Release Notes for Cisco NCS 5500 Series Routers, IOS XR Release 7.9.2

Network Convergence System 5500 Series Routers

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Note Cisco IOS XR Release 7.9.2 is an Extended Maintenance Release of Cisco IOS XR Release 7.9.1 for Cisco NCS 5500 Series routers. For more details on the Cisco IOS XR release model and associated support, see Guidelines for Cisco IOS XR Software.

What's New in Cisco IOS XR Release 7.9.2

Cisco IOS XR Release 7.9.2 is an extended maintenance release for Cisco NCS 5500 Series routers. There are no new software features or hardware introduced in this release.

For more details on the Cisco IOS XR release model and associated support, see Guidelines for Cisco IOS XR Software.

Behavior Changes

- Prior to Cisco IOS XR release 7.2.1, a segment of an explicit segment list can be configured as an IPv4 address (representing a Node or a Link) using the **index** *index***address ipv4** *address* command.

  Starting with Cisco IOS XR release 7.2.1, an IPv4-based segment (representing a Node or a Link) can also be configured with the new **index** *index* **mpls adjacency***address* command. The configuration is stored in NVRAM in the same CLI format used to create it. There is no conversion from the old CLI to the new CLI.

  Starting with Cisco IOS XR release 7.9.1, the old CLI has been deprecated. Old configurations stored in NVRAM will be rejected at boot-up.

  As a result, explicit segment lists with IPv4-based segments using the old CLI must be re-configured using the new CLI.

  There are no CLI changes for segments configured as MPLS labels using the **index** *index* **mpls label** *label* command.

- If you are on a release before Cisco IOS XR Release 7.4.1, you can configure SR-ODN with Flexible Algorithm constraints using the **segment-routing traffic-eng on-demand color** *color* **dynamic sid-algorithm** *algorithm-number* command.

  Starting with Cisco IOS XR release 7.4.1, you can also configure SR-ODN with Flexible Algorithm constraints using the new **segment-routing traffic-eng on-demand color** *color* **constraints segments sid-algorithm** *algorithm-number* command.

  From Cisco IOS XR Release 7.9.1, the **segment-routing traffic-eng on-demand color** *color* **dynamic sid-algorithm** *algorithm-number* command is deprecated. Previous configurations stored in NVRAM will be rejected at boot-up.

  Hence, for Cisco IOS XR Release 7.9.1, you must reconfigure all SR-ODN configurations with Flexible Algorithm constraints that use the on-demand dynamic sid-algorithm with the on-demand constraints command.

Caveats

These caveats are applicable for Cisco NCS 5500 Series Router:

Table 1: Cisco NCS 5500 Series Router Specific Bugs

Bug ID	Headline
CSCwe48642	BGP VPNv4 prefix with ATTR_SET is not installed in VRF routing table
CSCvw49101	Issues with replace pattern when interface is configured under dhcp ipv4
CSCwe97921	QSFP-100G-CU5M is not coming up between Nexus 9000 and NCS 5504

Release Package

This table lists the Cisco IOS XR Software feature set matrix (packages) with associated filenames.

Visit the Cisco Software Download page to download the Cisco IOS XR software images.

Table 2: Release 7.9.2 Packages for Cisco NCS 5500 Series Router

Composite Package		
Feature Set	**Filename**	**Description**
Cisco IOS XR IP Unicast Routing Core Bundle	ncs5500-mini-x.iso	Contains base image contents that includes: • Host operating system • System Admin boot image • IOS XR boot image • BGP packages
Individually-Installable Optional Packages		
Feature Set	**Filename**	**Description**
Cisco IOS XR Manageability Package	ncs5500-mgbl-3.0.0.0-r792.x86_64.rpm	Extensible Markup Language (XML) Parser, Telemetry, Netconf, gRPC and HTTP server packages.
Cisco IOS XR MPLS Package	ncs5500-mpls-2.1.0.0-r792.x86_64.rpm ncs5500-mpls-te-rsvp-2.2.0.0-r792.x86_64.rpm	MPLS and MPLS Traffic Engineering (MPLS-TE) RPM.
Cisco IOS XR Security Package	ncs5500-k9sec-3.1.0.0-r792.x86_64.rpm	Support for Encryption, Decryption, Secure Shell (SSH), Secure Socket Layer (SSL), and Public-key infrastructure (PKI)
Cisco IOS XR ISIS package	ncs5500-isis-1.2.0.0-r792.x86_64.rpm	Support ISIS
Cisco IOS XR OSPF package	ncs5500-ospf-2.0.0.0-r792.x86_64.rpm	Support OSPF

Lawful Intercept (LI) Package	ncs5500-li-1.0.0.0-r792.x86_64.rpm	Includes LI software images
Multicast Package	ncs5500-mcast-1.0.0.0-r792.rpm	Support Multicast

