Introduction

This document provides information about the IOS XE software release for the Cisco NCS 4201 and Cisco NCS 4202 beginning with Cisco IOS XE Release 3.18SP.

Cisco NCS 4201 and Cisco NCS 4202 Overview

The Cisco NCS 4201 and NCS 4202 Network Convergence Systems are full-featured, compact one-RU high converged access platforms designed for the cost-effective delivery of TDM to IP or MPLS migration services. These temperature-hardened, high-throughput, small-form-factor, low-power-consumption systems are optimized for circuit emulation (CEM) and business applications. NCS 4201 and NCS 4202 chassis allow service providers to deliver dense scale in a compact form factor and unmatched CEM and Carrier Ethernet (CE) capabilities. They also provide a comprehensive and scalable feature set, supporting both Layer 2 VPN (L2VPN) and Layer 3 VPN (L3VPN) services in a compact package .

For more information on the Cisco NCS 4201 Chassis, see the Cisco NCS 4201 Hardware Installation Guide.

For more information on the Cisco NCS 4202 Chassis, see the Cisco NCS 4202 Hardware Installation Guide.

Feature Navigator

You can use Cisco Feature Navigator to find information about feature, platform, and software image support. To access Cisco Feature Navigator, go to http://www.cisco.com/go/cfn. An account on cisco.com is not required.

Hardware Supported

NCS4201 is a fixed router and does not have any field replaceable units.

The following table lists the hardware supported for Cisco NCS 4202 chassis.

Chassis	Supported Interface Modules	Part Numbers
NCS 4202	8 port T1/E1 CEM Interface Module	NCS4200-8E1T1-CE
	1 port OC-48/STM-16 or 4 port OC-12/OC-3 / STM-1/STM-4 + 12 ports T1/E1 + 4 ports T3/E3	NCS4200-3GMS
	8-Port 1GE RJ45 and 1-Port 10GE SFP+ module	NCS4200-1T8LR-PS

Determining the Software Version

The following are HoFPGA versions bundled in the IOS for 17.9.1 release:

- NCS4201—0X0004001b (15.6(56r)S)
- NCS4202—0X00040009 (15.6(54r)S)
  - BFD—0X00040009
  - Netflow—0X00020008

The following are HoFPGA versions bundled in the IOS for 17.9.2a release:

- NCS4201—0X0004001b (15.6(56r)S)
- NCS4202—0X00040009 (15.6(54r)S)
  - BFD—0X00040009
  - Netflow—0X00020008

The following are HoFPGA versions bundled in the IOS for 17.9.3 release:

- NCS4201—0X0004001b (15.6(56r)S)
- NCS4202—0X00040009 (15.6(54r)S)
  - BFD—0X00040009
  - Netflow—0X00020008

The following are HoFPGA versions bundled in the IOS for 17.9.4 release:

- NCS4201—0X0004001b (15.6(56r)S)
- NCS4202—0X00040009 (15.6(54r)S)
  - BFD—0X00040009
  - Netflow—0X00020008

The following are HoFPGA versions bundled in the IOS for 17.9.5a release:

- NCS4201—0X0004001b (15.6(56r)S)
- NCS4202—0X00040009 (15.6(54r)S)
  - BFD—0X00040009
  - Netflow—0X00020008

The following are HoFPGA versions bundled in the IOS for 17.9.6 release:

- NCS4201—0X0004001b (15.6(56r)S)
- NCS4202—0X00040009 (15.6(54r)S)
  - BFD—0X00040009
  - Netflow—0X00020008

Upgrading to a New Software Release

Only the latest consolidated packages can be downloaded from Cisco.com; users who want to run the router using individual subpackages must first download the image from Cisco.com and extract the individual subpackages from the consolidated package.

For information about upgrading to a new software release, see the Upgrading the Software on the Cisco NCS 4200 Series Routers .

Upgrading the FPD Firmware

FPD Firmware packages are bundled with the software package. FPD upgrade is automatically performed ont the router.

If you like to manually change the FPD Firmware software, use the **upgrade hw-module subslot 0/0 fpd bundle** to perform FPD frmware upgrade.

