



Release Notes for Cisco NCS 520 Series Ethernet Access Device, Cisco IOS XE Dublin 17.12.x

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CHAPTER 1

Cisco NCS 520 Series Ethernet Access Device Overview

The Cisco NCS 520 Series Ethernet Access Device is a family of low cost, fixed Carrier Ethernet Network Interface Devices (NID) and a switch that is targeted to be the next generation replacement of the Cisco ME 3400 series Access Switches. The Cisco NCS 520 Series Ethernet Access Device adds 10G NID and low-cost MBH switch to the existing Service Provider Access portfolio, with the following features:

- MEF CE 3.0 compliant
- Premium SKUs with support for extended temperature (from -40C to 65C)
- Conformal coating on the PCBAs (to be able to support installation in ventilated enclosures)

This release note contains information about the Cisco NCS 520 Series Ethernet Access Device, provides features information for these devices, hardware support, limitations and restrictions, and caveats.

This release note provides information for these variants of the Cisco NCS 520 Series Ethernet Access Device:

- N520-4G4Z-A (Base)
- N520-X-4G4Z-A (Premium)
- N520-X-4G4Z-D (Premium)
- N520-20G4Z-A (Base)
- N520-20G4Z-D (Base)
- N520-X-20G4Z-A (Premium)
- N520-X-20G4Z-D (Premium)

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Feature Navigator

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

Feature Matrix

The feature matrix lists the features supported for each platform. For more information, see the [Cisco NCS 520 Ethernet Access Devices Feature Compatibility Matrix](#).

Software Licensing Overview

The Cisco NCS 520 Series Ethernet Access Device supports the following types of licenses:

- Port Licensing—Port Upgrade license is available as a "Pay as you Grow" model.
 - 10G upgrade license
 - 1G upgrade license
- Metro Access (default)

The following method is used to activate the above licenses:

- Cisco Software Licensing—The Cisco Software License Activation feature is a set of processes and components to activate Cisco software feature sets by obtaining and validating fee-based Cisco software licenses.



Note Licenses that are generated by the Cisco Software Licensing are tied to the UDI of the chassis and a corresponding watchtower device certificate (WDC) is stored in the system.

The following features are supported for the software licenses:

- QoS, with deep buffers and hierarchical QoS (HQOS)
- Layer 2: 802.1D, 802.1Q
- Ethernet Virtual Circuit (EVC)
- Ethernet OAM (802.11g, 802.3ah)
- IPv4 host connectivity
- IP Access License

Smart Licensing

If you are using Cisco IOS XE Bengaluru 17.6.1 or an earlier release version, Smart Licensing is not enabled by default. To enable Smart Licensing, see [Software Activation Configuration Guide \(Cisco NCS 520 Series\)](#).

Upgrade to Cisco IOS XE Dublin 17.12.x

This section explains the procedure to upgrade the Cisco NCS 520 Series Ethernet Access Device from Cisco IOS XE Fuji 16.9.x to Cisco IOS XE Gibraltar 16.12.x or later versions.

ROMMON version 1.5 is backward compatible. The backward compatibility of different ROMMON versions with IOS XE versions is in the following table:

Supported Cisco IOS XE release	Supported ROMMON Version
Cisco IOS XE Fuji 16.8.x Cisco IOS XE Fuji 16.9.x Cisco IOS XE Gibraltar 16.11.x	1.2
Cisco IOS XE Fuji 16.9.4 and later Cisco IOS XE Gibraltar 16.11.2 and later Cisco IOS XE Gibraltar 16.12.1 and later Cisco IOS XE Amsterdam 17.1.1 and later	1.5
Cisco IOS XE Amsterdam 17.3.1 and later Cisco IOS XE Bengaluru 17.4.1 and later Cisco IOS XE Bengaluru 17.5.1 and later Cisco IOS XE Bengaluru 17.6.x and later Cisco IOS XE Cupertino 17.7.x and later Cisco IOS XE Cupertino 17.8.x and later Cisco IOS XE Cupertino 17.9.x and later Cisco IOS XE Dublin 17.10.x and later Cisco IOS XE Dublin 17.12.x and later Cisco IOS XE Dublin 17.12.3 and later	1.6 Note The Cisco IOS XE versions that support ROMMON version 1.5, are also supported for 1.6.

Perform the following steps to migrate to Cisco IOS XE Dublin 17.12.x:

SUMMARY STEPS

1. At the command prompt, run the following command to check the current ROMMON version.
2. Copy the running configuration to the bootflash for backup.
3. Copy the migration image to a bootflash location.
4. Copy the Cisco IOS XE Dublin 17.12.x software image to bootflash.
5. Set the boot variable to migration image and reload the router.

