

**PRODUCT BRIEF**

288-Port (6-Slot) and 1152-Port (24-Slot)  
Non-Blocking 100 Gbps Switches



# CORNELIS™ OMNI-PATH EXPRESS™ DIRECTOR CLASS SWITCH

## CN-100SWD

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

Omni-Path Express Director Class Switches 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) 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 Director Class Switches deliver full bidirectional 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 Omni-Path Express Director Class Switches 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

# CORNELIS™ OMNI-PATH EXPRESS™ DIRECTOR CLASS SWITCH

## 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 Gbps ports (max)	1152	288
Total System Bandwidth (bidirectional)	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	

# CORNELIS™ OMNI-PATH EXPRESS™ DIRECTOR CLASS SWITCH

## CN-100SWD

Item Name	Item Number	Item Description
100SWD06B1N	945676	Cornelis Omni-Path Director Class Switch 100 series 6 Slot Base 1MM
100SWD24B1N	945677	Cornelis Omni-Path Director Class Switch 100 series 24 Slot Base 1MM
100SWDLF32Q	945777	Cornelis Omni-Path Director Switch Leaf Module 100 Series 32 port
100SWDLF48D	961904	Cornelis Omni-Path Director Switch Leaf Module 100 Series 48 port
100SWDSPINE	945778	Cornelis Omni-Path Director Switch Spine Module 100 Series
100SWDMGTSH	945776	Cornelis Omni-Path Director Switch Management Module 100 Series
100SWDFAN01	945779	Cornelis Omni-Path Director Switch Fan Module 100 Series
100SWDPS001	945780	Cornelis Omni-Path Director Switch Power Supply Module 100 Series

## Safety

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

## Operating Conditions

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

## Emissions/Immunity

<b>US/Canada</b>	FCC Part 15, Subpart B, Class A, ICES-3(A)/NMB-3(A)
<b>Europe</b>	EN55032 Class A, EN55035, EN55024
<b>Japan</b>	VCCI, Class A
<b>AS/NZ</b>	AS/NZ CISPR 32, Class A
<b>Korea</b>	RRA/KC (KN32, KN35), Class A
<b>Taiwan</b>	BSMI (CNS 13438 Class A, CNS 14-336, CNS 15663)

## Environmental

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

**Discover the future of high performance fabrics**

For more information, visit [www.cornelisnetworks.com](http://www.cornelisnetworks.com)

