Release Notes for Network Convergence System 1000 Series, IOS XR Release 25.4.1

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Cisco NCS 1000 series, IOS XR release 25.4.1

Cisco IOS XR release 25.4.1 is a new feature release for Cisco NCS 1000 Series.

For more details on the Cisco IOS XR release model and associated support, see Software Lifecycle Support Statement - IOS XR.

This section provides a brief description of the new software features introduced in this release.

New software features

This section provides a brief description of the new software features introduced in this release.

Table 1. New software features for NCS 1000 Series, Release 25.4.1

Product impact	Feature	Description
NCS 1014 Configuration		
Ease of Use	400ZR Coherent Probe support	The DP04QSDD-E26-A1 pluggable supports 400G ZR coherent probe functionality on the NCS1K14-EDFA2 card. The Pluggable is tunable across C band frequency range and serves as a transponder performing probe functionality. The coherent probe provides link tests before provisioning an active service on the Optical fiber. Additionally, this pluggable allows PRBS monitoring on trunk ports without the need to enable maintenance mode.
Software Reliability	Remote reset of client optics	You can now remotely reset a client optics using a new CLI command and Yang model. This capability does not apply to CIM 8. This feature enables you to remotely perform cold reboots on optics to address issues that occur due to hot or stuck optics scenarios. Remote power cycling enables more flexible and programmable management of optics. Supported optics are: • 400GE • 4x100GE • All QSFP optics • ZR optics, including QDD-ZR, QDD-ZR+, 400G-ZR, and 400G Bright ZR+ CLI: The command **reload transceiver Optics *R/S/I/P* cold** is introduced Yang model: The new yang model **Cisco-IOS-XR-reset-optics-act.yang** is introduced
Software Reliability	OTDR enhancements	These functionality enhancements have been implemented on the ONS-QSFP-OTDR pluggable of the NCS1K14-EDFA2 card: • OTDR results now include total measured loss and total measured length alongside existing results such as

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Product impact	Feature	Description
		scan direction, scan status, optical return loss, SOR file, total events detected, and the events. • Unique names can be assigned to SOR files for easier identification. • SOR files from automatic and manual OTDR scans are organized into separate folders to differentiate between file types. CLI: The keyword **label *string*** is added to the command **otdr-start controller ots *R/S/I/P direction***.
Software reliability	MQLS2.0 Signal Span Loss Enhancement	The enhanced signal span loss enables you to set the expected and threshold values for managing RX signal span loss. The enhancement enables the line system to: • monitor the change in RX signal span loss value, • compare the current and expected RX signal span loss values, • check if the span loss difference is within the set threshold values, and • raise the relevant alarms, if the span loss difference is more than the threshold values. New CLI parameters added for span-loss attribute on the LINE OTS controller are: • rx-expected-span-loss • rx-exp-rel-thr-deg <10...420> • rx-exp-rel-thr-fail <10...420> To enable the expected RX signal span loss: rx-expected-span-loss To disable the expected RX signal span loss: no span-loss rx-expected-span-loss Modified YANG models are: • Native YANG Model – **Cisco-IOS-XR-olc-cfg.yang** • open Config model – **openconfig-transport-line-common.yang** New alarms are introduced: • **OLC_SPAN_LOSS_FM_RX_SIGNAL_DEGRADE** – Rx signal span loss degraded • **OLC_SPAN_LOSS_FM_RX_SIGNAL_FAIL** – Rx signal span loss failed

