Release Notes for Cisco NCS 1001, IOS XR Release 7.1.1

First Published: 2020-01-14

Last Modified: 2020-01-16

Network Convergence System 1001

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The Cisco Network Convergence System (NCS) 1001 is a 1 RU chassis that addresses the growing bandwidth needs of data center DWDM applications. It provides a DWDM line system that is optimized for data center environments and is optimized for point-to-point applications at maximum capacity. Cisco NCS 1001 supports up to three optical modules. The modules can be amplifiers, OTDR, or protection switching modules.

NCS 1001 has the following components:

- Four removable fans.
- Two removable AC or DC power supply modules (PSU).
- Three slots for optical modules. The Optical Amplifier Module (NCS1K-EDFA), Protection Switching Module (NCS1K-PSM), and Optical Time Domain Reflectometer Module (NCS1K-OTDR) can be inserted in these slots.

For all the versions of the Release Notes for Cisco NCS 1001, see the Release Notes URL.

Software Features Introduced in Release 7.1.1

Note Before you dive into this release's features, we invite you to content.cisco.com to experience the features of the Cisco Content Hub.Here, you can, among other things:

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Periodic OTDR Scans

OTDR scan is performed each time after the elapse of the periodic scan time. The range of periodic scan time is 30 to 600000 minutes.

For more information, see the Configure OTDR Module chapter in the *Configuration Guide for Cisco NCS 1001, IOS XR Release 7.1.1*

OTDR Measurement in Automatic Mode Based on Events

The OTDR measurement in automatic mode is automatically started between two nodes on both the TX and RX directions under the following events:

- When a LOS alarm is raised on the monitored fiber span and the OTDR automatic measurement is enabled.
- When there is a difference between the current value of span loss and the baseline value of span loss.

For more information, see the Configure OTDR Module chapter in the *Configuration Guide for Cisco NCS 1001, IOS XR Release 7.1.1*

Gridless OCM Enhancement

The Gridless OCM (Optical Channel Monitor) support feature is enhanced to support transponders with channel width between 50GHz to 800GHz in multiples of 25GHz.

For more information, see the Configure Optical Modules chapter - Gridless OCM Support section in the *Configuration Guide for Cisco NCS 1001, IOS XR Release 7.1.1*

LLDP Support on Management Interface

It is possible to enable LLDP on system management interfaces (0/RP0/CPU0/0) and (0/RP0/CPU0/1) to obtain neighborship information. This information about neighbors can be used to learn about the neighbors and in turn the topology of the devices for Operations, Administration, and Maintenance (OAM) purposes.

For more information, see the Configure Management Interfaces chapter - Link Layer Discovery Protocol (LLDP) Support on Management Interface section in the *Configuration Guide for Cisco NCS 1001, IOS XR Release 7.1.1*

Automated OTS-OCH Thresholds on Amplifier

The automated OTS-OCH thresholds on amplifier feature can be enabled or disabled on each EDFA (Erbium Doped Fiber Amplifier) card equipped on the node itself.

For more information, see the Configure Optical Modules chapter - Automated OTS-OCH Thresholds on Amplifier section in the *Configuration Guide for Cisco NCS 1001, IOS XR Release 7.1.1*

Release Packages for Cisco NCS 1001

Feature Set	Filename	Description
Composite Package		
Cisco IOS XR Core Bundle + Manageability Package	ncs1001-iosxr-px-k9-7.1.1.tar	Contains required core packages, including OS, Admin, Base, Forwarding, SNMP Agent, FPD, and Alarm Correlation and Netconf-yang, Telemetry, Extensible Markup Language (XML) Parser, HTTP server packages.
Individually-Installable Optional Packages		
Cisco IOS XR Security Package	ncs1001-k9sec-1.0.0.0-r711.x86_64.rpm	Support for Encryption, Decryption, IP Security (IPSec), Secure Shell (SSH), Secure Socket Layer (SSL), and Public-key infrastructure (PKI).

System Requirement

Memory Configuration

At least 16 GB RAM

Supported Hardware

For a complete list of supported optics, hardware and ordering information, see the data sheet.

See the *Hardware Installation Guide* for more information about installation.

Supported MIBs

The following MIBs are supported in NCS 1001.

