Release Notes for Cisco NCS 1000 Series, IOS XR Release 24.4.1

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What's new in Cisco NCS 1000, IOS XR Release 24.4.1

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

The following table lists the features added in the NCS 1014 guides:

Feature	Description
Hardware Installation	
NCS1K4-1.2T-L-K9 Line Card Support	The NCS 1014 chassis now supports the **NCS1K4-1.2T-L-K9** line card. This card is the licensed version of the NCS 1004 1.2T line card and offers a "pay as you grow" model. This card provides 4x 100G of unencrypted client capacity on day one. The licensed version of the card allows you to • purchase 100G incremental licenses to expand up to 12x 100G capacity for each card. • set line rates from 100 to 600G. • deploy long haul and subsea licenses in NCS 1014.
System Setup and Software Installation	
Automated File Management System	The new Automated File Management System is designed for efficient file handling on the NCS 1014 node. This system automatically archives older files and removes them from local nodes to free up valuable SSD space. It manages the following types of files: • System-generated log files • Showtech-related residual files
Configuration	

Feature	Description
Last Link Flap Detection for Transponder Controllers	This feature introduces the detection of the last link flap for various transponder controllers. It provides the elapsed time since the occurrence of the last flap for each controller in the `show controllers` output. Link flap refers to the state transition of controllers from UP state to another state or from other states to UP state. This information enables network administrators to effectively monitor and troubleshoot signal stability and performance across the network Parameter added: • **Last Link Flap** *value*
Loopback enhancements	The internal and line loopback configurations on the Ethernet controller have been enhanced to activate a loop-and-drop mechanism. This mechanism prevents traffic from flowing in the opposite direction of the loopback. This feature is supported on these cards: NCS1K14-2.4T-K9, NCS1K14-2.4T-X-K9, and NCS1K4-QXP-K9. For the NCS1K4-1.2T-K9, only internal loop-and-drop is supported. In internal loopback, this is achieved by shutting down the transmit power at the client Ethernet controller. In line loopback, a local fault alarm signal is inserted toward the trunk. This enhancement is particularly useful when using the PRBS pattern, as it prevents unnecessary PRBS traffic from causing unwanted events and alarms at the router ports.
New PRBS Counters on Ethernet Controllers	The new Pseudo-Random Binary Sequence (PRBS) counters on Ethernet controllers collects statistics in a cumulative manner. The output of the `show controllers` *`controller-type R/S/I/P`* command now includes these counters: • Configured Time • First Lock Established Time. • Lock Time (in seconds) • Bit Errors • Lock Found Count • Lock the Lost Count • Result

Feature	Description
Performance Monitoring Enhancements	You can now view historical Performance Monitoring (PM) parameters for the past 1 to 7 days for the 24-hour interval on these controllers: • CoherentDSP • Ethernet • ODU-layer This feature enhances data collection directly from the equipment, providing a comprehensive view of performance over time. Parameter added: • **bucket** *value*
Data Models	
gNOI for BERT	Extensible Manageability Services (EMS) gNOI supports Bit Error Rate Testing (BERT) operations on NCS 1014 for the following remote procedure calls (RPCs): • StartBERT • StopBERT • GetBERTResults gNOI for BERT is a vendor agnostic open configuration method of enabling and testing network links through the Pseudo Random Binary Sequence (PRBS) feature.

Important notes

Starting from the Release 24.4.1, the use of Type 7 password and Type 5 secret are deprecated due to security concerns. The deprecation process commences from the Release 24.4.1. We expect the full deprecation in a future release. We recommend using the default option, which is Type 10 secret. For more information on this deprecation, see the section Deprecation of Type 7 password and Type 5 secret in System Setup and Software Installation Guide for Cisco NCS 1014, IOS XR Releases 24.x.x.

