Release Notes for Cisco NCS 1004, IOS XR Release 7.3.2

First Published: 2021-10-14

Note

Explore the Content Hub, the all new portal that offers an enhanced product documentation experience.

- Use faceted search to locate content that is most relevant to you.
- Create customized PDFs for ready reference.
- Benefit from context-based recommendations.

Get started with the Content Hub at content.cisco.com to craft a personalized documentation experience.

Do provide feedback about your experience with the Content Hub.

What's New in Cisco NCS 1004, IOS XR Release 7.3.2

Cisco is continuously enhancing the product with every release and this section covers a brief description of key features and enhancements. It also includes links to detailed documentation, where available.

Feature	Description
Configuration	
4X100GE MXP modes with QDD ZRP for OTN-XP Card	On the OTN-XP card, you can configure a single 4x100GE payload that is received over the client port as a 400GE signal over DWDM on the line side. The card improves efficiency, performance, and flexibility for customer networks allowing 4x100GE client transport over 400GE WDM wavelength.
Dynamic Host Configuration Protocol (DHCP) Client	The DHCP client enables the router interfaces to dynamically acquire the IPv4 or DHCPv4 or DHCPv6 server which is used to forward the response to the correct layer 2 address. The DHCP client ensures that configuration information reaches the correct device.
GCC Support for OTN-XP Card	The node supports a maximum of 48 GCC (GCC0 and GCC1) channels for each OTN-XP card.

Feature	Description
Hybrid Modes Using 40x10G-4x100G-MXP	With the 40x10G-4x100G-MXP muxponder mode support, you can configure the following hybrid modes: • 20x10G + 2x100G • 10x10G + 3 x 100G With the 40x10G-4x100G-MXP muxponder mode support, you have flexibility to choose a combination of 10G and 100G client rates across different OTN and Ethernet client rates.
Inverse Muxponder Configuration on OTN-XP Card	The OTN-XP card supports inverse multiplexing for 400GE client over 2x200G CFP2 trunk ports. This feature allows you to split the 400GE client signal and carry it over 2x200G trunks thereby increasing the ease of signal reachability. Commands modified: • hw-module (OTN-XP Card) • controller coherentDSP
Licensing Feature Update	Criteria for license consumption in Long Haul and Subsea networks are introduced. Long Haul (LH) and Subsea are two trunk-based license models that are implemented regardless of the line rate, in addition to the existing client-based licenses. These license models allow the user to easily track the status of licenses and software usage trends. The long-haul license is required to enable QPSK and 8QAM modes. The subsea license is required to enable BPSK and subsea specific controls such as extended chromatic dispersion, special non-linear compensation settings and so on.
Muxponder Configuration for 200G Trunk with QPSK and 8QAM Modulation	The OTN-XP card supports up to 200G trunk rate with QPSK and 8QAM modulation using CFP2. This feature enhances the signal reachability with reduced noise and can support the 50GHz network. Commands modified: • hw-module (OTN-XP Card)
Muxponder Configuration for 300G Trunk with 8QAM Modulation	The OTN-XP card supports up to 300G trunk rate with 8QAM modulation using CFP2. This feature improves the signal reachability with decreased noise. Commands modified: • hw-module (OTN-XP Card)
OC Support for AAA User	This feature allows all authorized users on XR VM to access administration data on the router through NETCONF or gRPC interface, similar to accessing the CLI. This functionality works by internally mapping the task group of the user on XR VM to a predefined group on System Admin VM. Therefore, the NETCONF and gRPC users can access the administrative information on the router even if their user profiles do not exist on System Admin VM. Command added: • **aaa authorization (System Admin-VM)**

Feature	Description
Hardware	
Pluggables Support	The QSFP-100G-DR-S pluggable is supported.
Data Models	
OC (Open Configuration) Support for Subsea Parameters	The OC (Open Configuration) support for subsea parameters is introduced. This enables the user to configure the subsea parameters using OC data models. This was defined under OC-platform as part of the vendor augmented data model.
OpenROADM	
OpenROADM 200G and 300G Configuration Support	200G and 300G data rates can be configured for MXP.
Telemetry	
gNMI Heartbeat Interval	The gNMI Heartbeat Interval feature allows you to send ON_CHANGE subscription data for each heartbeat interval regardless of change in value. This feature enables you to enhance the network management system.

Release 7.3.2 Packages

Table 1: Release 7.3.2 Packages

Feature Set	Filename	Description
Composite Package		
Cisco IOS XR Core Bundle + Manageability Package	ncs1004-iosxr-px-k9-7.3.2.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-r732.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-7.3.2-r732.x86_64.rpm (part of ncs1004-iosxr-px-k9-7.3.2.tar)	Install the ncs1004-sysadmin-otn-xp-dp-7.3.2-r732.x86_64.rpm data path FPD package on the OTN-XP card. This package is mandatory for datapath bring up.

OpenROADM	ncs1004-tp-sw-1.0.0.0-r732.rpm	Install the ncs1004-tp-sw-1.0.0.0-r732.rpm package for OpenROADM configuration.

See Install Packages.

