



Cisco NCS 1014 12.8T

High-Density OSFP Multi-Haul DWDM Line Card

Contents

Product overview	2
Features and benefits.....	2
Prominent feature.....	3
Licensing.....	3
Product specifications.....	4
System requirements	5
Ordering information	6
Warranty information.....	7
Cisco Capital.....	7
Learn more.....	7



The OSFP-based 12.8T high-density multi-haul DWDM line card for the Cisco® NCS 1014 platform provides 25.6T of capacity from a single NCS 1014 chassis for C-band transmission and 51.2T of capacity from two NCS 1014 chassis for C+L-band transmission in fewer than 4 rack units consuming 0.1W per 1G of bandwidth.

Product overview

In today’s web-scale era, where AI requirements drive exponential growth in data traffic, the need for optical networking infrastructure that delivers unmatched density, performance, and cost efficiency has never been more critical. Modern and AI-driven applications require transmission networks that are both powerful and agile, balancing high throughput with minimal power consumption for sustainable operations. The ability to maximize capacity within limited rack space—without compromising on security or manageability—has become essential. Network simplicity and operational efficiency are the foundation of scalable architectures,

ensuring seamless deployment and rapid service delivery. Security is also paramount, with robust encryption needed to safeguard data in transit from evolving cyberthreats.

The Cisco® Network Convergence System (NCS) 1014 is a versatile multihaul system engineered to support both short- and long-distance transmission. It enables hyperscalers, service providers, and enterprises to deploy performance- and density-optimized solutions across their optical networks—delivering flexibility, scalability, and future-ready connectivity for rapidly evolving digital demands.

Features and benefits

Table 1. Features and benefits of the 12.8T line card

Feature	Benefit
Octal Small Form Factor Pluggable (OSFP)	Client-side compatibility to interoperate with 800G-capable routers and switches, including third-party products
Density	Provides the smallest footprint to transmit 25.6T of capacity in 2 rack units (RU)
Optical C- and L-band support	Provides C+L-band OSFP support on the line card at the port level to scale fiber capacity from 25.6T to 51.2T
High transmit launch power and optical signal-to-noise ratio (OSNR) performance	Enables deployable applications across data center interconnect (DCI), metro, and regional networks in point-to-point and reconfigurable optical add-drop multiplexer (ROADM) mesh applications
Encryption	Integrated MACsec encryption across all ports

Prominent feature

The 12.8T High-Density OSFP Multi-haul DWDM Line Card for the Cisco NCS 1014 platform is a breakthrough in optical networking for the web-scale era.

The line card delivers 25.6 Tbps of dense wavelength division multiplexing (DWDM) capacity from a single NCS 1014 chassis. It features 32 OSFP client ports and 32 OSFP ZR+ DWDM ports, all with integrated MACsec encryption for uncompromised security. Designed for maximum density and performance, the line card empowers operators to increase scale and optimize costs while maintaining high power efficiency.

Cisco OSFP 800G ZR+ coherent pluggable optics deliver 800G traffic over amplified DWDM links, supporting transmission distances up to 1000 km. Leveraging advanced CMOS and coherent technology,

these modules enable direct 800G wavelength transmission from router, switch, or DWDM system ports across existing DWDM line systems.

The 800G ZR+ modules use the industry-standard OpenROADM interoperable Probabilistic Constellation Shaping (PCS) mode, providing high-performance interoperability and extended reach beyond 800 ZR applications. They are ideally suited for metro and regional data center, service provider, and hyperscaler interconnects.

Cisco OSFP 800G ZR+ optical modules conform to OSFP MSA mechanical standards and feature duplex LC connectors as the media interface. Both C-band and L-band operation are supported.

Licensing

The 12.8T line card supports slice-level licensing for all 16 slices. A licensed line card comes with no slice support. A minimum of 1 slice license and up to 16 slice licenses are applicable for the line card, providing a pay-as-you-grow business model.