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Product impact	Feature	Description
Software Reliability	7-day 15-minute optics PM history	This enhancement enables the collection and storage of 15-minute performance monitoring samples, collecting up to 672 samples. Previously, the CLI bucket range was 1-32; now, it is increased to 1-672. Updated CLI command parameter: **show controllers *Controller-type R/S/I/P* pm history 15-min optics 1 bucket <1-672>** New CLI command introduced: **performance-mgmt controller 15-min extend days <0-7>,** where 0 stands for 8 hours. This enhancement provides comprehensive visibility into interface performance by recording 15-minute counters over a 7-day period. This allows users to effectively monitor and assess network interface health status.
Software Reliability	Enhanced temperature monitoring parameters for optics	Monitoring parameters for optical pluggable modules are enhanced with new CLI attributes and Open Config leaves. The CLI attribute TEMP MODULE indicates the temperature of the pluggable modules in these CLI command output: • show environment all • show environment temperature • show environment temperature location <lc location> These temperature parameters are supported through the openconfig-platform-transceiver.yang model: • alarm-status • instant • interval • avg • max • min • min-time • max-time • alarm-severity [present only when alarm-status is true] • alarm-threshold [present only when alarm-status is true]
Software Reliability	GCC0 interface support on NCS1K4-QXP-K9 card	This feature introduces GCC0 interface support in Trunk OpenROADM mode for the DP04QSDD-HK9 pluggable on the NCS1K4-QXP-K9 card. The Coherent DSP controller supports the GCC0 interface, enabling you to remotely manage, monitor, and operate the chassis and line cards, especially in environments without direct Data Communication Network (DCN) accesss.

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Product impact	Feature	Description
Software Reliability	Enhanced Channel Automatic Power Control (APC) support on EDFA2 Card	This feature introduces enhanced channel control and management on the EDFA2 card, enhancing configuration and management capabilities. It allows users to configure the expected input power at full channel load as a single, unified parameter, streamlining previous legacy BST1 configurations with new CLI commands. These commands automatically configure BST1 gain and facilitate the raising or clearing of two new alarms per channel for improved monitoring. Additionally, this feature enables users to control the initial setup of channels, amplifiers, and thresholds required for Metro Open Line System (MOLS) deployment. New Alarms introduced: • OLC_APC_FM_CHANNEL_LOW_INPUT_POWER • OLC_APC_FM_CHANNEL_HIGH_INPUT_POWER New CLI commands introduced: • channel-minimum-input-psd • expected-total-input-power • channel-rx-power-low-rel-thr • channel-rx-power-high-rel-thr You can configure these commands using the OpenConfig model. The transport line common model is augmented to support channel configuration on the EDFA2 card.
Software Reliability	SUDI Support for CIM8 Pluggable	SUDI (Secure Unique Device Identifier) enables customers to confirm that a module is a genuine Cisco product. This feature helps protect against the use of counterfeit modules.
NCS 1014 Factory Reset		
Software Reliability	Factory Reset	This feature allows customers to remove all data from the device before initiating a Product Return and Replace (PRR). This process ensures that all sensitive customer information is permanently deleted and cannot be recovered.
NCS 1014 Data Models		
Software Reliability	Enhanced OpenConfig Transceiver Threshold monitoring	You can now monitor read-only power threshold values for all Grey (client) optics (including 400G, 4x100G, and 100G) and Coherent Optics using the **openconfig-platform-transceiver.yang** model. This support extends across all form factors, such as ZR, CFP, and CIM8. Monitoring these thresholds is crucial for ensuring stable and reliable operation, especially for high-power 400G optics.
Software Reliability	OpenConfig OSPF augmentation to support distribute link-state	This enhancement introduces support for the OSPF distribute link-state capability within the openconfig-network-instance.yang model through a new extended YANG model. New Extended YANG model introduced: **Cisco-IOS-XR-openconfig-ospfv2-ext.yang** This feature allows OpenConfig to deliver Operations,

