

# Release Notes for Cisco NCS 1000 Series, IOS XR Release 25.1.1

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# **Revision history**

#### Table 1: Revision history

Date	Notes
July 2025	Added a new caveat under the <b>Open caveats</b> section.
March 2025	This is the first release of this publication.

## What's new in Cisco NCS 1000, IOS XR Release 25.1.1

Cisco is continuously enhancing the product with every release and this section covers a brief description of key features and enhancements. You can also access the links to the detailed documented features.

## Cisco NCS 1014

This table lists the features added in the NCS 1014 guides:

Feature	Description	
Hardware Installati	Hardware Installation	
NCS1K-MD-32x-CE passive patch panel	The MD-32x-CE patch panels are passive AAWG modules with 32 channels each. They support 150-GHz channel spacing, with a 75-GHz shift between ODD and EVEN panels. Combined, they offer 64 channels with 75-GHz spacing. Each panel supports wide optical pass-band and acts as an add/drop unit for 32 channels at 140 GBd.	
	The supported panels are:  • NCS1K-MD-32E-CE  • NCS1K-MD-320-CE	

Feature	Description
NCS1K14-EDFA2 Line Card	NCS1K14-EDFA2 line card is an optical amplifier for the NCS1014 Chassis. It functions as a DWDM optical terminal and includes a C-band bidirectional amplifier with channel power control capabilities. This card supports Optical Supervisory Channel (OSC), Coherent probe and Optical Time Domain Reflectometer (OTDR) functionalities.
Pluggable support	The new NCS1K14-EDFA2 card supports:
	• ONS-QSFP-OTDR
	• DP01QSDD-ZT5-A1
	• ONS-SC-PTP-1510

Description	
System Setup and Software Installation	
IPv6 addressing is now supported for the protocols such as PXE, DHCP, SCP, HTTP, HTTPS, and NTP which are used to bring up the NCS1014 node. however, PXE does not support IPv6 when using HTTPS.	
Configuring IPv6 addresses on the management interfaces is supported, enabling communication between nodes to utilize the extensive address space. Additionally, IPv6 addressing ensures efficient and secure device management.	
Inventory support and pluggable optics support are enabled in NCS 1014 system.  • NCS1K-MD-32O-CE and NCS1K-MD-32E-CE	
• ONS-QSFP-OTDR	
• DP01QSDD-ZT5-A1	
• ONS-SC-PTP-1510	
I I I I	

Feature	Description
Configuration	
Automatic topology discovery	NCS 1014 now supports topology discovery using the OSC links created through the EDFA2 card. To establish the OSC link between two nodes, you need to configure the OSC pluggable to be operational and the OSPFv2 protocol on both the near-end and far-end nodes. By connecting the NCS 1014 to OSPF networks, the NCS 1014 network information is automatically communicated across multiple nodes.

Feature	Description
DP01QSDD-ZT5-A1 support	The DP01QSDD-ZT5-A1 QDD pluggable is a coherent probe supported for the EDFA2 card. This pluggable supports C-band with tunable frequency and functions as a transponder.
	You can connect the coherent probe pluggable to establish a link for the first time in DWDM.
	Using this coherent pluggable you can monitor PRBS on trunk ports without enabling the maintenance state.
NCS1K-MD-32x-CE Mux/Demux passive patch panels support	NCS1K-MD-32O-CE and NCS1K-MD-32E-CE patch panels are a pair of mux/demux passive Athermal Arrayed Waveguide Grating (AAWG) modules designed for odd and even channels, operating in the C-band.
	The NCS1K-MD-32x-CE module connects to the controller card through a USB 2.0 channel and interfaces with the EDFA2 line card via fiber optics.
	The patch panel helps to retrieve inventory data, insertion loss of the optical paths, and the optical power levels monitored by the patch panels' photodiodes.
NCS1K14-EDFA2 Port configurations	The NCS1K14-EDFA2 line card is an optical amplifier card that offers OTDR, coherent probe, and OSC support to NCS 1014 networks. This card has an OTDR QDD port for initiating OTDR scan and bidirectional OTDR LC ports to test the fiber health. The probe QDD port enables optical line verification towards the NCS1K-MD-32X-CE patch panel. This card supports different datapath controllers such as:
	OTS controller
	OTS-OCH controller
	OSC controller
	Optics controller
	This card provides up to 796 slices at 6.25GHz spacing. The card has an internal Wave Blocker that can attenuate the optical power of provisioned channels slice by slice at 6.25 GHz. You can set up this EDFA card in flex grid mode to adapt signal amplification on each channel.
ONS-QSFP-OTDR support	The ONS-QSFP-OTDR is a Q-DD form factor module that plugs into port 6 of the NCS1K14-EDFA2 line card, within the NCS1014 Chassis.
	With this pluggable, you can conduct a manual scan to assess and diagnose the condition and performance of an optical fiber network.
	CLI commands are:
	• otdr-start controller ots R/S/I/P {rx   tx} value
	• otdr-stop controller ots R/S/I/P {rx   tx} value

