamedia CDE 290

Product	Part Number	Product Description
10-GE SFP+ modules	VN-SFP-1WSR	SFP+, 10-GE SR Optical Module, 850 nm (fiber)
	VN-SFP-1WLR	SFP+, 10-GE LR Optical Module, 1310 nm (fiber)
	VN-SFP-1WCX	SFP+, 10-GE, Passive Twinax Cable Harness, 1 m length (copper)
	VN-SFP-3WCX	SFP+, 10-GE, Passive Twinax Cable Harness, 3 m length (copper)
	VN-SFP-5WCX	SFP+, 10-GE, Passive Twinax Cable Harness, 5 m length (copper)

Services

Synamedia offers a wide range of service programs to accelerate customer success. These innovative service programs are delivered through a unique combination of people, processes, tools, and partners, promoting high levels of customer satisfaction. Synamedia Services help you protect your network investment, optimize network operations, and prepare your network for new applications to extend network intelligence and the power of your business. For more information about Synamedia Services, refer to www.synamedia.com

For More Information


For more information about the Synamedia Media Streamer software or Synamedia Content Delivery Engines, visit <https://www.synamedia.com/video-solutions/video-processing/>

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