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Product impact	Feature	Description
		Administration, and Maintenance (OAM) functionality for distributed link-state capability.
Software Reliability	gNOI otdr.proto enhancements	The gNOI otdr.proto has these enhancements: • Displays total measured loss and total measured length in OTDR results, in addition to existing measurements. • Allows assignment of unique names to SOR files for easier identification. • Organizes SOR files from auto and manual OTDR scans into separate folders to distinguish between file types. • Provides an option to disable Auto Negotiation, which is set to false by default, directly from the gNOI proto.
Software Reliability	OC UDC support in EDFA2 card	This feature introduces UDC capability, allowing UDC traffic on the EDFA2 card using OpenConfig models. The NCS 1014 supports PTP ports, which can be converted to UDC ports for carrying UDC traffic. These pluggables are supported: • ONS-SI-GE-LX • GLC-TE
Software Reliability	Enhanced Channel Automatic Power Control (APC) support on EDFA2 Card	This feature introduces enhanced channel control and management on the EDFA2 card, enhancing configuration and management capabilities. It allows users to configure the expected input power at full channel load as a single, unified parameter, streamlining previous legacy BST1 configurations with new CLI commands. These commands automatically configure BST1 gain and facilitate the raising or clearing of two new alarms per channel for improved monitoring. Additionally, this feature enables users to control the initial setup of channels, amplifiers, and thresholds required for Metro Open Line System (MOLS) deployment. New Alarms introduced: • OLC_APC_FM_CHANNEL_LOW_INPUT_POWER • OLC_APC_FM_CHANNEL_HIGH_INPUT_POWER New CLI commands introduced: • channel-minimum-input-psd • expected-total-input-power • channel-rx-power-low-rel-thr • channel-rx-power-high-rel-thr You can configure these commands using the OpenConfig model. The transport line common model is augmented to support channel configuration on the EDFA2 card.
NCS 1010 Optical Applications		

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Product impact	Feature	Description
Software Reliability	OTDR Enhancements	These enhancements have been made to OTDR functionality: • OTDR results now include total measured loss and total measured length alongside existing measurements. • Unique names can be assigned to SOR files for easier identification. • SOR files from automatic and manual OTDR scans are organized into separate folders to differentiate between file types. CLI: The keyword **label *string*** is added to the command **otdr-start controller ots *R/S/I/P direction***.
NCS 1010 Datapath Configuration		
Software Reliability	7-day 15-minute optics PM history	This enhancement enables the collection and storage of 15-minute performance monitoring samples, collecting up to 672 samples. Previously, the CLI bucket range was 1-32; now, it is increased to 1-672. Updated CLI command parameter: **show controllers *Controller-type R/S/I/P* pm history 15-min optics 1 bucket <1-672>** New CLI command introduced: **performance-mgmt controller 15-min extend days <0-7>,** where 0 stands for 8 hours. This enhancement provides comprehensive visibility into interface performance by recording 15-minute counters over a 7-day period. This allows users to effectively monitor and assess network interface health status.
Software Reliability	1G Speed support on OSC Gigabit Ethernet	The Gigabit Ethernet interface on the OSC now supports data rates up to 1 Gbps, in addition to the existing 100 Mbps. This enhancement allows you to configure the interface speed to 1 Gbps, enabling the use of UDC ports to extend your Data Communication Network (DCN) for monitoring remote NCS 1010 and NCS 1020 sites. To enable 1 Gbps throughput for the Gigabit Ethernet interface, use the command interface gigabitEthernet R/S/I/P and set the speed to 1000. IP based Packet forwarding Throughput on OSC Gigabit is maximum 200Mbps and UDC Traffic Over OSC Gigabit is maximun upto 880Mbps. For speed configuration options: • The 100 Mbps speed can be configured using the command speed 100. • If the speed configuration is removed using the command no speed, the default speed will revert to

