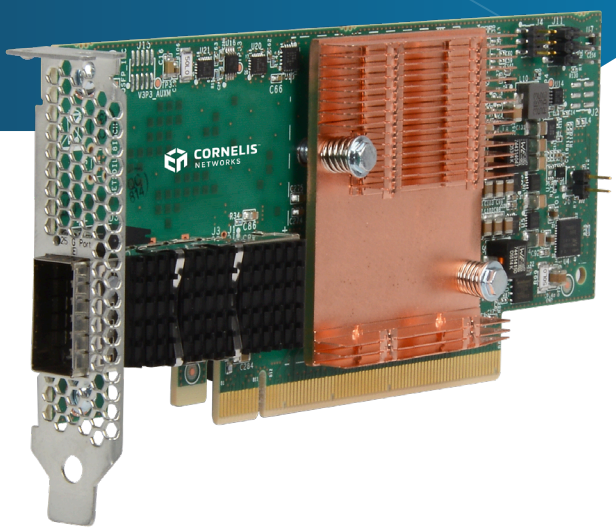
PRODUCT BRIEF

Purpose-built 100 Gbps adapter optimized for highest AI/HPDA/HPC performance with the industry's best price-performance

CORNELIS™ NETWORKS

CORNELIS™ OMNI-PATH EXPRESS™ ACCELERATED HOST FABRIC ADAPTER

CN-100HFA



Cornelis Networks provides the industry's leading accelerated host fabric adapters.

Omni-Path Express adapters cost-effectively deliver high bandwidth and use advanced technologies to meet the key challenges to application performance, maximizing cluster scalability and message rate while minimizing average and tail latency.

Cornelis Omni-Path Express scale-out interconnect

Unprecedented demands on the scale-out interconnect are being driven by advances in artificial intelligence, high performance data analytics, and traditional modeling and simulation environments, coupled with extremely capable processing and storage infrastructures.

Cornelis Omni-Path Express is the next generation of high performance fabrics, a proven hardware foundation combined with the OpenFabrics Interfaces (OFI) framework, that delivers the industry's lowest latency, highest message rate, and best collectives performance, all at the industry's lowest CPU utilization.

Accelerated application performance at scale

Cornelis Omni-Path Express Accelerated Host Fabric Adapters provide a perfect semantic match between the requirements of real-world applications and the scale-out fabric, maximizing scalability and performance at the industry's lowest price point.

These adapters ensure optimal application performance by delivering key features for efficiency, including dispersive routing and congestion control. These features are complemented by a unique sub-link layer architecture that enables Packet Integrity Protection (zero latency protection against bit transmission errors).

These features, together with advanced Virtual Fabrics support, provide the unique interconnect capabilities to deliver industry-leading application performance and manageability at scale.

"The convergence of machine learning and AI techniques with traditional simulation capabilities has become increasingly important, which also means striking a balance between increased computational throughput for capacity computing and capability computing resources."

Dr. Thomas Steinke
Head of Supercomputing Department
Zuse Institute Berlin

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HIGHLIGHTS

Benefits

- Accelerated application performance at scale
- Industry leading best price-performance
- Advanced sub-link layer capability eliminating link protection and tail latency penalties

Key Features

Performance
- 100 Gbps in standard format
- PCIe x16 host interface
- Over 160M MPI msg/sec
- Sub-microsecond MPI latency

Advanced features
- Dispersive Routing
- Packet Integrity Protection
- Congestion Control
- Virtual Fabrics Support

Highly optimized design
- Lowest end-to-end latency at scale
- Best collectives performance
- Balanced functionality between CPU and network with low CPU utilization
- OpenFabrics Alliance (OFA) OpenFabrics Interfaces (OFI) supported

Specifications	
Adapter Bandwidth	25 GB/s (100 Gbps per direction)
Form Factor	Low Profile
I/O Connector	QSFP28
Power W (Typ/Max) – Without optical transceiver/AOC – With power class 2 optical transceiver/AOC	 7.4/11.7 9.2/13.8

Item Market Name	Item Number	Item Description
100HFA016LS	948159	Cornelis Omni-Path Host Fabric Interface Adapter 1 Port PCIe x16 Low Profile
100HFA016FS	945671	Cornelis Omni-Path Host Fabric Interface Adapter 1 Port PCIe x16 Standard

Alternate PCI bracket provided with each SKU (Standard height or Low-profile)

Safety

US/Canada	cTUVus NRTL 62368-1
Europe	TUV SUD EN 62368-1
International	CB Scheme: IEC 60950/62368-1

Operating Conditions

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

Emissions/Immunity

US/Canada	FCC Part 15, Subpart B, Class A, ICES-3(A)/NMB-3(A)
Europe	EN55032 Class A, EN55035, EN55024
Japan	VCCI, Class A
AS/NZ	AS/NZ CISPR 32, Class A
Korea	RRA/KC (KN32, KN35), Class A
Taiwan	BSMI (CNS 13438 Class A, CNS 15663)

Environmental

RoHS	RoHS II Directive 2011/65/EU
REACH	(EC) No 1907/2006

Discover the future of high performance fabrics
www.cornelisnetworks.com

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