Feature	Description
OSC support on EDFA-2 card	The EDFA2 card includes Optical Service Channel (OSC) ports, which enable the creation of a bidirectional communication channel to connect two nodes in a DWDM network. It includes two OSC controllers: one representing the OSC channel towards LINE-TX and the other representing the OSC physical port towards the OSC pluggable.
	To establish an OSC channel between two nodes, you configure the Gigabit Ethernet interface, which serves as the packet layer for the OSC channel, along with the OSPF protocol on the nodes. The OSC channel is beneficial for:
	verifying fiber continuity between two nodes.
	enabling remote node management.
	discovering network topology.
	• calculating span loss.
	CLI commands are:
	• controller Osc R/S/I/P tx-low-threshold value
	• controller Osc R/S/I/P rx-low-threshold value
	• controller Osc R/S/I/P transmit-power value
	• controller Osc R/S/I/P sec-admin-state { maintenance   normal }
	• controller Osc R/S/I/P shutdown
Optical safety on EDFA2 card	You can configure the optical safety mode to implement an optical safety mechanism on the BST2 and PRE amplifiers of the EDFA2 card. It ensures safe power levels and facilitates system recovery across various configurations and scenarios during fiber breakdown.
	This optical safety manages the shutdown and restart of the EDFA Laser using Automatic Laser Shutdown and Automatic Power Reduction mechanisms. This ensures that the Hazard Level 1 power limit is not exceeded, thereby ensuring personnel safety.
	CLI commands are:
	• controller Ots R/S/I/P egress-ampli-safety-control-mode {auto   disabled}
	• controller Ots R/S/I/P egress-ampli-osri
	• controller Ots R/S/I/P egress-ampli-force-apr { off  on }

Feature	Description
Span loss measurement	NCS 1014 measures span loss between two nodes. The measurement is performed using the OSC links created between the nodes by configuring the OSC pluggable to be operational and OSPFv2 protocol on the EDFA2 card on the nodes. These measurements are essential during network changes, like equipment installation or fiber repairs.
	You can configure both minimum and maximum span loss thresholds. If the received span loss exceeds the maximum threshold or falls below the minimum threshold, the system will trigger a SPAN-LOSS-OUT-OF-RANGE alarm.
	CLI commands are:
	• optical-line-control
	• controller Ots R/S/I/P span-loss min value
	• controller Ots R/S/I/P span-loss min value
Support for Smart Licensing using Policy on NCS1014-EDFA2 line card	Cisco Smart Licensing Using Policy (SLP) streamlines the licensing process for Cisco IOS XR products. You no longer need to register your device during installation, and there is no evaluation license state or period.
	Support for Smart Licensing using Policy is now extended to NCS1014-EDFA2 line card

Feature	Description
Data Models	
OC support for EDFA2 card	The Open Configuration (OC) support is introduced for the EDFA2 card and the OTDR pluggable. This enables you to retrieve the operational data and real-time telemetry data using these data models:
	• openconfig-optical-amplifier.yang
	• openconfig-optical-attenuator.yang
	• openconfig-wavelength-router.yang
	• openconfig/gnoi/OTDR.proto

## Cisco NCS 1010

There are no features introduced for NCS 1010 in Release 25.1.1.