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Product impact	Feature	Description
		100 Mbps. • Configuring a 10 Mbps speed is not supported and will result in failure.
NCS 1001 System Setup and Software Installation		
Ease of Setup	Zero Touch Provisioning of Remote NCS 1001 Devices via DHCP Frame Relay over OSC	This feature enables you to configure the NCS 1001 device, connected to the DCN, to function as a DHCP Frame Relay over the OSC channel. This supports zero touch provisioning for remote NCS 1001 devices. With this capability, you can provision NCS 1000 devices remotely, removing the need for onsite personnel or manual configuration. This saves time and effort, especially in locations that are difficult to access. It is particularly beneficial in RON architecture where all links are point to point.
NCS 1004 Configuration		
Software Reliability	GCC0 interface support on NCS1K4-QXP-K9 card	This feature introduces GCC0 interface support in Trunk OpenROADM mode for the DP04QSDD-HK9 pluggable on the NCS1K4-QXP-K9 card. The Coherent DSP controller supports the GCC0 interface, enabling you to remotely manage, monitor, and operate the chassis and line cards, especially in environments without direct Data Communication Network (DCN) accesss.
Cisco Optical Site Manager		
Ease of setup	Install Cisco Optical Site Manager on NCS 1001 or NCS 1004	You can now install Cisco Optical Site Manager on NCS 1001 and NCS 1004 platforms, enhancing optical network management across more devices. NCS 1001 supports one software package in its repository, while NCS 1004 can store two. NCS 1014 already supports this feature, and this release extends the capability to NCS 1001 and NCS 1004.
Upgrade	Additional Trunk Rates for the NCS1K14-2.4T-X-K9 Card	The **Select Card Mode** page of the **Card Configuration Wizard** has been updated to configure these trunk rates in the muxponder mode for 2x100-GE client traffic: • 400G • 500G • 600G
Ease of use	Amplifier Working Mode Support for NCS 1001	You can now choose between **Channel Power** and **Fixed Gain** modes when configuring the working mode for Cisco NCS 1001 cards in the **Amplifier** section of the **Provisioning** tab. In Channel Power mode, the amplifier keeps each channel at a set power. In Fixed Gain mode, it adjusts gain based on spectral density for flexible and wider channel deployments.
Ease of use	Submarine Mode for OLT Card on NCS 1010	You can now enable submarine mode for the OLT card of an NCS 1010 device from the **Submarine Mode** column of the **Optical Degrees** section. Submarine mode helps you maintain constant output power at SLTE with a configurable attenuation profile, supporting the requirements of subsea systems through RX and TX ports.

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Product impact	Feature	Description
Ease of use	Real-Time CPU and Memory Monitoring	You can now monitor real-time CPU usage and memory data in the **CPU Utilization** and **Memory** sections of the **Maintenance** tab. This helps you quickly assess device performance and take action as needed. The feature is supported on all NCS 1000 platforms.
Software Reliability	Support for NCS1K14-EDFA2 card in Cisco Optical Site Manager	Cisco Optical Site Manager now supports the NCS1K14-EDFA2 card. To use the EDFA2 card, set the optical type to ROADM. The EDFA2 card supports these pluggables and passive modules: • ONS-SC-PTP-1510: Optical Supervisory Channel (OSC) pluggable • ONS-QSFP-OTDR: Optical Time-Domain Reflectometer (OTDR) pluggable • DP01QSDD-ZT5-A1: Coherent probe pluggable • NCS1K-MD-32O-CE: 32-channel Odd Mux/Demux Patch Panel, C-band Enhanced • NCS1K-MD-32E-CE: 32-channel Even Mux/Demux Patch Panel, C-band Enhanced This integration enables comprehensive Operations, Administration, and Maintenance (OAM) capabilities for the card within Cisco Optical Site Manager. The Cisco Optical Site Manager supports only these capabilities: • Inventory • Alarms and alarm history • Provisioning (Amplifier, ZRPlus Interfaces, Interface, Ethernet Interfaces, and Optical Channel) • Performance monitoring and TCA (Threshold crossing alerts) • Maintenance (Live Data, Environmental Monitoring, and Power Monitoring) • Optical Degrees, Internal patchcord (IPCs), Network Function Virtualization (NFV)

New hardware features

This section provides a brief description of the new hardware features introduced in this release.

Table 2. New hardware feature for NCS 1000 series, Release 25.4.1

Product impact	Feature	Product impact
Hardware Reliability	USB inventory support	NCS 1001 can now retrieve information from additional passive devices connected to its USB ports. The feature extends support beyond previously supported passive devices, allowing you to access data from a wider range of connected equipment. The

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Product impact	Feature	Product impact
		passive devices include: • NCS 1000 32 chs Even Mux/Demux Patch Panel (NCS1K-MD-32E-CE) • NCS 1000 32 chs Odd Mux/Demux Patch Panel (NCS1K-MD-32O-CE) • Cisco ONS 15216 4 Channel OADMs CLI: The keyword **usb-port *port number* passive-eeprom {il | manuf | all }** is added to the command show hw-module.
Hardware Reliability	Pluggable Support	The NCS1K14-EDFA2 line card now supports these pluggables: • DP04QSDD-E26-A1 • GLC-TE

Open issues

This table lists the open issues in this specific software release.