System Requirement

At least 16 GB RAM

Caveats

Open Caveats

The following table lists the open caveats for NCS 1004:

Table 2: Open Caveats

Caveat ID Number	Description
CSCvy93645	Traffic flap observed with 10GE clients.
CSCvz27486	Loss of Synchronization after LC reload cold at 25 with QSFP28-FR-S or DR-S.
CSCvz38578	Config migration of frequency and power is not visible in show configuration commit changes.
CSCvz73400	Traffic glitch observed in post lcapp restart with encyrption.
CSCvy13197	Telemetry Syslog events are not received by telemetry client

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.

Determine Software Version

Log in to NCS 1004 and enter the **show version** command

```
RP/0/RP0/CPU0:BO-SIT9#show version
Wed Oct 13 20:14:15.984 IST
Cisco IOS XR Software, Version 7.3.2.46I
Copyright (c) 2013-2021 by Cisco Systems, Inc.

Build Information:
Built By     : ingunawa
Built On     : Sun Oct 10 04:31:30 PDT 2021
Built Host   : iox-lnx-070
Workspace    : /auto/iox-lnx-070-san1/prod/7.3.2.46I.SIT_IMAGE/ncs1004/ws
Version      : 7.3.2.46I
```

```
Location    : /opt/cisco/XR/packages/
Label       : 7.3.2.46I

cisco NCS-1004 () processor
```

Determine Firmware Support

Log in to NCS 1004 and enter the **show hw-module fpd** command:

```
RP/0/RP0/CPU0:BO-SIT9#show hw-module fpd
Wed Oct 13 20:14:20.737 IST

Auto-upgrade:Disabled
                                                            FPD Versions
                                                            ==============
Location Card type        HWver FPD device      ATR Status  Running  Programd
--------------------------------------------------------------------------------
0/0      NCS1K4-1.2T-K9   2.0   LC_CPU_MOD_FW        CURRENT  73.20    73.20
0/0      NCS1K4-1.2T-K9   1.0   LC_OPT_MOD_FW        CURRENT  1.25     1.25
0/1      NCS1K4-1.2T-K9   2.0   LC_CPU_MOD_FW        CURRENT  73.20    73.20
0/1      NCS1K4-1.2T-K9   1.0   LC_OPT_MOD_FW        CURRENT  1.25     1.25
0/2      NCS1K4-OTN-XP    3.0   LC_CPU_MOD_FW        CURRENT  73.20    73.20
0/2      NCS1K4-OTN-XP    7.0   LC_DP_MOD_FW         CURRENT  4.10     4.10
0/2      NCS1K4-OTN-XP    2.0   LC_QSFPDD_PORT_11    CURRENT  61.2013  61.2013
0/2      NCS1K4-OTN-XP    2.0   LC_QSFPDD_PORT_9     CURRENT  61.2013  61.2013
0/3      NCS1K4-OTN-XP    3.0   LC_CPU_MOD_FW        CURRENT  73.20    73.20
0/3      NCS1K4-OTN-XP    1.0   LC_DP_MOD_FW         CURRENT  4.10     4.10
0/3      NCS1K4-OTN-XP    2.0   LC_QSFPDD_PORT_9     CURRENT  61.2013  61.2013
0/RP0    NCS1K4-CNTLR-K9  4.0   CSB_IMG           S  CURRENT  0.200    0.200
0/RP0    NCS1K4-CNTLR-K9  4.0   TAM_FW               CURRENT  36.08    36.08
0/RP0    NCS1K4-CNTLR-K9  1.14  BIOS              S  CURRENT  5.06     5.06
0/RP0    NCS1K4-CNTLR-K9  4.0   CPU_FPGA             CURRENT  1.14     1.14
0/PM0    NCS1K4-AC-PSU    0.1   PO-PriMCU            NEED UPGD 2.68    2.68
0/SC0    NCS1004          2.0   BP_FPGA              CURRENT  1.25     1.25
0/SC0    NCS1004          2.0   XGE_FLASH            CURRENT  18.04    18.04
```

The above show output lists the hardware components that are supported in the current release with their status. The status of the hardware must be CURRENT; Running and Program version must be similar.

Other Important Information and References

Supported MIBs

NCS 1004 supports the following MIBs:

- CISCO-AM-SNMP-MIB

- CISCO-CONFIG-MAN-MIB

- CISCO-FLASH-MIB

- CISCO-ENTITY-REDUNDANCY-MIB

- CISCO-SYSTEM-MIB

- CISCO-ENTITY-ASSET-MIB

- EVENT-MIB

- DISMAN-EXPRESSION-MIB

- CISCO-FTP-CLIENT-MIB

- NOTIFICATION-LOG-MIB

- CISCO-RF-MIB

- RADIUS-AUTH-CLIENT-MIB

- RADIUS-ACC-CLIENT-MIB

- IEEE8023-LAG-MIB

- CISCO-TCP-MIB

- UDP-MIB

- CISCO-BULK-FILE-MIB

- CISCO-CONTEXT-MAPPING-MIB

- CISCO-OTN-IF-MIB

- CISCO-ENHANCED-MEMPOOL-MIB

- CISCO-PROCESS-MIB

- CISCO-SYSLOG-MIB

- ENTITY-MIB

- CISCO-ENTITY-FRU-CONTROL-MIB

- CISCO-IF-EXTENSION-MIB

- RMON-MIB

- HC-RMON-MIB

- CISCO-OPTICAL-MIB

- CISCO-ENTITY-SENSOR-MIB

- LLDP-MIB

- CISCO-ALARM-MIB