## **Cisco Optical Site Manager**

This table lists the features added in the Cisco Optical Site Manager guides:

Feature	Description
Configuration	

Feature	Description
Additional Card Modes for OTN-XP	The <b>Card Configuration Wizard</b> now supports configuring these card modes for NCS1K4-OTN-XP card:
Card	• FC-MXP
	MXP-4x100G-TXP-400G with 400GE and 100GE/OTU4 client rates
	Additionally, you can configure the OC192 and STM64 client datarates for the MXP-40X10G-4X100G card mode in the 40x10G HM configuration.
Additional Trunk Rates for the	The <b>Select Card Mode</b> page of the <b>Card Configuration Wizard</b> has been updated to configure these trunk rates in the muxponder mode for 2x100-GE client traffic:
NCS1K14-2.4T-X-K9 Card	• 800G
	• 900G
	• 1000G
	• 1100G
Correlated Alarms	You can now view correlated alarms for a device in the <b>Alarms</b> tab, streamlining system performance management by highlighting primary alarms and suppressing secondary ones.
Direct CLI Access for Managed Devices	You can now directly access the Cisco IOS XR CLI for managed devices from the <b>Devices</b> section.
Environmental Monitoring in the Maintenance Tab	The <b>Maintenance</b> tab now features an <b>Environmental Monitoring</b> section, providing real-time voltage, current, and temperature data for line cards and the chassis. This addition simplifies device monitoring and management.
Support for 1.2T Cards	The <b>Card Configuration Wizard</b> now supports configuration of card mode for these cards:
	• NCS1K4-1.2T-K9
	• NCS1K4-1.2TLCW-K9
Support for NCS1K-OTDR Line Card	Cisco Optical Site Manager now allows you to manage the NCS1K-OTDR line card.
Support for Trunk and Client Port Connections	Cisco Optical Site Manager now allows one or more trunk ports on line cards to feed multiple line cards via client ports. This feature supports real and pre-provisioned line cards and is visible in NFV view with optical types <b>txp</b> and <b>roadm</b> . It enables IPC connections between trunk ports and client ports, allowing for efficient data flow across various line cards.

Feature	Description
User Tags	You can now add user tags to a chassis, module, PPM, interfaces, or OXC from the <b>User Tag</b> tab on the <b>Fault Monitoring</b> page. The added tags appear in the <b>User Tag</b> column of the alarms list.
	User tags streamline the identification and management of geographic locations and equipment across network sites where alarms are triggered.

# Release packages

Packages for Cisco NCS 1014



Note

The NCS 1014 packages include Cisco Optical Site Manager Software.

## Table 2: Packages for Cisco NCS 1014

Feature Set	Filename	Description
Composite Pack	age	
Cisco IOS XR Core Bundle + Manageability Packages	ncs1010-x64-25.1.1.iso	Contains required core packages, including operating system, Admin, Base, Forwarding, SNMP Agent, FPD, and Alarm Correlation and Netconf-yang, Telemetry, Extensible Markup Language (XML) Parser, HTTP server packages.
Individually Inst	tallable Packages	
Cisco IOS XR Telnet Packages	xr-telnet-25.1.1v1.0.0-1.x86_64.rpm xr-telnet-ncs1014-25.1.1v1.0.0-1.x86_64.rpm	Install these packages to support Telnet.
Cisco IOS XR Cisco Discovery Protocol (CDP) Packages	xr-cdp-25.1.1v1.0.0-1.x86_64.rpm xr-cdp-ncs1014-25.1.1v1.0.0-1.x86_64.rpm xr-cdp-f544c7c7d37890ec-25.1.1v1.0.0-1.x86_64.rpm xr-telnet-f544c7c7d37890ec-25.1.1v1.0.0-1.x86_64.rpm	Install these packages to support CDP.