Note: This software release may contain open bugs first identified in other releases. To see additional information, click the bug ID to access the Cisco Bug Search Tool (BST).

Table 3. Open issues for Cisco NCS 1014

Bug ID	Description
CSCwr67622	CIM-8 trunk experiences high switching time during PSM switching

Table 4. Open issues for Cisco Optical Site Manager

Bug ID	Description
CSCws26448	Enabling 2x100GE support on NCS1K14-2.4T-X-K9 line card slice mode with 400/500/600G trunk rates
CSCwr96071	Disk space alarm differentiation mismatch between Cisco Optical Site Manager and XR
CSCwr99969	Cisco Optical Site Manager displays incorrect Status and Results after STOP action

Known issues

NCS 1000 series

During a software upgrade, the system may not complete the Auto-FPD upgrade as expected. After the upgrade, the FPD status shows 'RLOAD REQ', indicating that you must perform an additional reload to activate the updated FPD.

NCS 1004

Autonomous FPD upgrade feature upgrades the FPD firmware version of LC components to the current version along with software activation without manual steps irrespective of "**fpd auto-upgrade enable/disable**" CLI configuration.

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- On NCS 1004, LCs supporting Autonomous FPD upgrade: 1.2T, 1.2TL, QDD, QXP.
- Not Supported on: OTN-XP

Supported software packages

This section provides information about the release packages associated with NCS 1000 series

Note: The NCS 1014 packages include Cisco Optical Site Manager Software.

Table 5. Software packages for NCS 1014, Release 25.4.1

Feature Set	Filename	Description
Composite package		
Cisco IOS XR Core Bundle + Manageability Package	ncs1010-x64-25.4.1.iso	IOS 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. XR Base Image
Individually installable packages		
Cisco IOS XR Telnet Packages	xr-telnet-25.4.1v1.0.0-1.x86_64.rpm xr-telnet-ncs1014-25.4.1.v1.0.0-1.x86_64.rpm	Install these packages to support Telnet.
Cisco IOS XR Security Package	xr-k9sec-pid-eb216ea0977bb9c7-25.4.1.v1.0.0-1.x86_64.rpm xr-k9sec-25.4.1.v1.0.0-1.x86_64.rpm xr-k9sec-pid-ncs1014-25.4.1.v1.0.0-1.x86_64.rpm xr-k9sec-f544c7c7d37890ec-25.4.1.v1.0.0-1.x86_64.rpm	Support for Encryption, Decryption, IP Security (IPsec), Secure Socket Layer (SSL), and Public-key infrastructure (PKI).
Cisco IOS XR Cisco Discovery Protocol (CDP) Packages	xr-cdp-25.4.1v1.0.0-1.x86_64.rpm xr-cdp-ncs1014-25.4.1v1.0.0-1.x86_64.rpm xr-cdp-f544c7c7d37890ec-25.4.1v1.0.0-1.x86_64.rpm xr-telnet-f544c7c7d37890ec-25.4.1v1.0.0-1.x86_64.rpm	Install these packages to support CDP.

Table 6. Software packages for NCS 1004, Release 25.4.1

Feature Set	Filename	Description
Composite package		

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Feature Set	Filename	Description
Cisco IOS XR Core Bundle + Manageability Package	NCS1004-iosxr-px-k9-25.4.1.tar	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 installable packages		
Cisco IOS XR Security Package	ncs1004-k9sec-1.0.0.0-r2541.x86_64.rpm	Support for Encryption, Decryption, IP Security (IPsec), Secure Socket Layer (SSL), and Public-key infrastructure (PKI).
Cisco IOS XR OTN-XP DP Package	ncs1004-sysadmin-otn-xp-dp-24.5.1-r2411.x86_64.rpm (part of ncs1004-iosxr-px-k9-24.5.1.tar)	Install this data path FPD packages on the OTN-XP card. This package is mandatory for datapath bring up.

