

# PRODUCT BRIEF

48-Port Non-Blocking 100 Gb/s  
Managed or Externally Managed Switch



# CORNELIS™ OMNI-PATH™ EDGE SWITCH CN-100SWE

## HIGHLIGHTS

### Benefits

- Industry leading switch platform in price/performance and power consumption
- Incorporates advanced sub-link layer capability eliminating link protection and tail latency penalties

### Key Features

- Performance
  - 48 x 100 Gbps ports in 1U
  - 9.6 Tb/s aggregate switch throughput
  - Sub-110 ns post-protection switch latency
- Highly optimized design
  - Redundant power and fans
  - Reversible air flow
  - Optional internal management
- Advanced features
  - Dynamic Adaptive Routing
  - Packet Integrity Protection
  - Traffic Flow Optimization
  - Dynamic Lane Scaling
  - Congestion Control
  - Virtual Fabrics



Cornelis Networks provides the industry's leading edge switch, cost-effectively delivering high bandwidth while incorporating advanced technologies focused on maximizing message rate while minimizing average and tail latency critical to application performance in High Performance Computing (HPC) environments.

## CORNELIS OMNI-PATH SCALE-OUT INTERCONNECT

Advances in artificial intelligence, high performance data analytics, and traditional modeling and simulation environments, coupled with extremely capable processing and storage infrastructures, are driving unprecedented requirements on the scale-out interconnect. Cornelis Omni-Path interconnect is positioned to cost-effectively meet these key challenges.

## ACCELERATE APPLICATION PERFORMANCE

Cornelis Omni-Path Edge Switches provide forty-eight 100 Gbps ports, delivering full bidirectional bandwidth per port. These switching systems are ideal for interconnecting small clusters or for providing the first switching tier in large clusters while minimizing network diameter for lowest latency.

These systems ensure optimal application performance through delivery of key efficiency features, including dynamic adaptive routing and congestion control, and 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 lower priority packet in favor of a higher priority packet).

These capabilities, in conjunction with advanced Virtual Fabrics support, provide differentiated interconnect capabilities that deliver industry-leading application performance and manageability at scale.

\*Other names and brands may be claimed as the property of others.

All information provided here is subject to change without notice. Contact your Cornelis Networks representative to obtain the latest Cornelis Networks product specifications and roadmaps.

The products described may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request.

Cornelis Networks technologies' features and benefits depend on system configuration and may require enabled hardware, software or service activation.

Copyright © 2021, Cornelis Networks. All rights reserved.

Revision 3.0 05/04/2021

## Switch Features

- Based on Omni-Path Switch Silicon 100 Series 48-Port ASIC
- 100 Gbps bidirectional bandwidth per port
- Virtual lanes: Configurable from one to eight VLs plus one management VL
- Configurable MTU size of 2 KB, 4 KB, 8 KB, or 10 KB
- Maximum multicast table size: 8192 entries
- Maximum unicast table size: 49151 entries
- Supports QSFP28 Quad Small Form Factor Pluggable cabling
- Supports passive copper or active optical cables

## Management Features

- Optional internal management capability
- Built-in Fabric Manager
- Subnet Management Agent (SMA)
- Performance Management Agent (PMA)
- Command Line Interface and Chassis Management GUI through 10/100/1000 Base-T Ethernet
- Serial Console through USB Serial Port
- Supports Embedded Subnet Manager (ESM) and Performance Manager (PM)
- Enables Network Time Protocol (NTP), SNMP/MIBs, and LDAP
- FastFabric Toolset and Fabric Management GUI

## Specifications

100 Gb ports	48
Total System Bandwidth (bi-directional)	9.6 Tbps (1.2 TB/s)
Chassis Dimensions (w x h x d)	19" rack mountable, 1U chassis (441 mm x 43.7 mm x 438 mm)
Weight	7.0 kg
Reversible Fan Modules	1
Mgmt. Modules (optional)	1
Power Supplies (Fixed) Min / Redundant	1/2
Power (Typ/Max)	189/238 W (Using direct attach copper cables) 285/330 W (Using 2W QSFP active optical cables)
Input Range	100-240 VAC 50-60 HZ

Item Market Name	Item Number	Item Description
100SWE48QF2	948588	Omni-Path Edge Switch 100 Series 48 Port Managed Forward 2 PSU
100SWE48UF2	948678	Omni-Path Edge Switch 100 Series 48 Port Forward 2 PSU
100SWEIKIT1	945820	Omni-Path Edge Switch Installation Kit 100 Series

## Safety

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

## Emissions/Immunity

- US/Canada** FCC Part 15, Subpart B, Class A, ICES-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

## Operating Conditions

- Temperature** Operating: 0° 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

## Environmental

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