## **Caveats**

## **Open caveats**

### **NCS 1014**

This table lists the open caveats for NCS 1014:

Identifier	Headline
CSCwn93733	NCS1014 version 24.4.1: An environmental crash was observed in the TXP node
CSCwn69606	USB boot & Install replace reimage failed with out of memory error for 25.1.1 XR Base with COSM pkg
CSCwn39238	Dynamic configurations for switch on NCS1014

#### Cisco Optical Site Manager

This table lists the open caveats for Cisco Optical Site Manager:

Identifier	Headline
CSCwn38179	Unable to establish a Remote Console connection to the neighbouring node through the current node
CSCwn66662	[COSM]: By default, few client optics FEC parameters is not configured as standard
CSCwn66679	COSM: Default optics/cd alarm thresholds and cd range values are not reported correctly on OCH
CSCwo12784	[COSM]: OCH operational data is inconsistent at times because of malformed XR telemetry data.
CSCwo16031	[COSM]: Port 2 and 3 are missing in ETH and OCH interfaces after editing mixed mode FMG in QDD card
CSCwo16031	[COSM]: Port 2 and 3 are missing in ETH and OCH interfaces after editing mixed mode FMG in QDD card
CSCwo28413	[COSM-ncs1010] : BRK-SA passive chassis discovered as UNKNOWN-CARD
CSCwq32902	COSM HA fails despite its redundancy peer network configuration being operational

## **Bug Search Tool**

Cisco Bug Search Tool (BST) is a web-based tool that acts as a gateway to the Cisco bug tracking system that maintains a comprehensive list of defects and vulnerabilities in Cisco products and software. BST provides you with detailed defect information about your products and software.

## **Using Bug Search Tool**

You can use the Cisco Bug Search Tool to search for a specific bug or to search for all bugs in a release.

#### **Procedure**

- **Step 1** Go to the http://tools.cisco.com/bugsearch.
- **Step 2** Log in using your registered Cisco.com username and password.

The Bug Search page opens.

- **Step 3** Use any of these options to search for bugs, and then press Enter (Return) to initiate the search:
  - To search for a specific bug, enter the bug ID in the Search For field.
  - To search for bugs based on specific criteria, enter search criteria, such as a problem description, a feature, or a product name, in the Search For field.
  - To search for bugs based on products, enter or select a product from the Product list. For example, if you enter "WAE," you get several options from which to choose.
  - To search for bugs based on releases, in the Releases list select whether to search for bugs affecting a specific release, bugs that were fixed in a specific release, or both. Then enter one or more release numbers in the Releases field.
- **Step 4** When the search results are displayed, use the filter tools to narrow the results. You can filter the bugs by status, severity, and so on.

To export the results to a spreadsheet, click **Export Results to Excel**.

## **Determine software version**

#### **NCS 1014**

Log into NCS 1014 node and enter the **show version** command.

```
RP/0/RP0/CPU0:ios#show version
Mon Mar 31 16:37:09.900 IST
Cisco IOS XR Software, Version 25.1.1 LNT
Copyright (c) 2013-2025 by Cisco Systems, Inc.
Build Information:
          : cisco
Built By
Built On
             : Fri Mar 28 22:17:28 UTC 2025
Build Host : iox-ucs-037
 Workspace : /auto/srcarchive12/prod/25.1.1/ncs1010/ws/
Version
            : 25.1.1
Label
             : 25.1.1
cisco NCS1010 (C3758R @ 2.40GHz)
cisco NCS1014 (C3758R @ 2.40GHz) processor with 32GB of memory
ios uptime is 11 minutes
NCS 1014 - Chassis
```

## **Determine firmware version**

Use the **show hw-module fpd** command in EXEC mode to view the hardware components with their current FPD version and status. The status of the hardware must be CURRENT; The Running and Programed version must be the same.

#### **NCS 1014**

Log into the node and enter the show hw-module fpd command.