6. Verify the ROMMON image version.
7. Set the boot variable to the Cisco IOS XE Dublin 17.12.x software image and delete the migration image from the bootflash. Reload the router to activate the Cisco IOS XE Dublin 17.12.x software image.
8. After booting the Cisco IOS XE Dublin 17.12.x image, ROMMON and FPGA will automatically upgrade and the node is reloaded. Once the node is up, the output is displayed:

DETAILED STEPS

Step 1 At the command prompt, run the following command to check the current ROMMON version.

```
Device# show platform
Chassis type: N520-X-4G4Z-A
Slot      Type                State                Insert time (ago)
-----
  0/0     4xGE-4x10GE-FIXED    ok                   8w5d
R0       N520-X-4G4Z-A        ok, active           8w5d
F0       NCS520-PSU0          ok, active           8w5d
P0       NCS520-PSU0          ok                   never
P1       NA                   ok                   never
P2       NCS520-FAN           ok                   never

Slot      CPLD Version          Firmware Version
-----
R0       0003001E             1.2 (20180810:133528) [ncs520-dev] --> the ROMMON version is 1.2
F0       0003001E             1.2 (20180810:133528) [ncs520-dev]
```

Note Do not migrate if the ROMMON version is 1.5 or above.

Step 2 Copy the running configuration to the bootflash for backup.

```
Device# copy running-config bootflash:backup_config
Destination filename [backup_config]?
15549 bytes copied in 0.404 secs (38488 bytes/sec)
```

Step 3 Copy the migration image to a bootflash location.

You can download the migration image from the location:

<https://software.cisco.com/download/home/286320761/type/286317642/release/1.5>.

```
Device# copy tftp: bootflash:
Address or name of remote host []? 10.64.99.152
Source filename []? ncs520-1.5rommon-auto-upgrade-xe.bin
Destination filename [ncs520-1.5rommon-auto-upgrade-xe.bin]?
Accessing tftp://10.64.99.152/ ncs520-1.5rommon-auto-upgrade-xe.bin...
Loading ncs520-1.5rommon-auto-upgrade-xe.bin from 10.64.99.152 (via GigabitEthernet0)!!!!
```

Step 4 Copy the Cisco IOS XE Dublin 17.12.x software image to bootflash.

Step 5 Set the boot variable to migration image and reload the router.

```
boot system bootflash:ncs520-1.5rommon-auto-upgrade-xe.bin
```

Caution Do not perform any power cycle or remove the power cable during the ROMMON upgrade. If there is a power loss during the upgrade, it may result in corruption of the boot image and it may require RMA of the equipment.

Step 6 Verify the ROMMON image version.

For the RJ-45 console: Check for the following logs during bootup. These logs indicate successful ROMMON upgrade. After a successful ROMMON upgrade, the node auto reloads. This action takes at least 5 minutes to complete successfully.


```

Full Package address :0xC79BF018 Max-Address for IOS-Pkg Allocation:0xC79BEC18
%IOSXEBOOT-4-BOOTLOADER_UPGRADE: (rp/0): ### Wed Jul 31 11:51:41 Universal 2019 PLEASE DO NOT POWER
CYCLE ### BOOT LOADER UPGRADING

%IOSXEBOOT-4-BOOTLOADER_UPGRADE: (rp/0): Boot loader golden upgrade succesful

%IOSXEBOOT-4-BOOTLOADER_UPGRADE: (rp/0): Boot loader upgrade succesful
%IOSXEBOOT-4-BOOTLOADER_UPGRADE: (rp/0): To activate the new Rommon ,system will reload now!!!!

%IOSXEBOOT-4-BOOTLOADER_UPGRADE: (rp/0): ### After reload, PLEASE LOAD CCO IMAGE ###
N520-54-S1#show platform
Chassis type: N520-X-4G4Z-A

```

Slot	Type	State	Insert time (ago)
0/0	4xGE-4x10GE-FIXED	ok	00:00:51
R0	N520-X-4G4Z-A	ok, active	00:03:07
F0		ok, active	00:03:07
P0	NCS520-PSU0	ok	never
P1	NA	ok	never
P2	NCS520-FAN	ok	never

Slot	CPLD Version	Firmware Version
R0	0003001E	1.5(20190415:181241) [ncs520-dev] --> the ROMMON version is 1.5
F0	0003001E	1.5(20190415:181241) [ncs520-dev]