Table 3: Release 7.9.2 Packages for Cisco NCS 5700 Series Router

Feature Set	Filename
NCS 5700 IOS XR Software	ncs5700-x64-7.9.2.iso
NCS 5700 IOS XR Software (only k9 RPMs)	ncs5700-k9sec-rpms.7.9.2.tar

NCS 5700 IOS XR Software Optional Package	NCS5700-optional-rpms.7.9.2.tar
	
	This TAR file contains the following RPMS:
	
	    • optional-rpms/cdp/*
	
	    • optional-rpms/eigrp/*
	
	    • optional-rpms/telnet/*

Determine Software Version

To verify the software version running on the router, use **show version** command in the EXEC mode.

```
Router# show version
Cisco IOS XR Software, Version 7.9.2
Copyright (c) 2013-2023 by Cisco Systems, Inc.

Build Information:
 Built By     : deenayak
 Built On     : Wed Jun 28 22:48:00 PDT 2023
 Built Host   : b25a49aa1283
 Workspace    : /auto/srcarchive16/prod/7.9.2/ncs5500/ws
 Version      : 7.9.2
 Location     : /opt/cisco/XR/packages/
 Label        : 7.9.2

cisco NCS-5500 () processor
System uptime is 25 minutes
```

Determine Firmware Support

Use the **show hw-module fpd** command in EXEC and Admin 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.

Note You can also use the **show fpd package** command in Admin mode to check the fpd versions.

This sample output is for **show hw-module fpd** command from the Admin mode:

```
sysadmin-vm:0_RP0# show hw-module fpd

                                                                 FPD Versions
                                                                 ==============
Location  Card type           HWver  FPD device       ATR Status     Run    Programd
-------------------------------------------------------------------------------------
0/0       NC57-18DD-SE        1.1    Bootloader           CURRENT    1.03      1.03
0/0       NC57-18DD-SE        1.1    DBFPGA               CURRENT    0.14      0.14
0/0       NC57-18DD-SE        1.1    IOFPGA               CURRENT    0.22      0.22
0/0       NC57-18DD-SE        1.1    SATA-INTEL_240G      CURRENT 1132.00   1132.00
0/2       NC55-36X100G-S      0.4    Bootloader           CURRENT    1.20      1.20
0/2       NC55-36X100G-S      0.4    IOFPGA               CURRENT    0.12      0.12
0/2       NC55-36X100G-S      0.4    SATA-M600-MCT        CURRENT    5.00      5.00
0/5       NC55-18H18F         1.0    Bootloader           CURRENT    1.20      1.20
0/5       NC55-18H18F         1.0    IOFPGA               CURRENT    0.22      0.22
0/5       NC55-18H18F         1.0    SATA-M600-MCT        CURRENT    5.00      5.00
0/6       NC55-MOD-A-SE-S     0.201  Bootloader           CURRENT    1.03      1.03
0/6       NC55-MOD-A-SE-S     0.201  DBFPGA               CURRENT    0.14      0.14
0/6       NC55-MOD-A-SE-S     0.201  IOFPGA               CURRENT    0.14      0.14
0/6       NC55-MOD-A-SE-S     0.201  SATA-M500IT-MU-A     CURRENT    5.00      5.00
0/9       NC55-36X100G-A-SE   0.303  Bootloader           CURRENT    0.15      0.15
0/9       NC55-36X100G-A-SE   0.303  DBFPGA               CURRENT    0.14      0.14
0/9       NC55-36X100G-A-SE   0.303  IOFPGA               CURRENT    0.26      0.26
0/9       NC55-36X100G-A-SE   0.303  SATA-M600-MCT        CURRENT    5.00      5.00
0/12      NC55-32T16Q4H-A     0.12   Bootloader           CURRENT    0.05      0.05
0/12      NC55-32T16Q4H-A     0.12   DBFPGA               CURRENT    0.14      0.14
0/12      NC55-32T16Q4H-A     0.12   IOFPGA               CURRENT    0.93      0.93
0/12      NC55-32T16Q4H-A     0.12   SATA-M5100           CURRENT   75.00     75.00
0/14      NC55-6X200-DWDM-S   0.502  Bootloader           CURRENT    1.20      1.20
0/14      NC55-6X200-DWDM-S   0.502  IOFPGA               CURRENT    0.14      0.14
0/14      NC55-6X200-DWDM-S   0.502  SATA-M600-MCT        CURRENT    5.00      5.00
0/RP0     NC55-RP2-E          0.201  Bootloader           CURRENT    0.08      0.08
0/RP0     NC55-RP2-E          0.201  IOFPGA               CURRENT    0.50      0.50
0/RP0     NC55-RP2-E          0.201  OMGFPGA              CURRENT    0.52      0.52
0/RP0     NC55-RP2-E          0.201  SATA-M5100           CURRENT   75.00     75.00
0/RP1     NC55-RP2-E          0.301  Bootloader           CURRENT    0.08      0.08
0/RP1     NC55-RP2-E          0.301  IOFPGA               CURRENT    0.50      0.50
0/RP1     NC55-RP2-E          0.301  OMGFPGA              CURRENT    0.52      0.52
0/RP1     NC55-RP2-E          0.301  SATA-M5100           CURRENT   75.00     75.00
0/FC0     NC55-5516-FC2       1.0    Bootloader           CURRENT    1.80      1.80
0/FC0     NC55-5516-FC2       1.0    IOFPGA               CURRENT    0.22      0.22
0/FC0     NC55-5516-FC2       1.0    SATA-M5100           CURRENT   75.00     75.00
0/FC1     NC55-5516-FC2       1.0    Bootloader           CURRENT    1.80      1.80
0/FC1     NC55-5516-FC2       1.0    IOFPGA               CURRENT    0.22      0.22
0/FC1     NC55-5516-FC2       1.0    SATA-M5100           CURRENT   75.00     75.00
0/FC3     NC55-5516-FC2       1.0    Bootloader           CURRENT    1.80      1.80
0/FC3     NC55-5516-FC2       1.0    IOFPGA               CURRENT    0.22      0.22
0/FC3     NC55-5516-FC2       1.0    SATA-Micron          CURRENT    1.00      1.00
0/FC5     NC55-5516-FC2       1.0    Bootloader           CURRENT    1.80      1.80
0/FC5     NC55-5516-FC2       1.0    IOFPGA               CURRENT    0.22      0.22
0/FC5     NC55-5516-FC2       1.0    SATA-Micron          CURRENT    1.00      1.00
0/PM3     NC55-PWR-3KW-2HV    0.2    DT-LogicMCU          CURRENT    3.01      3.01
0/PM3     NC55-PWR-3KW-2HV    0.2    DT-PriMCU            CURRENT    3.00      3.00
0/PM3     NC55-PWR-3KW-2HV    0.2    DT-SecMCU            CURRENT    3.01      3.01
0/PM6     NC55-PWR-3KW-2HV    0.2    DT-LogicMCU          CURRENT    3.01      3.01
0/PM6     NC55-PWR-3KW-2HV    0.2    DT-PriMCU            CURRENT    3.00      3.00
0/PM6     NC55-PWR-3KW-2HV    0.2    DT-SecMCU            CURRENT    3.01      3.01
0/SC0     NC55-SC             1.5    Bootloader           CURRENT    1.74      1.74
0/SC0     NC55-SC             1.5    IOFPGA               CURRENT    0.10      0.10
0/SC1     NC55-SC             1.5    Bootloader           CURRENT    1.74      1.74
0/SC1     NC55-SC             1.5    IOFPGA               CURRENT    0.10      0.10
```