#### 2.4T and 2.4T-X cards

RP/0/RP0/CPU0:ios#show hw-module fpd Tue Mar 25 16:30:45.888 IST

Auto-upgrade:Enabled,PM included

Attribute codes: B golden, P protect, S secure, A Anti Theft aware

	<i>y</i> , <u>1</u>	·	•		FPD Ver	
Location Reload Loc			FPD device			Programd
	NCS1K14-CNTLR-K9			CURRENT		
~	NCS1K14-CNTLR-K9	1.0	ADM-MB	CURRENT	2.30	2.30
~	NCS1K14-CNTLR-K9	1.0	BIOS S	CURRENT	5.00	5.00
	NCS1K14-CNTLR-K9	1.0	BIOS-Golden BS	CURRENT	4.70	
0/RP0/CPU0 0/RP0	NCS1K14-CNTLR-K9	1.0	CpuFpga S	CURRENT	1.17	1.17
0/RP0/CPU0 0/RP0	NCS1K14-CNTLR-K9	1.0	CpuFpgaGolden BS	CURRENT	1.09	
0/RP0/CPU0 0/RP0	NCS1K14-CNTLR-K9	1.0	SsdIntelSCKKBGZ S	CURRENT	1.30	1.30
0/RP0/CPU0 0/RP0	NCS1K14-CNTLR-K9	1.0	TamFw S	CURRENT	9.04	9.04
0/RP0/CPU0 0/RP0	NCS1K14-CNTLR-K9	1.0	TamFwGolden BS	CURRENT	9.04	
0/PM0 NOT REQ	NCS1K4-AC-PSU-2	1.1	PO-PriMCU	CURRENT	1.03	1.03
0/PM0 NOT REQ	NCS1K4-AC-PSU-2	1.1	PO-SecMCU	CURRENT	1.05	1.05
0/PM1 NOT REQ	NCS1K4-AC-PSU-2	0.1	PO-PriMCU	CURRENT	1.03	1.03
0/PM1 NOT REQ	NCS1K4-AC-PSU-2	0.1	PO-SecMCU	CURRENT	1.05	1.05
0/1/NXR0 NOT REQ	NCS1K14-2.4T-K9	0.1	CpuModFw S	CURRENT	251.100	251.100
0/2/NXR0 NOT REQ	NCS1K14-2.4T-X-K9	1.0	CpuModFw S	CURRENT	251.100	251.100
0/Rack NOT REQ	NCS1014	1.1	ADM-CHASSIS	CURRENT	0.21	0.21
0/Rack NOT REQ	NCS1014	1.1	IoFpga S	CURRENT	1.19	1.19
0/Rack NOT REQ	NCS1014	1.1	IoFpgaGolden BS	CURRENT	1.05	
0/Rack 0/Rack	NCS1014	1.1	SsdIntelSC2KB S	CURRENT	1.30	1.30
0/4 NOT REQ	NCS1K-MD-32E-CE	0.2	MD-32-LUM S	CURRENT	2.20	2.20
0/5 1.12	NCS1K-MD-320-CE SNOT REQ		12.1 MD-32-ACC	S CURREN	IT 1	.12

#### QXP card

 $\mbox{RP/0/RP0/CPU0:ios\#show hw-module}$  fpd Tue Mar 25 16:30:45.888 IST

Auto-upgrade:Enabled,PM included

Attribute codes: B golden, P protect, S secure, A Anti Theft aware

FPD Versions

Location Card type HWver FPD device ATR Status Running Programd

Reload	Loc

ncioda io						
	NCS1K14-CNTLR-K9			CURRENT		
	NCS1K14-CNTLR-K9	1.0	ADM-MB	CURRENT	2.30	2.30
~	NCS1K14-CNTLR-K9	1.0	BIOS S	CURRENT	5.00	5.00
0/RP0/CPU0 0/RP0	NCS1K14-CNTLR-K9	1.0	BIOS-Golden BS	CURRENT	4.70	
0/RP0	NCS1K14-CNTLR-K9	1.0	CpuFpga S	CURRENT	1.17	1.17
0/RP0/CPU0 0/RP0	NCS1K14-CNTLR-K9	1.0	CpuFpgaGolden BS	CURRENT	1.09	
0/RP0/CPU0 0/RP0	NCS1K14-CNTLR-K9	1.0	SsdIntelSCKKBGZ S	CURRENT	1.30	1.30
0/RP0	NCS1K14-CNTLR-K9	1.0	TamFw S	CURRENT	9.04	9.04
0/RP0	NCS1K14-CNTLR-K9	1.0	TamFwGolden BS	CURRENT	9.04	
NOT REQ	NCS1K4-AC-PSU-2	1.1	PO-PriMCU	CURRENT	1.03	1.03
NOT REQ	NCS1K4-AC-PSU-2	1.1	PO-SecMCU	CURRENT	1.05	1.05
NOT REQ	NCS1K4-AC-PSU-2	0.1	PO-PriMCU	CURRENT	1.03	1.03
NOT REQ	NCS1K4-AC-PSU-2	0.1	PO-SecMCU	CURRENT	1.05	1.05
NOT REQ	NCS1K4-QXP-K9	0.2	CpuModFw S	CURRENT	251.100	251.100
NOT REQ	NCS1014	1.1	ADM-CHASSIS	CURRENT	0.21	0.21
NOT REQ	NCS1014	1.1	IoFpga S	CURRENT	1.19	1.19
NOT REQ	NCS1014	1.1	IoFpgaGolden BS	CURRENT	1.05	
0/Rack 0/Rack	NCS1014	1.1	SsdIntelSC2KB S	CURRENT	1.30	1.30
NOT REQ	NCS1K-MD-32E-CE	0.2	MD-32-LUM S	CURRENT	2.20	2.20
0/5 SNOT REQ	NCS1K-MD-32O-CE	12.1	MD-32-ACC S	CURRENT	1.12	1.12

