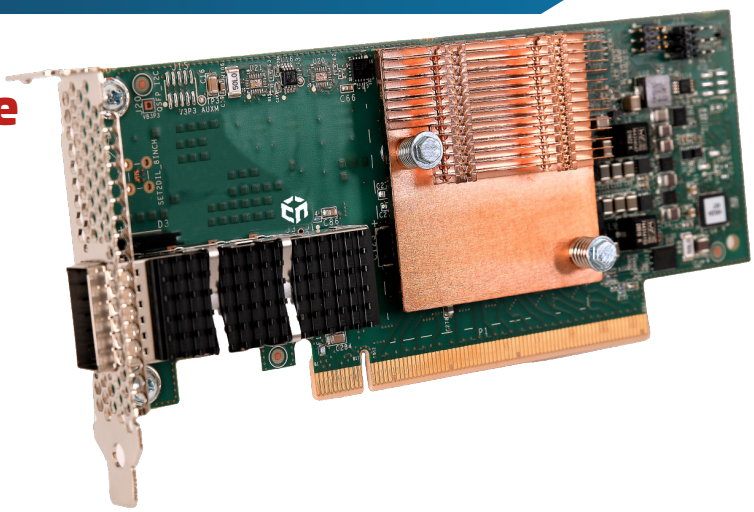
PRODUCT BRIEF

Purpose-built 100 Gbps adapter optimized for highest AI/HPDA/HPC performance with industry leading price-performance

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, based on a proven hardware foundation combined with the OpenFabrics Interfaces (OFI) software 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.

> **"Our long-standing partnership with Cornelis executives has allowed us to co-design and deploy systems optimized for the networking and I/O requirements of high performance computing, data analytic, and machine learning workflows."**
>
> **Bronis de Supinski**
> CTO of Livermore Computing
> Lawrence Livermore National Laboratory

CORNELIS™ OMNI-PATH EXPRESS™ ACCELERATED HOST FABRIC ADAPTER
CN-100HFA

HIGHLIGHTS

Benefits

- Accelerated application performance at scale
- Industry leading 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)
Adapter Form Factor	Low Profile
I/O Connector	QSFP28
Voltage	12V, 3.3V, 3.3VAUX
Power W (Typ/Max) – Without optical transceiver/AOC – With power class 2 optical transceiver/AOC	 7.4/11.7 9.5/13.8

Item Market Name	Item Number	Item Description
100HFA016LSN	980005	Cornelis Omni-Path Host Fabric Interface Adapter 1 Port PCIe x16 Low Profile

Standard height PCI bracket included in box.

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

CORNELIS™ NETWORKS

PRODUCT BRIEF

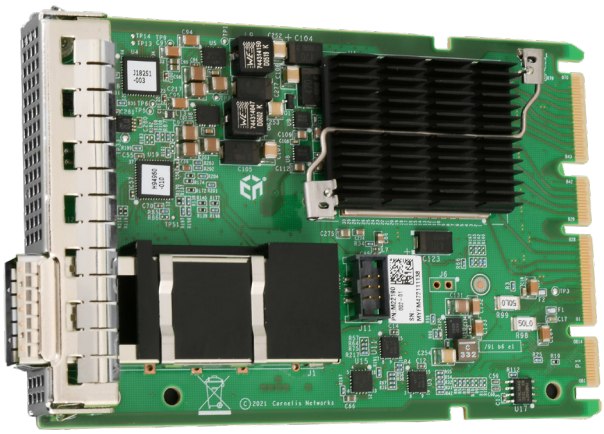
Purpose-built 100 Gbps OCP adapter optimized for highest AI/HPDA/ HPC performance with industry leading price-performance

CORNELIS™ NETWORKS

CORNELIS™ OMNI-PATH EXPRESS™ ACCELERATED OPEN COMPUTE PROJECT HOST FABRIC ADAPTER

CN-100HFP

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



Omni-Path Express Open Compute Project (OCP) 3.0 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, based on a proven hardware foundation combined with the OpenFabrics Interfaces (OFI) software 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 OCP 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.

The Omni-Path Express OCP Host Fabric 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.

"Our long-standing partnership with Cornelis executives has allowed us to co-design and deploy systems optimized for the networking and I/O requirements of high performance computing, data analytic, and machine learning workflows."

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CORNELIS™ OMNI-PATH EXPRESS™ ACCELERATED OPEN COMPUTE PROJECT HOST FABRIC ADAPTER

CN-100HFP

HIGHLIGHTS

Benefits

- Compliant with OCP 3.0 adapter specifications
- Accelerated application performance at scale
- Industry leading 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	OCP 3.0, Small Form Factor (SFF)
I/O Connector	QSFP28
Power W (Typ/Max) – Without optical transceiver/AOC – Supports up to power class 2 optical transceiver/AOC	 7.4/11.7 9.2/13.8

Item Name	Item Number	Item Description
100HFP016KS	99AJ0P	Cornelis Omni-Path Host Fabric Interface Adapter 100 Series 1 Port PCIe x16 OCP 3.0 SFF Internal Lock

Safety

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

Operating Conditions

Temperature Storage: -40° to 70° C
OCP 3.0 Tier Ratings
Copper Cables
Hot Aisle 3 | Cold Aisle 2
Active Optical Cables
Hot Aisle 6 | Cold Aisle 2
Humidity Storage: 5% to 95% non-condensing
Altitude 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

Environmental

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

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