Determine software version

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

NCS 1001

```
RP/0/RP0/CPU0:ios#sh version
Tue Dec 16 11:44:39.681 UTC
Cisco IOS XR Software, Version 25.4.1
Copyright (c) 2013-2025 by Cisco Systems, Inc.
Build Information:
Built By     : swtools
Built On     : Mon Dec 15 14:07:42 PST 2025
Built Host   : iox-lnx-048
Workspace    : /auto/srcarchive12/prod/25.4.1/ncs1001/ws
Version      : 25.4.1
Location     : /opt/cisco/XR/packages/
Label        : 25.4.1
cisco NCS-1001 () processor
System uptime is 49 minutes
```

NCS 1004

```
RP/RP/0/RP0/CPU0:BH_SIT11#sh version
Cisco IOS XR Software, Version 25.4.1
Copyright (c) 2013-2025 by Cisco Systems, Inc.
Build Information:
Built By     : swtools
Built On     : Mon Dec 15 14:08:05 PST 2025
Built Host   : iox-lnx-114
Workspace    : /auto/srcarchive12/prod/25.4.1/ncs1004/ws
Version      : 25.4.1
```

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```
Location     : /opt/cisco/XR/packages/
Label        : 25.4.1
cisco NCS-1004 () processor
System uptime is 12 minutes
```

NCS 1010

```
RP/0/RP0/CPU0:ios#show version
Tue Dec 16 12:30:27.212 IST
Cisco IOS XR Software, Version 25.4.1 LNT
Copyright (c) 2013-2025 by Cisco Systems, Inc.
Build Information:
Built By     : cisco
Built On     : Mon Dec 15 20:55:37 UTC 2025
Build Host   : iox-lnx-119
Workspace    : /auto/srcarchive12/prod/25.4.1/ncs1010/ws/
Version      : 25.4.1
Label        : 25.4.1
cisco NCS1010 (C3758 @ 2.20GHz)
cisco NCS1010-SA (C3758 @ 2.20GHz) processor with 32GB of memory
SITE-11 uptime is 1 hour, 24 minutes
NCS 1010 - Chassis
```

NCS 1014

```
RP/0/RP0/CPU0:cvt-kepler.1#show version
Tue Dec 16 14:30:30.132 IST
Cisco IOS XR Software, Version 25.4.1 LNT
Copyright (c) 2013-2025 by Cisco Systems, Inc.
Build Information:
Built By     : swtools
Built On     : Mon Dec 15 21:28:54 UTC 2025
Build Host   : iox-lnx-119
Workspace    : /auto/srcarchive12/prod/25.4.1/ncs1010/ws
Version      : 25.4.1
Label        : 25.4.1-v1
cisco NCS1010 (C3758R @ 2.40GHz)
cisco NCS1014 (C3758R @ 2.40GHz) processor with 32GB of memory
cvt-kepler.1 uptime is 1 hour, 50 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 Programmed version must be the same.

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

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NCS 1001

```
RP/0/RP0/CPU0:ios#sh hw-module fpd
Tue Dec 16 11:45:41.914 UTC
Auto-upgrade:Disabled
```

						FPD Versions	
						==========	
Location	Card type	HWver	FPD device	ATR	Status	Running	Programd
0/0	NCS1001-K9	0.1	Control_BKP	B	CURRENT		1.10
0/0	NCS1001-K9	0.1	Control_FPGA		CURRENT	1.10	1.10
0/1	NCS1K-EDFA	0.0	FW_EDFAv2		CURRENT	0.45	0.45
0/2	NCS1K-PSM	0.0	FW_PSMv2		CURRENT	0.16	0.16
0/3	NCS1K-EDFA	0.0	FW_EDFAv1		CURRENT	1.61	1.61
0/RP0	NCS1K-CNTLR2	0.1	BIOS_Backup	BS	CURRENT		15.10
0/RP0	NCS1K-CNTLR2	0.1	BIOS_Primary	S	CURRENT	15.40	15.40
0/RP0	NCS1K-CNTLR2	0.1	Daisy_Duke_BKP	BS	CURRENT		0.20
0/RP0	NCS1K-CNTLR2	0.1	Daisy_Duke_FPGA	S	CURRENT	0.20	0.20