- CISCO-OPTICAL-OTS-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
- CISCO-TCP-MIB
- UDP-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
- CISCO-OPTICAL-MIB
- CISCO-ENTITY-SENSOR-MIB

Upgrade Notes

Please read the following before upgrading the software to R7.1.1 to avoid firmware corruption.

- **Disable auto FPD upgrade before upgrading the software from R6.3.x and R6.5.x to R7.0.1and R7.1.1**

Note The BIOS and Daisyduke FPD upgrade from R6.3.x and R6.5.x to R7.1.1 must be executed under admin by the following command:

```
sysadmin-vm:0_RP0#upgrade hw-module location 0/RP0 fpd all
```

Determine Software Version

Log in to NCS 1001 and enter the **show version** command:

```
RP/0/RP0/CPU0:ios#show version
Mon Jan 27 15:52:01.424 UTC
Cisco IOS XR Software, Version 7.1.1
Copyright (c) 2013-2020 by Cisco Systems, Inc.

Build Information:
Built By     : deenayak
Built On     : Mon Jan 27 01:19:52 PST 2020
Built Host   : iox-lnx-071
Workspace    : /auto/srcarchive15/prod/7.1.1/ncs1001/ws
Version      : 7.1.1
Location     : /opt/cisco/XR/packages/
Label        : 7.1.1
cisco NCS-1001 () processor
```

Determine Firmware Support

Log in to NCS 1001 and enter the **show hw-module fpd** command:

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; Running and Programed version must be the same.

The following shows the output of **show hw-module fpd** command for NCS 1001 with EDFA (slot 1 and 3) and PSM (slot 2) of vendor 1

```
RP/0/RP0/CPU0:ios#show hw-module fpd
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_EDFAv1            CURRENT    1.56    1.56
0/2        NCS1K-PSM              0.0   FW_PSMv1             CURRENT    1.51    1.51
0/3        NCS1K-EDFA             0.0   FW_EDFAv1            CURRENT    1.56    1.56
0/RP0      NCS1K-CNTLR2           0.1   BIOS_Backup      BS  CURRENT          14.60
0/RP0      NCS1K-CNTLR2           0.1   BIOS_Primary      S  CURRENT   14.60  14.60
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
```

The following shows the output of **show hw-module fpd** command for NCS 1001 with EDFA (slot 1 and 3) and PSM (slot 2) of vendor 2

```
RP/0/RP0/CPU0:150#show hw-module fpd
Tue Jan 14 12:31:57.585 CET
                                                                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    0.40   0.40
0/2        NCS1K-PSM              0.0   FW_PSMv2             CURRENT    0.16   0.16
0/3        NCS1K-EDFA             0.0   FW_EDFAv2            CURRENT    0.40   0.40
0/RP0      NCS1K-CNTLR2           0.1   BIOS_Backup      BS  CURRENT          14.60
0/RP0      NCS1K-CNTLR2           0.1   BIOS_Primary      S  CURRENT   14.60  14.60
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
```

The following shows the output of **show hw-module fpd** command with OTDR card in slot 1.

```
RP/0/RP0/CPU0:150#show hw-module fpd
Tue Jan 14 12:31:57.585 CET
                                                                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-OTDR             0.0   FW_OTDR_p            CURRENT    6.02   6.02
0/1        NCS1K-OTDR             0.0   FW_OTDR_s            CURRENT    1.51   1.51
0/2        NCS1K-PSM              0.0   FW_PSMv2             CURRENT    0.16   0.16
0/3        NCS1K-EDFA             0.0   FW_EDFAv2            CURRENT    0.40   0.40
0/RP0      NCS1K-CNTLR2           0.1   BIOS_Backup      BS  CURRENT          14.60
0/RP0      NCS1K-CNTLR2           0.1   BIOS_Primary      S  CURRENT   14.60  14.60
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
```

Open Caveats for NCS 1001

Table 1: Caveats for 7.1.1

Caveat ID Number	Description
CSCvs17144	[ncs1001] Serial port of the controller becomes unusable.
CSCvs48432	[ncs1001] Successful IPv6 ping even after disabling IPv6 .

Related Documentation

The most current Cisco NCS 1000 series documentation is located at the following URL:

https://www.cisco.com/c/en/us/support/optical-networking/network-convergence-system-1000-series/series.html