

CORNELIS™ CN5000 OMNI-PATH™ PRODUCT FAMILY

Introducing the Cornelis™ CN5000 Omni-Path™ High-Performance Interconnect Solution.

Today's rapidly evolving Artificial Intelligence (AI) and High Performance Computing (HPC) workloads are placing ever-increasing demands on the networking infrastructure that supports them. Cornelis CN5000 networking solutions deliver the performance, scalability, and agility you require to unlock insight, speed time to results, and get the most return out of your computing investment.

Performance Unleashed

Experience unprecedented performance at the scale that your applications demand. Cornelis CN5000 provides targeted generational improvements in latency, message rates, and bandwidth to improve the performance of AI and HPC workloads in today's challenging and complex environments.

Scale Capacity, Enhance Performance

As the adoption of AI increases, the ability to scale the environments that run these applications becomes a critical factor to success. Cornelis CN5000 not only enables unprecedented scalability but also delivers sustainable high-performance at scale. Implementing and scaling your AI and HPC workloads has never been easier.

Seamless Interoperability, Extreme Ease of Use

Cornelis Networks understands that the most performant AI and HPC platforms are built upon a broad ecosystem of technologies and believes that your networking

platform should seamlessly integrate with and enhance that ecosystem.

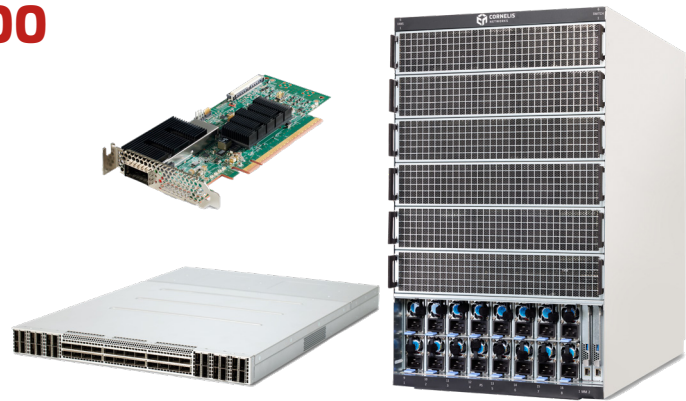
The Cornelis CN5000 product family boasts an industry first, open software stack built to be fully interoperable with your existing environment while providing superior performance, extreme ease of use, and simple migration to future generations of Omni-Path technology.

Resilient, Dynamic, Adaptive

In performance-intensive computing, predictable high performance is paramount. The Cornelis CN5000 products deliver predictable high performance at scale with innovative error correction, powerful fine-grained adaptive routing, and dynamic placement of network functions throughout the full compute/network complex for maximum efficiency.

Telemetry for Precision Control

Harness the power of real-time information. Cornelis CN5000 employs advanced telemetry engines that provide optimal network traffic control, ensuring every component operates at its peak.



"CIQ has shown that workloads run more efficiently with CIQ platforms on Cornelis Networks Omni-Path 100. With the new release of Cornelis CN5000 coming up, we're excited to continue our partnership, as CIQ and Cornelis Networks together provide a powerful solution for AI and HPC for our mutual customers."

Arthur Tyde, Senior VP of Business
CIQ

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The Cornelis CN5000 product family proudly includes the Host Fabric Interface, Edge Switch, and Director Class Switch options to offer you a greater breadth of architectural choices for your networking environment.

In every aspect, the Cornelis CN5000 Omni-Path Product Family redefines networking, embracing a promise of excellence, adaptability, and relentless pursuit of technological advancement. Elevate your networking experience with Cornelis Networks and get ready to unleash the full potential of your cluster.

HIGHLIGHTS

Benefits

- Performance advantages increase as your cluster size grows.
- Industry leading price-performance.
- Choice of interoperability and ease of use.
- Custom scalability, allowing unique advantages as your needs change.
- Advanced telemetry engines deliver real-time information for optimal network traffic control.

Key Features

High Bandwidth, Low Diameter Topologies

- Optimal radix switch ASIC enables scalable direct and indirect topologies.
- Comprehensive network telemetry gathering enables robust routing algorithms supporting advanced topologies.
- Congestion avoided via fine-grained dynamic adaptive routing and state-of-the-art congestion control.

Performance

- 400 Gbps in standard format
- PCIe Gen 5
- >65 billion packets per second
- Latency as low as <1µs

Cornelis CN5000 Omni-Path Host Fabric Interface Specifications

Bandwidth	400 Gbps
Fabric Ports	One or two 400G ports
Card Adapter Form Factors	Low profile PCIe
Power Consumption (Typical):	
Single port	15W (w/o optics)
Dual Port	19W (w/o optics)
Cooling Options	Air, indirect liquid cooling with heat pipe from ASIC to a server cold plate

Cornelis CN5000 Omni-Path Director Class Switch Specifications

Bandwidth	400 Gbps 576p
Fabric Ports	576 QSFP-112
Form Factor	17U, 19' rack mount chassis
Topology	2-tier Fat Tree internal interconnect
Power (Typical)	20kW (including optics)
Cooling Options	Air, Liquid

Cornelis CN5000 Omni-Path Edge Switch Specifications

Bandwidth	400 Gbps 48p
Fabric Ports	48x 400G ports
Form Factor	1U, 19" rack mount
Power (Typical)	710W (w/o optics), 1100W with 48 x 7.5W AOCs
Cooling Options	Air, Hybrid (air/liquid), Liquid

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Safety

US/Canada	TUV NRTL 62368-1, CSA 22.2.No. 62368-1
Europe	TUV EN62368-1
International	CB Scheme: IEC 62368-1

Emissions/Immunity

US/Canada	FCC Part 15, Subpart B, Class A, CAN ICES-3(A)/NMB-3(A) Issue 7
Europe	EN55032 (CISPR32), EN55035, EN61000-3-2, EN61000-3-3
Japan	VCCI, Class A
AS/NZ	AS/NZ CISPR 32, Class A
Korea	Emissions: KS C 9832, Class A Immunity: KS C 9835
Taiwan	BSMI (CNS 15936:2016), Class A, CNS 15663

Environmental

RoHS	RoHS II Directive 2011/65/EU2, RoHS Directive 2015/863
REACH	(EC) No 1907/2006

Operating Conditions

Cornelis CN5000 Host Fabric Interface

Temperature	Operating: 0° to 55° C (derated 1C/175m above 900m) Storage: -40° to 70° C
Humidity	Operating: 10% to 85% non-condensing Storage: 5% to 95% non-condensing
Altitude	Operating: 0 – 3,200m Storage: 0 – 10,000m

Cornelis CN5000 Director Class Switch

Temperature	Operating: 5° to 40° C, supporting AOC up to 2W (Temperature de-rating 5° C/W up to 3W AOC) Storage: -40° to 70° C
Humidity	Operating: 10% to 85% non-condensing Storage: 5% to 95% non-condensing
Altitude	Operating: 0 – 3,200m Storage: 0 – 10,000m

Cornelis CN5000 Edge Switch

Temperature	Operating: 5° to 40° C (ambient temperature derated 1° C/175ft above 900m for air cooled models) Storage: -40° to 70° C
Humidity	Operating: 5% to 85% non-condensing Storage: 5% to 95% non-condensing
Altitude	Operating: 0 – 3,200m

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