NCS 1004

```
RP/0/RP0/CPU0:ios#sh hw-module fpd
Auto-upgrade:Enabled
```

						FPD Versions	
						==========	
Location	Card type	HWver	FPD device	ATR	Status	Running	Programd
0/0	NCS1K4-OTN-XPL	3.0	LC_CFP2_PORT_0		CURRENT	1.46	1.46
0/0	NCS1K4-OTN-XPL	3.0	LC_CFP2_PORT_1		CURRENT	1.46	1.46
0/0	NCS1K4-OTN-XPL	3.0	LC_CPU_MOD_FW		CURRENT	254.100	254.100
0/0	NCS1K4-OTN-XPL	2.0	LC_DP_MOD_FW		CURRENT	14.10	14.10
0/1	NCS1K4-OTN-XP	2.0	LC_CFP2_PORT_0		CURRENT	1.80	1.80
0/1	NCS1K4-OTN-XP	2.0	LC_CFP2_PORT_1		CURRENT	1.80	1.80
0/1	NCS1K4-OTN-XP	3.0	LC_CPU_MOD_FW		CURRENT	254.100	254.100
0/1	NCS1K4-OTN-XP	4.0	LC_DP_MOD_FW		CURRENT	7.10	7.10
0/RP0	NCS1K4-CNTLR-K9	7.0	CSB_IMG	S	CURRENT	0.200	0.200
0/RP0	NCS1K4-CNTLR-K9	7.0	TAM_FW		CURRENT	36.08	36.08
0/RP0	NCS1K4-CNTLR-K9	1.14	BIOS	S	CURRENT	7.20	7.20
0/RP0	NCS1K4-CNTLR-K9	5.4	BP_SSD		CURRENT	75.00	75.00
0/RP0	NCS1K4-CNTLR-K9	7.0	CPU_FPGA		CURRENT	1.14	1.14
0/RP0	NCS1K4-CNTLR-K9	5.4	CPU_SSD		CURRENT	75.00	75.00
0/RP0	NCS1K4-CNTLR-K9	3.18	POWMAN_CFG		CURRENT	3.40	3.40
0/PM1	NCS1K4-AC-PSU	0.1	PO-PriMCU		CURRENT	2.70	2.70
0/SC0	NCS1004	2.0	BP_FPGA		CURRENT	1.25	1.25
0/SC0	NCS1004	2.0	XGE_FLASH		CURRENT	18.04	18.04

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RP/0/RP0/CPU0:BH_SIT11#

NCS 1010

```
RP/0/RP0/CPU0:ios#show hw-module fpd
Tue Dec 16 12:12:01.828 IST
Auto-upgrade:Enabled,PM excluded
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
-------------------------------------------------------------------------------------------
-----
0/RP0/CPU0 NCS1010-CNTLR-K9      1.11  ADMConfig            CURRENT      3.40     3.40
NOT REQ
0/RP0/CPU0 NCS1010-CNTLR-K9      1.11  BIOS              S  CURRENT      5.60     5.60
0/RP0
0/RP0/CPU0 NCS1010-CNTLR-K9      1.11  BIOS-Golden       BS CURRENT               4.10
0/RP0
0/RP0/CPU0 NCS1010-CNTLR-K9      1.11  CpuFpga           S  CURRENT      1.13     1.13
0/RP0
0/RP0/CPU0 NCS1010-CNTLR-K9      1.11  CpuFpgaGolden     BS CURRENT               1.01
0/RP0
0/RP0/CPU0 NCS1010-CNTLR-K9      1.11  SsdMicron5300     S  CURRENT      0.01     0.01
0/RP0
0/RP0/CPU0 NCS1010-CNTLR-K9      1.11  TamFw             S  CURRENT      6.13     6.13
0/RP0
0/RP0/CPU0 NCS1010-CNTLR-K9      1.11  TamFwGolden       BS CURRENT               6.11
0/RP0
0/PM0      NCS1010-AC-PSU        1.0   AP-PriMCU            CURRENT      1.03     1.03
NOT REQ
0/PM0      NCS1010-AC-PSU        1.0   AP-SecMCU            CURRENT      2.01     2.01
NOT REQ
0/PM1      NCS1010-AC-PSU        1.0   AP-PriMCU            CURRENT      1.03     1.03
NOT REQ
0/PM1      NCS1010-AC-PSU        1.0   AP-SecMCU            CURRENT      2.01     2.01
NOT REQ
0/0/NXR0   NCS1K-OLT-C           1.0   OLT               S  CURRENT      3.44     3.44
NOT REQ
0/Rack     NCS1010-SA            2.1   EITU-ADMConfig       CURRENT      2.10     2.10
NOT REQ
0/Rack     NCS1010-SA            2.1   IoFpga            S  CURRENT      1.27     1.27
NOT REQ
0/Rack     NCS1010-SA            2.1   IoFpgaGolden      BS CURRENT               1.01
NOT REQ
0/Rack     NCS1010-SA            2.1   SsdMicron5300     S  CURRENT      0.01     0.01
0/Rack
```

