



## New and Changed Information

This chapter lists the new and changed information for each release.

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See [Data Models Configuration Guide for Cisco NCS 1004](#) and [Telemetry Configuration Guide for Cisco NCS 1000 Series](#) to refer the other configuration guides of NCS 1004.

This table summarizes new and changed information for Release 7.2.1, and lists where the features are documented.

**Table 1: New and Changed Features - R7.2.1**

Feature	Description	Where Documented
Mixed client rate support	In muxponder slice mode, both the slices can be configured with different client rates. For example, slice 0 can be configured with 100GE client rate and slice 1 can be configured with OTU4 client rate and the other way round. This provides flexibility for the card to simultaneously carry both the OTN and Ethernet client traffic across the two slices.	<a href="#">Supported Data Rates and Configuring the Card Mode</a>

Feature	Description	Where Documented
IKEv2 Certificate-based authentication	<p>IKEv2 uses RSA digital signatures to authenticate peer devices before setting up SAs. RSA signatures employ a PKI-based method of authentication.</p> <p>In public key cryptography, such as the RSA encryption system, each user has a key pair containing both a public and a private key. The keys act as complements, and anything encrypted with one of the keys can be decrypted with the other.</p>	<a href="#">Layer 1 Encryption</a>
MAC Address Snooping on Client Ports	MAC address snooping allows you to learn the MAC address of the neighbor, that is connected to the client ports. You can enable ARP snooping on all client ports and learn the MAC address of neighbors through CLI.	<a href="#">MAC Address Snooping on Client Ports</a>
QSFP-28 FR 100G and DAC pluggable support	<p>The following pluggables are supported from Release 7.2.1</p> <ul style="list-style-type: none"> <li>• QSFP-100G-CU1M</li> <li>• QSFP-100G-CU2M</li> <li>• QSFP-100G-CU3M</li> <li>• QSFP-100G-CU5M</li> <li>• QSFP28-100G-FR</li> </ul>	<a href="#">QSFP-28 FR 100G and DAC pluggable support</a>
FEC Mode Support for CoherentDSP Controller	The FEC states can be configured for the CoherentDSP Controller. The supported FEC states are EnhancedSD15 and EnhancedSD27 (default).	<a href="#">Configuring FEC on CoherentDSP Controllers</a>
BPSK Modulation Support	Binary Phase Shift Keying (BPSK) feature enables you to configure the trunk rates using CLI, NetConf YANG, and Open Config (OC) models. The supported trunk rates for the BPSK modulation are 50G, 100G, and 150G.	<a href="#">Configuring the Trunk Rate for BPSK</a>

Feature	Description	Where Documented
iBGP support over GCC	<p>The Internal BGP (iBGP) support over GCC allows external devices to exchange BGP routes through management interfaces of NCS1004 system.</p> <p>The iBGP over GCC feature enables you to configure VPN routing and forwarding (VRF) on the GCC management interfaces (port 0 and port1) of the NCS 1004 device. The VRF enables traffic isolation between the management ports (port 0 and port1).</p>	<a href="#">iBGP Support Using GCC</a>
1.2T Card Interoperability with the NCS1K4-OTN-XP Card	<p>NCS 1004 supports the NCS1K4-OTN-XP card with 100G grey-optics support. The OTN-XP card can be interoperable with the 1.2 Tbps card. In an interoperability scenario, the 1.2 T card can serve as a client port and the OTN-XP card can serve as a trunk port. The trunk port can converge 10 x 10 G traffic and transmit as 100G traffic in the OTU4 mode. This OTU4 traffic can further be multiplexed to a higher bandwidth Dense Wavelength-Division Multiplexing (DWDM) signal by connecting to the 1.2 T OTU4 client interface.</p>	<a href="#">1.2T Card Interoperability with OTN-XP Card</a>
OTN-XP card	<p>The OTN-XP line card supports up to 1.6Tbps of OTN aggregation switching functionality to optimize the available bandwidth. A single line card supports 8x100GE muxponder or 2x400 GE transponder applications.</p> <p>The OTN-XP line card contains:</p> <ul style="list-style-type: none"> <li>• Eight QSFP 28 ports</li> <li>• Four QSFP-DD ports</li> <li>• Two CFP2 ports</li> </ul>	<a href="#">Hardware Installation Guide for Cisco NCS 1004</a>

Feature	Description	Where Documented
LC Mode Configuration on OTN-XP Card	When an OTN-XP card is installed in the NCS 1004 chassis, the card is in POWERED_ON state. A datapath mode must be configured using the LC mode CLI after which the card transitions to the OPERATIONAL state.	<a href="#">LC Mode on OTN-XP Card</a>
Muxponder Configuration on OTN-XP Card	The muxponder configuration on the OTN-XP card supports two slices, 0 and 1. You can configure mxponder-slice 0, mxponder-slice 1, or both. Each mxponder-slice supports 10 client interfaces.	<a href="#">Muxponder Configuration on OTN-XP Card</a>
AINS Configuration on OTN-XP Card	The default AINS settings for all controllers on the OTN-XP card can be configured using the shared plane configuration CLI. However, it is possible to override the default AINS settings on a specific controller using the CLI.	<a href="#">Configuring AINS on OTN-XP Card</a>
Smart Licensing for OTN-XP Line Card	<p>Smart Licensing is a cloud-based, software license management solution that enables you to automate time-consuming, manual licensing tasks.</p> <ul style="list-style-type: none"> <li>• The license calculation is based on 100G client bandwidth and is independent of the client type.</li> <li>• The licensed OTN-XP Line Card PID is NCS1K4-OTN-XPL.</li> <li>• The license is charged based on the usage of 100G client bandwidth.</li> </ul>	<a href="#">Smart Licensing for OTN-XP Line Card</a>

Feature	Description	Where Documented
GCC0 support on OTU Interfaces for the OTN-XP card	The OTN-XP line card provides OTU interface that supports communication channels between adjacent network elements or nodes using GCC bytes in the OTN header. Remote node management is supported over the GCC interface. The node supports GCC0 on corresponding OTU2, OTU2e, and OTU4 interfaces. The node (Cisco FPGA) supports a maximum of 22 GCC channels for each card.	<a href="#">Remote Node Management on OTN-XP Card</a>
Laser Squelching Support on OTN-XP Card	The laser squelching feature when enabled on the 10GE controllers, allows the laser to shut down in the event of trunk faults. The SQUELCHED alarm is raised.	<a href="#">Configuring Laser Squelching on OTN-XP Card</a>
Idle insertion Support on OTN-XP Card	The idle insertion feature enables you to hold the propagation of local faults on the trunk port of the ethernet controller. You can enable the feature by configuring the hold-off timer on the 10GE controllers.	<a href="#">Enabling Idle Insertion on OTN-XP Card</a>
Loopback feature support on Ethernet and OTU Controller	The Loopback feature enables you to configure internal and line loopbacks on the OTU2, OTU2e, OTU4, and 10GE controllers.	<a href="#">Configuring Loopback on OTN-XP Card</a>
PRBS Support on ODU2e Controller	<p>Pseudo Random Binary Sequence (PRBS) feature enables you to perform data integrity checks between the NCS1004 trunk links without enabling the actual client traffic.</p> <p>This feature enables you to configure Optical Channel Payload Unit (OPU) on the ODU2e controller followed by the PRBS mode and the pattern. The PRBS supported pattern on the OTN XP line card is invertedPN31.</p>	<a href="#">Configuring PRBS on OTN-XP Card</a>