Bundled FPGA Versions

The following are HoFPGA versions bundled in the IOS for 17.9.1 release:

- NCS4201—0X0004001b (15.6(56r)S)
- NCS4202—0X00040009 (15.6(54r)S)
  - BFD—0X00040009
  - Netflow—0X00020008

The following are HoFPGA versions bundled in the IOS for 17.9.2a release:

- NCS4201—0X0004001b (15.6(56r)S)
- NCS4202—0X00040009 (15.6(54r)S)

- BFD—0X00040009
- Netflow—0X00020008

The following are HoFPGA versions bundled in the IOS for 17.9.3 release:

- NCS4201—0X0004001b (15.6(56r)S)
- NCS4202—0X00040009 (15.6(54r)S)
  - BFD—0X00040009
  - Netflow—0X00020008

The following are HoFPGA versions bundled in the IOS for 17.9.4a release:

- NCS4201—0X0004001b (15.6(56r)S)
- NCS4202—0X00040009 (15.6(54r)S)
  - BFD—0X00040009
  - Netflow—0X00020008

The following are HoFPGA versions bundled in the IOS for 17.9.5a release:

- NCS4201—0X0004001b (15.6(56r)S)
- NCS4202—0X00040009 (15.6(54r)S)
  - BFD—0X00040009
  - Netflow—0X00020008

The following are HoFPGA versions bundled in the IOS for 17.9.6 release:

- NCS4201—0X0004001b (15.6(56r)S)
- NCS4202—0X00040009 (15.6(54r)S)
  - BFD—0X00040009
  - Netflow—0X00020008

Limitations and Restrictions on the Cisco NCS 4201 and Cisco NCS 4202 Series

Note The error message "PLATFORM-1-NOSPACE: SD bootflash : no space alarm assert" may occur in the following scenarios:

- Any sector of SD Card gets corrupted
- Improper shut down of router
- power outage.

This issue is observed on platforms which use EXT2 file systems.

We recommend performing a reload of the router. As a result, above alarm will not be seen during the next reload due to FSCK(file systems check) execution.

However, If the error persists after a router reload, we recommend to format the bootflash or FSCK manually from IOS.

- Embedded Packet Capture (EPC) is not supported on NCS 4200 routers.
- The **default** *command-name*command is used to default the parameters under that interface. However, when speed is configured on the interface, the following error is displayed:

```
Speed is configured. Remove speed configuration before enabling auto-negotiation
```

- For VCoP, only SFP-T3F-SATOP-I is supported.
- Virtual services should be deactivated and uninstalled before performing replace operations.
- IPSec is not supported on the Cisco NCS 4201 and Cisco NCS 4202 routers.
- On Cisco NCS 4202 Series, the following restrictions apply for IPSec:
  - Interface naming is from right to left. For more information, see the Cisco NCS 4200 Series Software Configuration Guide, Cisco IOS XE 17.
  - Packet size greater than 1460 is not supported over IPsec Tunnel.
  - Minimal traffic drop might be seen for a moment when higher rate traffic is sent through the IPsec tunnels for the first time.
  - IPsec is only supported for TCP and UDP and is not supported for SCTP.
- One Ternary Content-Addressable Memory (TCAM) entry is utilized for Segment Routing Performance Measurement. This is required for the hardware timestamping to function.
- Before installing the Cisco IOS XE Amsterdam 17.3.1, you *must* upgrade the ROMMON to version 15_6_43r_s or higher to avoid bootup failure. This is applicable to Cisco NCS 4202 routers. This workaround is not applicable to devices installed with ROMMON version 15.6(9r)S.

- While performing an auto upgrade of ROMMON, only primary partition is upgraded. Use the **upgrade rom-mon filename** command to upgrade the secondary partition of the ROMMON. However, the router can be reloaded during the next planned reload to complete the secondary ROMMON upgrade.
- For Cisco IOS XE Amsterdam 17.3.x , a minimum diskspace of 2 MB is required in the boot flash memory file system for a successful ROMMON auto upgrade process. For a diskspace lesser than 2 MB, ROMMON auto upgrade fails and the router reboots.
- Some router models are not fully compliant with all IETF guidelines as exemplified by running the pyang tool with the lintflag. The errors and warnings exhibited by running the pyang tool with the lint flag are currently non-critical as they do not impact the semantic of the models or prevent the models from being used as part of the toolchains. A script is provided, **check-models.sh**, which runs pyang with lint validation enabled, but ignoring certain errors. This allows the developer to determine what issues may be present.

  As part of the model validation for this Cisco IOS XE Amsterdam 17.3.1 release, "LEAFREF_IDENTIFIER_NOT_FOUND" and "STRICT_XPATH_FUNCTIONS" error types are ignored.
- Starting with Cisco IOS XE Bengaluru Release 17.5.1, if IPv6 Global IP is configured as the BFD peer, and if the interface goes down, a VRRP flap may occur. This may occur because, VRRP works on the basis of Link-local IP and not global IP. As a result, VRRP flaps on the previously backed up device and prints a DAD message.