Release packages

Packages for Cisco NCS 1014

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

Table 1: Packages for Cisco NCS 1014

Feature Set	Filename	Description
Composite Package		

Cisco IOS XR Core Bundle + Manageability Packages	ncs1010-x64-24.4.1.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 Installable Packages		
Cisco IOS XR Telnet Packages	xr-telnet-24.4.1v1.0.0-1.x86_64.rpm xr-telnet-ncs1014-24.4.1v1.0.0-1.x86_64.rpm	Install these packages to support Telnet.
Cisco IOS XR Cisco Discovery Protocol (CDP) Packages	xr-cdp-24.4.1v1.0.0-1.x86_64.rpm xr-cdp-ncs1014-24.4.1v1.0.0-1.x86_64.rpm xr-cdp-f544c7c7d37890ec-24.4.1v1.0.0-1.x86_64.rpm xr-telnet-f544c7c7d37890ec-24.4.1v1.0.0-1.x86_64.rpm	Install these packages to support CDP.

Caveats

Open Caveats

NCS 1014

The following table lists the open caveats for NCS 1014:

Identifier	Headline
CSCwm35724	showtech pmengine has incomplete history
CSCwm76177	fourHundredGigEctrlr shows wrong ether util even with constant load
CSCwm84692	Observing traffic not recovered post injecting LOS while line loop configured
CSCwm90586	History data is not collected properly after downgrade/upgrade
CSCwn17770	Inactive FW version mismatch between flexo client and controller optics dump
CSCwn24382	Odu-flex controllers show incorrect otn pm
CSCwn38856	NCS1K14-2.4T-K9 card fpd didn't upgrade after SU from 7.11.1-v2 to 24.4.1
CSCwn40703	CIM8 Prefec Ber 1.7e-1 with LOF but Q margin is showing 2 dB
CSCwn42494	On a fully loaded NCS 1014, slot 2 did not discover all the transceivers. Traffic was down.
CSCwn50223	Yang model pmengine-oper:performance-management-history has a typo for PCS pm
CSCwn50394	ODU Signal Failure seen sometimes during frequency change operation of both end trunk port

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 https://bst.cloudapps.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 Dec 16 14:10:33.092 IST
Cisco IOS XR Software, Version 24.4.1 LNT
Copyright (c) 2013-2024 by Cisco Systems, Inc.

Build Information:
 Built By     : cisco
 Built On     : Sun Dec 15 21:50:18 UTC 2024
 Build Host   : iox-lnx-107
```

```
 Workspace    : /auto/srcarchive10/prod/24.4.1/ncs1010/ws/
 Version      : 24.4.1
 Label        : 24.4.1

cisco NCS1010 (C3758R @ 2.40GHz)
cisco NCS1014 (C3758R @ 2.40GHz) processor with 32GB of memory
sit-kep1 uptime is 8 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
Mon Dec 16 14:09:39.775 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 NCS1K14-CNTLR-K9      0.2   ADM-DB               CURRENT      2.10     2.10
    NOT REQ
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   ADM-MB               CURRENT      2.30     2.30
    NOT REQ
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   BIOS             S   CURRENT      4.80     4.80
      0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   BIOS-Golden      BS  CURRENT               4.50
      0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   CpuFpga          S   CURRENT      1.17     1.17
      0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   CpuFpgaGolden    BS  CURRENT               1.03
      0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   SsdIntelS4510    S   CURRENT     11.51    11.51
      0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   TamFw            S   CURRENT      9.04     9.04
      0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   TamFwGolden      BS  CURRENT               9.04
      0/RP0
0/PM0      NCS1K4-AC-PSU-2       1.1   PO-PriMCU            CURRENT      1.03     1.03
    NOT REQ
0/PM0      NCS1K4-AC-PSU-2       1.1   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-K9       0.1   CpuModFw         S   CURRENT    244.100  244.100
    NOT REQ
0/1/NXR0   NCS1K14-2.4T-X-K9     1.0   CpuModFw         S   CURRENT    244.100  244.100
    NOT REQ
```

```
0/3/NXR0   NCS1K14-2.4T-X-K9     1.0   CpuModFw         S   CURRENT    244.100  244.100
    NOT REQ
0/Rack     NCS1014               0.1   ADM-CHASSIS          CURRENT      0.21     0.21
    NOT REQ
0/Rack     NCS1014               0.1   IoFpga           S   CURRENT      1.19     1.19
    NOT REQ
0/Rack     NCS1014               0.1   IoFpgaGolden     BS  CURRENT               1.05
    NOT REQ
0/Rack     NCS1014               0.1   SsdIntelSC2KB    S   CURRENT      1.20     1.20
```

QXP Card