#### EDFA2 card

 $\mbox{RP/0/RP0/CPU0:ios\#show hw-module}$  fpd Tue Mar 25 16:30:45.888 IST

Auto-upgrade:Enabled,PM included

Attribute codes: B golden, P protect, S secure, A Anti Theft aware

					FPD Ver	sions
Location Card Reload Loc	type	HWver	FPD device	ATR Status	Running	Programd
0/RP0/CPU0 NCS1F	K14-CNTLR-K9	1.0	ADM-DB	CURRENT	2.10	2.10
0/RP0/CPU0 NCS1P NOT REQ	K14-CNTLR-K9	1.0	ADM-MB	CURRENT	2.30	2.30
0/RP0/CPU0 NCS1F 0/RP0	K14-CNTLR-K9	1.0	BIOS S	CURRENT	5.00	5.00
0/RP0/CPU0 NCS1F 0/RP0	K14-CNTLR-K9	1.0	BIOS-Golden BS	CURRENT	4.70	
0/RP0/CPU0 NCS1F 0/RP0	K14-CNTLR-K9	1.0	CpuFpga S	CURRENT	1.17	1.17

0/RP0/CPU0 0/RP0	NCS1K14-CNTLR-K9	1.0	CpuFpgaGolden BS	CURRENT	1.09	
	NCS1K14-CNTLR-K9	1.0	SsdIntelSCKKBGZ S	CURRENT	1.30	1.30
-,	NCS1K14-CNTLR-K9	1.0	TamFw S	CURRENT	9.04	9.04
- ,	NCS1K14-CNTLR-K9	1.0	TamFwGolden BS	CURRENT	9.04	
0/PM0 NOT REO	NCS1K4-AC-PSU-2	1.1	PO-PriMCU	CURRENT	1.03	1.03
0/PM0 NOT REO	NCS1K4-AC-PSU-2	1.1	PO-SecMCU	CURRENT	1.05	1.05
0/PM1 NOT REO	NCS1K4-AC-PSU-2	0.1	PO-PriMCU	CURRENT	1.03	1.03
0/PM1 NOT REO	NCS1K4-AC-PSU-2	0.1	PO-SecMCU	CURRENT	1.05	1.05
0/0/NXR0 NOT REO	NCS1K14-EDFA2	0.1	CpuModFw S	CURRENT	251.100	251.100
0/0/NXR0 NOT REQ	NCS1K14-EDFA2	0.1	OptModFw S	CURRENT	2.04	2.04
0/Rack NOT REO	NCS1014	1.1	ADM-CHASSIS	CURRENT	0.21	0.21
0/Rack NOT REO	NCS1014	1.1	IoFpga S	CURRENT	1.19	1.19
0/Rack NOT REO	NCS1014	1.1	IoFpgaGolden BS	CURRENT	1.05	
0/Rack 0/Rack	NCS1014	1.1	SsdIntelSC2KB S	CURRENT	1.30	1.30
0/Rdek 0/4 NOT REO	NCS1K-MD-32E-CE	0.2	MD-32-LUM S	CURRENT	2.20	2.20
0/5 SNOT REQ	NCS1K-MD-320-CE	12.1	MD-32-ACC S	CURRENT	1.12	1.12

# **Supported MIBs**

The MIB Locator tool on Cisco Feature Navigator (CFN) provides access to the supported MIBs.