

PRODUCT BRIEF

288-Port (6-Slot) and 1152-Port (24-Slot)
Non-Blocking 100 Gb/s Switches



CORNELIS™ OMNI-PATH EXPRESS™ DIRECTOR CLASS SWITCH

CN-100SWD

Cornelis Networks provides the industry's leading director class switch family.

Omni-Path Express switching systems 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 requirements 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 collective performance, all at the industry's lowest CPU utilization.

Accelerated application performance at scale

Cornelis Omni-Path Express Director Class Switches deliver full bisectional bandwidth per port, providing up to 288 100 Gbps ports in 7U and up to 1152 ports in 20U.

Cornelis Omni-Path Express Director Class Switches are ideal for interconnecting mid-sized clusters and for providing the core of large clusters.

The systems ensure optimal application performance by delivering key features for efficiency, including dynamic adaptive 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) and Traffic Flow Optimization (pausing the transmission of a lower priority packet in favor of a higher priority packet).

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

“We are not looking for theoretical peak performance—we demand real system performance. That meant that our selection of the right processor and the right interconnect are all crucial for the overall performance.”

Dr. Thomas Steinke
Head of Supercomputing Department
Zuse Institute Berlin

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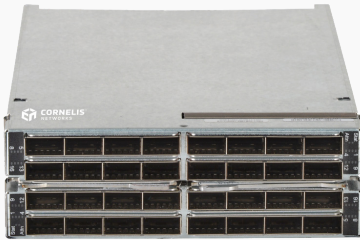
CN-100SWD

HIGHLIGHTS

Benefits

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

Director Class Switch – Leaf Module



Director Class Switch – Spine Module



Key Features

Performance

- 288 x 100 Gbps ports (57.6 Tbps) in 7U
- 1152 x 100 Gbps ports (230.4 Tbps) in 20U
- Sub-340 ns post-protection switch latency

Highly optimized design

- Redundant power and fans
- Redundant management

Advanced features

- Dynamic Adaptive Routing
- Packet Integrity Protection
- Traffic Flow Optimization
- Dynamic Lane Scaling
- Congestion Control
- Virtual Fabrics

Feature	100SWD24	100SWD06
100 Gb ports (max)	1152	288
Total System Bandwidth (bisectional)	28.8 TB/s	7.2 TB/s
Chassis Height	20U (+1U support shelf)	7U (+0U support shelf)
Dimensions (mm)	447 x 889 x 749	447 x 310 x 749
Weight (fully configured)	6370 lb / 288.9 kg	209.1 lb / 94.9 kg
Leaf Modules (max)	24	6
Spine Modules (max)	12 (48-port Leaf) 8 (32-port Leaf)	3 (48-port Leaf) 2 (32-port Leaf)
Fan Modules	9	3
Management Modules (standard/redundant)	1/2	1/2
Power Supplies (min/DC/AC redundancy)	6/7/12	2/3/4
Power (kW, typical, fully loaded, power class 2 AOC)	8.5	2.2
Power (kW, max, fully loaded, power class 2 AOC)	12.7	3.3
Cables	QSFP28 - QSFP28 used with 32-port Leaf QSFP-DD - 2x QSFP28 used with 48-port Leaf	

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CN-100SWD

Item Name	Item Number	Item Description
100SWD24B1N	945677	Omni-Path Express Director Class Switch 100 Series 24 Slot Base Configuration
100SWD06B1N	945676	Omni-Path Express Director Class Switch 100 Series 6 Slot Base Configuration
100SWDLF32Q	945777	Omni-Path Express Director Class Leaf Switch Blade 32 Port QSFP28
100SWDLF48D	961904	Omni-Path Express Director Class Leaf Switch Blade 48 Port QSFP-DD
100SWDSPINE	945778	Omni-Path Express Director Class Spine Switch Module
100SWDMGTSH	945776	Omni-Path Express Director Class Switch Management Module
100SWDFAN01	945779	Omni-Path Express Director Class Switch Fan Module
100SWDPS001	945780	Omni-Path Express Director Class Switch Power Supply

Safety

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

Operating Conditions

Temperature	Operating: 5° to 40° 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

Environmental

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

Discover the future of high performance fabrics

For more information, visit www.cornelisnetworks.com