For VTY Session: Wait for 30 minutes for auto upgrade to complete, and the router to boot up. Reestablish the VTY session.

```

Device#show platform
Chassis type: N520-X-4G4Z-A

```

Slot	Type	State	Insert time (ago)
0/0	4xGE-4x10GE-FIXED	ok	00:00:51
R0	N520-X-4G4Z-A	ok, active	00:03:07
F0		ok, active	00:03:07
P0	NCS520-PSU0	ok	never
P1	NA	ok	never
P2	NCS520-FAN	ok	never

Slot	CPLD Version	Firmware Version
R0	0003001E	1.5(20190415:181241) [ncs520-dev] --> the ROMMON version is 1.5
F0	0003001E	1.5(20190415:181241) [ncs520-dev]

Step 7 Set the boot variable to the Cisco IOS XE Dublin 17.12.x software image and delete the migration image from the bootflash. Reload the router to activate the Cisco IOS XE Dublin 17.12.x software image.

```

Device#configure terminal
Device(config)#no boot system bootflash:ncs520-1.5rommon-auto-upgrade-xe.bin
Device(config)#boot system bootflash:<CCO Image>
Device(config)#end
Device#write memory
Device#del bootflash:ncs520-1.5rommon-auto-upgrade-xe.bin

```

Step 8 After booting the Cisco IOS XE Dublin 17.12.x image, ROMMON and FPGA will automatically upgrade and the node is reloaded. Once the node is up, the output is displayed:

```

Device#show platform
Chassis type: N520-X-20G4Z-A

```

```

Slot Type State Insert time (ago)
-----
0/0 20xGE-4x10GE-FIXED ok 1w5d
R0 N520-X-20G4Z-A ok, active 1w5d
F0 ok, active 1w5d
P0 NCS520-PSU0 ps, fail never
P1 NCS520-PSU1 ok never
P2 NCS520-FAN ok never

Slot CPLD Version Firmware Version
-----
R0 00030025 1.6(20191125:124452) [ncs520-dev]
F0 00030025 1.6(20191125:124452) [ncs520-dev]

```

Supported Packages and System Requirements

Supported FPGA Version

The table below lists the FPGA version of the software releases.

Table 1: FPGA Versions for this release

Release	FPGA Version
Cisco IOS XE Dublin 17.12.3	0x00030025
Cisco IOS XE Dublin 17.12.2a	0x00030025
Cisco IOS XE Dublin 17.12.1	0x00030025



Note The FPGA automatically upgrades to **0x00030025** from Cisco IOS XE Cupertino 17.7.1 onwards. The Cisco NCS 520 Series Ethernet Access Device will take around 210 seconds to reboot after a successful FPGA upgrade. Do not power-cycle the Ethernet Access Device during FPGA upgrade.

Supported ROMMON Version

Table 2: Supported ROMMON Version

Supported Cisco IOS XE Release	ROMMON Version
Cisco IOS XE Dublin 17.12.3	1.6
Cisco IOS XE Dublin 17.12.2a	1.6

Supported Cisco IOS XE Release	ROMMON Version
Cisco IOS XE Dublin 17.12.1	1.6



Note ROMMON automatically upgrades to **1.6** from Cisco IOS XE Cupertino 17.7.1 onwards.

Limitations and Restrictions on the Cisco NCS 520 Series Ethernet Access Device



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.

