



Cisco NCS 1004 Overview

This chapter provides an overview of the Cisco Network Convergence Series (NCS) 1004.

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Cisco NCS 1004

A Cisco NCS 1004 unit is an optical transport platform that

- supports up to 4.8 Tbps traffic in a compact two-RU form factor,
- includes two redundant field-replaceable AC and DC power supply units; three redundant field-replaceable fans; a field-replaceable controller card; and SSD disks both on board the chassis and on the controller card. This configuration provides enhanced resiliency, and
- features four line card slots per chassis, each capable of hosting a line card for scalable network expansion.

See [Supported Line Cards](#), for more information.

Key features and benefits of Cisco NCS 1004

The NCS 1004 delivers these benefits:

- Transport of any trunk rate from 100 Gbps to 600 Gbps wavelengths on the same platform through software provisioning.
- Support of granular control of baud-rate and modulation format to maximize spectral efficiency.
- One universal transponder optimized for metro, long-haul, and submarine applications.
- Support for up to 350,000 ps/nm of residual chromatic dispersion compensation.
- Ability to transport 100GE and OTU4 client rates on the same platform through software provisioning.
- 600G DWDM, providing unparalleled scale and density—64 channels of 600G at 75 GHz, delivering 38.4 Tbps in 16 RU.
- State-of-the-art AES-256 encryption at scale—4.8 Tbps of encrypted trunk capacity per 2 RU.

Interoperability constraints and timing requirements for Cisco NCS 1001 and Cisco NCS 1004

Understand the interoperability constraints and timing requirements between Cisco NCS 1001 and Cisco NCS 1004.

Interoperability constraints and requirements

- Traffic loss may occur under certain conditions when Cisco NCS 1001 with Protection Switching Module (PSM) is configured as non-revertive and operates with Cisco NCS 1004.
- If traffic switches from the working path to the protect path, users must wait 120 seconds before performing a manual switch to prevent traffic loss.
- A manual switch performed before the interval, followed by a protect path failure, can result in up to 13 seconds of traffic loss.

Timing limitations

Supported line cards

A supported line card is a hardware module for the Cisco NCS 1004 platform that

- provides specific types and numbers of high-speed client interfaces,
- supports variable trunk port configurations for flexible bandwidth and transmission rates, and
- offers distinctive modulation, frequency, and error-correction capabilities tailored to deployment needs.

These line cards are supported on Cisco NCS 1004.

NCS1K4-1.2T-K9 C-band line card

The NCS1K4-1.2T-K9 (or 1.2 Tbps) C-band line card contains 12 QSFP-28 clients and two DWDM trunk ports. These trunk ports support multiple line rates and offer precise control of the modulation format, baud rate, and forward error correction. The trunk ports can be configured using software. The line card supports both module and slice configurations.



Note "1.2TC" refers to the NCS1K4-1.2T-K9 C-band line card.

The features of the 1.2T line card are:

- The card provides up to 12 100G or OTU4 client ports.
- The baud rate can be controlled between 28 Gbd/s and 72 Gbd/s.
- The frequency range is 191.25 to 196.1 THz with a default value of 193.1 THz.
- The modulation formats can be QPSK, 8 QAM, 16 QAM, 32 QAM, or 64 QAM.
- Configure hybrid modulation formats using 1/128 bits per symbol granularity.

- Forward Error Correction (FEC) of 27% and 15% overhead across line rates (only 15% for 600G).