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```
0/1         NCS1K-BRK-24           1.0    BRK-24            S    CURRENT      2.08     2.08
NOT REQ
0/3         NCS1K-BRK-8            1.0    BRK-8             S    CURRENT      2.08     2.08
NOT REQ
```

NCS 1014

```
RP/0/RP0/CPU0:ios#show hw-module fpd
Tue Dec 16 14:30:35.145 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
-------------------------------------------------------------------------------------------
-----
0/RP0/CPU0 NCS1K14-CNTLR-K9      1.0   ADM-DB               CURRENT      2.10     2.10
NOT REQ
0/RP0/CPU0 NCS1K14-CNTLR-K9      1.0   ADM-MB               CURRENT      2.30     2.30
NOT REQ
0/RP0/CPU0 NCS1K14-CNTLR-K9      1.0   BIOS              S  CURRENT      5.60     5.60
0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      1.0   BIOS-Golden       BS CURRENT               4.70
0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      1.0   CpuFpga           S  CURRENT      1.17     1.17
0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      1.0   CpuFpgaGolden     BS CURRENT               1.09
0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      1.0   SsdMicron5300     S  CURRENT      0.01     0.01
0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      1.0   TamFw             S  CURRENT      9.04     9.04
0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      1.0   TamFwGolden       BS CURRENT               9.04
0/RP0
0/PM0      NCS1K4-AC-PSU-2       0.1   PO-PriMCU            CURRENT      1.03     1.03
NOT REQ
0/PM0      NCS1K4-AC-PSU-2       0.1   PO-SecMCU            CURRENT      1.05     1.05
NOT REQ
0/PM1      NCS1K4-AC-PSU-2       0.1   PO-PriMCU            CURRENT      1.03     1.03
NOT REQ
0/PM1      NCS1K4-AC-PSU-2       0.1   PO-SecMCU            CURRENT      1.05     1.05
NOT REQ
0/0/NXR0   NCS1K14-2.4T-X-K9     1.0   CpuModFw          S  CURRENT    254.100  254.100
NOT REQ
0/1/NXR0   NCS1K14-2.4T-X-K9     1.0   CpuModFw          S  CURRENT    254.100  254.100
NOT REQ
0/2/NXR0   NCS1K14-2.4T-X-K9     1.0   CpuModFw          S  CURRENT    254.100  254.100
NOT REQ
```

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```
0/3/NXR0    NCS1K14-2.4T-X-K9      1.0    CpuModFw          S    CURRENT    254.100  254.100
NOT REQ
0/Rack      NCS1014                0.1    ADM-CHASSIS            CURRENT      0.21     0.21
NOT REQ
0/Rack      NCS1014                0.1    IoFpga            S    CURRENT      2.26     2.26
NOT REQ
0/Rack      NCS1014                0.1    IoFpgaGolden      BS   CURRENT               1.05
NOT REQ
0/Rack      NCS1014                0.1    SsdIntelSC2KB     S    CURRENT      1.30     1.30
0/Rack
```

Related resources

These links provide access to related documents and resources associated with this release:

- For the supported upgrade and downgrade paths, see Software Upgrade and Downgrade Matrix.
- For the complete list of documentation for the release, see Cisco Network Convergence System 1000 Series.

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