- The **default interface** 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
```
- Adding or deleting the Trunk Ethernet flow points (TEFPs) with scaled bridge-domain, without delay causes the Cisco NCS 520 Series Ethernet Access Device to crash.
- Virtual services should be deactivated and uninstalled before performing replace operations.
- The **controller** and **nid-controller** commands are not supported.
- Cisco NCS 520 Series Ethernet Access Device displays an error in Hierarchical QoS policy while trying to remove the **bandwidth** and **bandwidth percent** commands from the default parent class dynamically. To remove the commands, you must first remove the bandwidth from child class and then from the parent class.
- When port is in OPER-DOWN state, applying Hierarchical QoS followed by speed change sets wrong bandwidth values on standard queues. To work around the mismatch, you must reattach the policy to the port level again.



CHAPTER 2

What's New for Cisco IOS XE Dublin 17.12.x

- [What's New in Hardware for Cisco IOS XE Dublin 17.12.3, on page 9](#)
- [What's New in Software for Cisco IOS XE Dublin 17.12.3, on page 9](#)
- [What's New in Software for Cisco IOS XE Dublin 17.12.2a, on page 9](#)
- [What's New in Hardware for Cisco IOS XE Dublin 17.12.2a, on page 9](#)
- [What's New in Software for Cisco IOS XE Dublin 17.12.1, on page 9](#)
- [What's New in Hardware for Cisco IOS XE Dublin 17.12.1, on page 10](#)

What's New in Hardware for Cisco IOS XE Dublin 17.12.3

There are no new Hardware features introduced for this release.

What's New in Software for Cisco IOS XE Dublin 17.12.3

There are no new Software features introduced for this release.

What's New in Software for Cisco IOS XE Dublin 17.12.2a

There are no new Software features introduced for this release.

What's New in Hardware for Cisco IOS XE Dublin 17.12.2a

There are no new Hardware features introduced for this release.

What's New in Software for Cisco IOS XE Dublin 17.12.1

Feature	Description
Software Activation	

Feature	Description
No License Snapshot Support	License snapshot won't be generated starting from this release and the software relies only on the existing snapshot for any PAK license information.

What's New in Hardware for Cisco IOS XE Dublin 17.12.1

There are no new Hardware features introduced for this release.



CHAPTER 3

Caveats

This chapter describes open and resolved severity 1 and 2 caveats and select severity 3 caveats:

- The “Open Caveats” sections list open caveats that apply to the current release and may apply to previous releases. A caveat that is open for a prior release and is still unresolved applies to all future releases until it is resolved.
- The “Resolved Caveats” sections list caveats resolved in a specific release, but open in previous releases.

The bug IDs are sorted alphanumerically.



Note The Caveats section includes the bug ID and a short description of the bug. For details on the symptoms, conditions, and workaround for a specific caveat you must use the Bug Search Tool.

- [Resolved Caveats – Cisco IOS XE Dublin 17.12.3, on page 11](#)
- [Open Caveats – Cisco IOS XE Dublin 17.12.3, on page 12](#)
- [Resolved Caveats – Cisco IOS XE Dublin 17.12.2a, on page 12](#)
- [Open Caveats – Cisco IOS XE Dublin 17.12.2a, on page 12](#)
- [Resolved Caveats – Cisco IOS XE Dublin 17.12.1, on page 12](#)
- [Open Caveats – Cisco IOS XE Dublin 17.12.1, on page 13](#)
- [Cisco Bug Search Tool, on page 13](#)

Resolved Caveats – Cisco IOS XE Dublin 17.12.3

Identifier	Headline
CSCwh66880	Netconf packet punted to CPU when service policy attached to port-channel interface

Open Caveats – Cisco IOS XE Dublin 17.12.3

Identifier	Headline
CSCwj10767	Y.1731 AIS PDUs with higher MD level are forwarded by UP MEP in UP->DOWN direction

Resolved Caveats – Cisco IOS XE Dublin 17.12.2a

Identifier	Headline
CSCwh51947	Unwanted messages pops up on router with BDI interface configuration
CSCwh87343	Cisco IOS XE Software Web UI Privilege Escalation Vulnerability
CSCwf79476	ASR920:when certificate issue "show platform sudi certificate sign nonce xxxx", Flaps L3 interfaces
CSCwh75169	ISIS: Redistribution prefix threshold has been reached seen with lesser prefixes
CSCwfl6577	BFD session down alarm not clearing after fault is recovered.

Open Caveats – Cisco IOS XE Dublin 17.12.2a

Identifier	Headline
CSCuv05226	VRF is not deleted after replacing default configuration.
CSCwh84408	Process pubd is not running on RSP2.
CSCwh68394	Unable to remove the service instance under interface.
CSCwh89032	Remove vulnerability in open port.

Resolved Caveats – Cisco IOS XE Dublin 17.12.1

Identifier	Headline
CSCwf67274	IPv6 support under global routing table in version 17.11.1.a
CSCwe53050	Misreporting Output Drops as Errors in Interface counters
CSCwe36071	17.12.1 NCS520: Parser failure in CLI "show crypto entropy status"

Open Caveats – Cisco IOS XE Dublin 17.12.1

Identifier	Headline
CSCwf18420	LLDP does not announce dynamically assigned VLAN
CSCwf68400	RSP3:<group>0</group> additional value gets added during fetch, applying the same config fails.

Cisco Bug Search Tool

[Cisco Bug Search Tool](#) (BST), the online successor to Bug Toolkit, is designed to improve effectiveness in network risk management and device troubleshooting. You can search for bugs based on product, release, and keyword, and aggregates key data such as bug details, product, and version. For more details on the tool, see the help page located at <http://www.cisco.com/web/applicat/cbsshelp/help.html>