Product specifications

Table 2. Specifications

Software release	Cisco IOS® XR Release 26.3.1 or later
Port density	16 OSFP client and 16 OSFP DWDM trunk
Line rate support	400G, 600G, and 800G DWDM on OSFP ZR+
Client protocols	100G, 400G, 800G; DR8, VR8, 2x 400G FR4
Line card functionality	1 16x 800G transponder 2 16x 8x100G muxponder 3 16x 2x400G muxponder 4 12x 800G regenerator
Encryption	MACSEC
Open ROADM Feature Summary	Alarm reporting for Loss of Signal (LOS), Loss of Frame (LOF), Loss of Multiform (LOM), Alarm Indication Signal (AIS), Backward Defect Indicator (BDI) OTUk, ODUk, OPUk Performance Monitoring Threshold Crossing Alerts (TCAs) Local (internal) and line (network) loopbacks Trunk Trace Identifier
Ethernet Feature Summary	Alarms and Performance Monitoring Squelch and Local Fault Propagation LLDP Snooping Performance Monitoring and Threshold Crossing Alerts (TCAs) Local (internal) and line (network) loopbacks

Network Management	iPXE & ZTP IOSXR CLI SNMP Streaming Telemetry Netconf, Restconf, gRPC with Yang data models COSM and CONC
Physical Dimensions	Occupies 2 adjacent slots in NCS 1014 Chassis
Environmental conditions	Operating temperature: 0 to 40 degrees C
Power Consumption	-
Line card with 16x OSFP Client and 16x OSFP Trunk	Typical: 1060 W Max: 1110 W
NCS 1014 fully populated	Typical: 2600 W Max: 2900 W
Dimensions	1.6x15.7x10.95 inch (HxWxD)
Weight	5.5Kg
Storage Temperature	-5 to 55 degrees C
Relative Humidity	Normal: 5% to 85% non condensing Short term1 : 5% to 90% but not to exceed 0.024 kg water/kg of dry air

System requirements

The line card is supported on the NCS 1014-2 platform with Cisco IOS XR Software Release 26.3.1 and later.

Ordering information

Table 3. Ordering information

Part #	Product description
NCS1K14-SYS-P	NCS 1014 ATO Chassis, RTU enabled
NCS1014-2=	NCS 1014 Chassis
NCS1K14-CNTRLR-K9=	Network Convergence System 1014 Controller
SF-NCS1K14-2631K9P	NCS 1K14 - R26.3.1 SW, NCS 1014 perpetual
NCS1K14-FAN-2=	Network Convergence System 1014 FAN Module
NCS1K14-S-KIT=	NCS 1014 slide rails with rear lug and cable management
NCS1K14-AC-PSU-3=	Network Convergence System 1014 AC Power Supply Unit 3.2KW
NCS1K14-SA-D=	Network Convergence System 1014 Shelf Assembly Divider
NCS1K14-SSD=	Network Convergence System 1014 SSD
NCS1K14-OMP2-K9=	NCS 1014 OSFP 12.8T Line card
NCS1K14-OMP2-L-K9=	NCS 1014 OSFP 12.8T Line card, Licensed
NCS1K14-BLANK-2=	NCS 1014 Dual width Blank for NCS 1014-2 chassis
E-NCS1K14-TXP-SW=	NCS 1014 Transponders Software RTU

Warranty information

The following warranty terms apply to the Cisco NCS 1014 high-density transponder as well as services you may use during the warranty period. Your formal warranty statement appears in the Cisco Information Packet that accompanies your Cisco product.

- Hardware warranty duration: 5 years
- Software warranty duration: 1 year
- Hardware replacement, repair, or refund procedure: Cisco or our service center will use commercially reasonable efforts to ship a replacement part for delivery within 15 working days after receipt of the defective product at Cisco's site. Actual delivery times of replacement products may vary depending on customer location.

Product warranty terms and other information applicable to Cisco products are available at <https://www.cisco.com/go/warranty>.

Cisco Capital

Flexible payment options make it easier than ever to get the Cisco technology you need.

Cisco Capital® delivers leading-edge payment solutions, allowing you to stay focused on what's most important—your business. We can help you drive business outcomes, accelerate innovation and digital transformation, and adapt to market dynamics faster with flexible payment options tailored to your specific business needs. Reduce the total cost of ownership, conserve capital, and accelerate growth. We help you realize the full benefits of Cisco technology today, and in the future, and pay for it in the way that best suits your business requirements. Whether you are looking for a pay-as-you-consume model or need to bundle Cisco hardware, software, services, subscriptions and third-party solutions, [learn more](#) about how Cisco Capital can help.

Learn more

Get the [data sheet](#) for the Cisco NCS 1014 platform here