```
RP/0/RP0/CPU0:ios#show hw-module fpd
Mon Dec 16 14:09:39.775 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 NCS1K14-CNTLR-K9      0.2   ADM-DB               CURRENT      2.10     2.10
    NOT REQ
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   ADM-MB               CURRENT      2.30     2.30
    NOT REQ
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   BIOS             S   CURRENT      4.80     4.80
      0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   BIOS-Golden      BS  CURRENT               1.72
      0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   CpuFpga          S   CURRENT      1.17     1.17
      0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   CpuFpgaGolden    BS  CURRENT               0.27
      0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   SsdMicron5300    S   CURRENT      0.01     0.01
      0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   TamFw            S   CURRENT      9.04     9.04
      0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9      0.2   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         0.1   PO-PriMCU            CURRENT      2.04     2.04
    NOT REQ
0/PM1      NCS1K4-AC-PSU         0.1   PO-SecMCU            CURRENT      2.06     2.06
    NOT REQ
0/0/NXR0   NCS1K4-QXP-K9         0.2   CpuModFw         S   CURRENT    244.100  244.100
    NOT REQ
0/1/NXR0   NCS1K4-QXP-K9         0.2   CpuModFw         S   CURRENT    244.100  244.100
    NOT REQ
0/Rack     NCS1014               0.1   ADM-CHASSIS          CURRENT      0.21     0.21
    NOT REQ
0/Rack     NCS1014               0.1   IoFpga           S   CURRENT      1.19     1.19
    NOT REQ
0/Rack     NCS1014               0.1   IoFpgaGolden     BS  CURRENT               1.05
    NOT REQ
0/Rack     NCS1014               0.1   SsdIntelSC2KB    S   CURRENT      1.20     1.20
     0/Rack
```

1.2T Card

```
RP/0/RP0/CPU0:ios#show hw-module fpd
Mon Dec 16 14:09:39.775 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 NCS1K14-CNTLR-K9       0.2   ADM-DB               CURRENT      2.10     2.10
    NOT REQ
0/RP0/CPU0 NCS1K14-CNTLR-K9       0.2   ADM-MB               CURRENT      2.30     2.30
    NOT REQ
0/RP0/CPU0 NCS1K14-CNTLR-K9       0.2   BIOS              S  CURRENT      4.80     4.80
      0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9       0.2   BIOS-Golden       BS CURRENT               1.72
      0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9       0.2   CpuFpga           S  CURRENT      1.17     1.17
      0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9       0.2   CpuFpgaGolden     BS CURRENT               0.27
      0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9       0.2   SsdMicron5300     S  CURRENT      0.01     0.01
      0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9       0.2   TamFw             S  CURRENT      9.04     9.04
      0/RP0
0/RP0/CPU0 NCS1K14-CNTLR-K9       0.2   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          0.1   PO-PriMCU            CURRENT      2.04     2.04
    NOT REQ
0/PM1      NCS1K4-AC-PSU          0.1   PO-SecMCU            CURRENT      2.06     2.06
    NOT REQ
0/3/NXR0   NCS1K4-1.2T-L-K9       0.1   CpuModFw          S  CURRENT    244.100  244.100
    NOT REQ
0/3/NXR0   NCS1K4-1.2T-L-K9       0.1   OptModFw          S  CURRENT      1.38     1.38
    NOT REQ
0/Rack     NCS1014                0.1   ADM-CHASSIS          CURRENT      0.21     0.21
    NOT REQ
0/Rack     NCS1014                0.1   IoFpga            S  CURRENT      1.19     1.19
    NOT REQ
0/Rack     NCS1014                0.1   IoFpgaGolden      BS CURRENT               1.05
    NOT REQ
0/Rack     NCS1014                0.1   SsdIntelSC2KB     S  CURRENT      1.20     1.20
     0/Rack
```

Supported MIBs

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