

## H A R D W A R E

## INFINERA CLOUD XPRESS

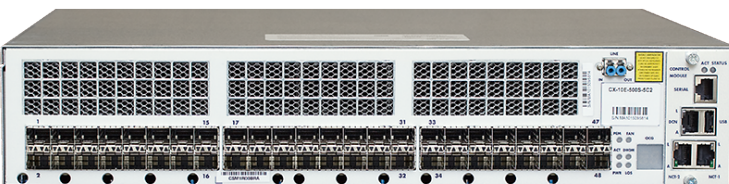
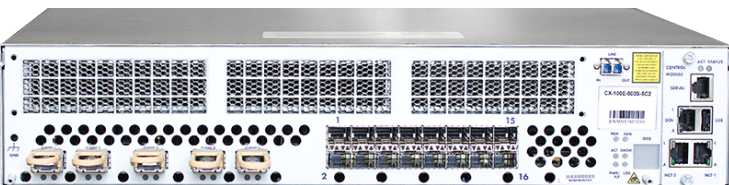
500 Gb/s super-channel data center interconnect platforms with hyperscalability, extreme simplicity, power and space efficiency and built-in data encryption support

The Infinera Cloud Xpress Family is purpose-built for high-capacity metro cloud data center interconnect (DCI). The Cloud Xpress is designed for point-to-point hyperscalable bandwidth interconnectivity across regional, metro, and campus environments with simplic-

ity, efficiency and security. The Cloud Xpress Family, including the 500 gigabit per second (Gb/s) super-channel Cloud Xpress and the terabit super-channel Cloud Xpress 2, delivers unmatched choice and flexibility for metro cloud DCI.

**Scalable:** The Cloud Xpress incorporates Infinera's ultra-reliable optical engine based on the photonic integrated circuit (PIC) and delivers a 500 Gb/s dense wavelength-division multiplexing (DWDM) super-channel in only 2 rack units (2RU). Data center operators can start by using a fraction of the platform's capacity and scale up as needed with Infinera's unique Instant Bandwidth capability, which allows point-and-click activation of capacity without requiring any new hardware truck rolls, installation or configuration. Multiple Cloud Xpress units can be racked, stacked and managed as a single unit in order to scale capacity up to multiple terabits per second (Tb/s) per fiber pair.

**Simple:** With a simple operational model and extensive automation support, the Cloud Xpress is designed for easy deployment and operational efficiency. The rack-and-stack appliance form factor and easy 1-2-3 configuration make deployment simple. The Cloud Xpress also supports data center automation with capabilities such as topology auto-discovery, zero-touch provisioning support, and standard application programming interfaces (APIs) for programmability and streaming telemetry. Built-in amplification enabling reach of up to 150 kilometers (km) without external amplifiers eliminates the need for amplifiers on most metro DCI links, and 500 Gb/s super-channel output reduces or eliminates the need for multiplexers and fiber connections, both of which help to minimize DCI solution complexity and to maximize reliability. Reliability is further bolstered by PIC



technology and an architecture that combines redundant power supplies and fans with a hot swappable control module to support hitless software upgrades.

**Efficient:** The Cloud Xpress is designed for operational efficiency. The compact, high-density design and high power efficiency enable deployment in data center locations with limited available rack space and help to control space and power costs. Support for simple opera-

tions and automation allows operators to maximize the efficiency of operations staff and lower the total cost of operation.

**Secure:** Select Cloud Xpress models support built-in data encryption that can be enabled with product-specific license keys. Data encryption can be enabled based on the IEEE Media Access Control Security (MACsec) protocol employing state-of-the-art, NIST-compliant AES-256 encryption technologies.

Features	
Type	Value
Client Interface	10 GbE, 40 GbE, 100 GbE
Maximum Client-side Capacity	500 Gb/s
Line Interface	500 Gb/s super-channel via LC connector
Line-side Capacity	Configurable in 100 Gb/s increments via Instant Bandwidth Maximum 500 Gb/s
Maximum Capacity per Fiber	8.0 Tb/s 9.5 Tb/s via flexible grid for CX-500F
Reach Specifications	Metro, regional up to 600 km Unamplified reach up to 150 km
Redundancy	Power supply AC or DC, 1:1 redundant Fans, 1:3 redundant Control module: hot swappable Compatible with optional fiber protection switch, Y-cable
Management and Automation	Command-line interface (CLI) SNMP, Syslog, RADIUS, TACACS+ NETCONF/YANG, gRPC, telemetry Zero-touch provisioning (ZTP), DHCP LLDP snooping Stackability, nodal management Infinera Digital Network Administrator (DNA)
Data Encryption Supported (select models)	MACsec (IEEE 802.1AEbw-2013) Advanced encryption AES-256 Galois Counter Mode (GCM) Internet Key Exchange IKEv2 (RFC 7296/4307) X.509v3 certificate for peer authentication Elliptic Curve Diffie-Hellman (ECDH Group 21) secured key negotiation Hitless AES-256 key rotation

Models			
Short Name	Model Number	Client Interfaces*	Encryption
CX-10	CX-10E-500S	48 x 10 GbE (SFP+)	Not supported
CX-40	CX-40E-500S	12 x 40 GbE (QSFP+) 48 x 10 GbE via breakout cable	Not supported
CX-100	CX-100E-500S	5 x 100 GbE (QSFP28) 20 x 10 GbE (16 x SFP+, 4 x 10 GbE via breakout cable)	Supported, requires activation, configurable per client port
CX-500F	CX-100E-500F	5 x 100 GbE (QSFP28) 10 x 40 GbE (QSFP+) 50 x 10 GbE via breakout cable	Supported, requires activation, configurable per client port

\* maximum of 500 Gb/s configured client interfaces per system



**Physical Specifications**

Mechanical	Height	3.48" / 89mm (2RU)
	Width	17.34" / 440mm
	Depth	22.41" / 569mm
Electrical	Typical Power Consumption	480W – 500W (510W for CX-500F)
	Input Voltage Range (AC Option)	100-240VAC 50/60Hz
	Input Voltage Range (DC Option)	-40V DC to -72V DC
Environmental	Operating Temperature	0° to 40° C
	Storage Temperature	-40° to 70° C
	Humidity	90% non-condensing

**Regulatory and Compliance**

Type	Specifications
Emissions	FCC Class A, CISPR Class A Compliant, CE
Laser Safety	ANSI Class 1M, IEC Class 1M, EN 60825. FDA21 CFR 1040
Product Safety	UL/EN/IEC/AS/NZS/CAN/ 60950-1
Immunity	EN55024
NEBS Compliance	NEBS Level 1 (CX-10, CX-40) NEBS Level 1/3 (CX-100, CX-500F) • GR-63-CORE: Network Equipment Building Systems – Physical Protection • GR-1089-CORE: Electromagnetic Compatibility and Electrical Safety – Generic Requirement for Network Telecommunications Equipment

\*Specifications and Features are subject to change

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