Important Notes

- The total number of bridge-domains (2*BDs) and GRE tunnels put together should not exceed 1518. Here the number 1518 represents the multi-dimensional scale value.

- The offline diagnostics functionality is not supported in NCS 5500 platform. Therefore, the **hw-module service offline location** command will not work. However, you can use the **(sysadmin)# hw-module shutdown location** command to bring down the LC.

Supported Transceiver Modules

To determine the transceivers that Cisco hardware device supports, refer to the Transceiver Module Group (TMG) Compatibility Matrix tool.

Upgrading Cisco IOS XR Software

Cisco IOS XR Software is installed and activated from modular packages, allowing specific features or software patches to be installed, upgraded, or downgraded without affecting unrelated processes. Software packages can be upgraded or downgraded on all supported card types, or on a single card (node).

Before starting the software upgrade, use the **show install health** command in the admin mode. This command validates if the statuses of all relevant parameters of the system are ready for the software upgrade without interrupting the system.

Note
- If you use a TAR package to upgrade from a Cisco IOS XR release prior to 7.x, the output of the **show install health** command in admin mode displays the following error messages:

```
sysadmin-vm:0_RSP0# show install health
. . .
ERROR /install_repo/gl/xr -rw-r--r--. 1 8413 floppy 3230320 Mar 14 05:45 <platform>-isis-2.2.0.0-r702.x86_64
ERROR /install_repo/gl/xr -rwxr-x---. 1 8413 165 1485781 Mar 14 06:02 <platform>-k9sec-3.1.0.0-r702.x86_64
ERROR /install_repo/gl/xr -rw-r--r--. 1 8413 floppy 345144 Mar 14 05:45 <platform>-li-1.0.0.0-r702.x86_64
```

You can ignore these messages and proceed with the installation operation.

- Quad configurations will be lost when you perform a software downgrade on a NCS-55A1-48Q6H device from IOS XR Release 7.5.1 onwards to a release prior to IOS XR Release 7.5.1 due to non-backward compatibility change. The lost configuration can be applied manually after the downgrade.

Note A quad is a group of four ports with common speeds, 1G/10G or 25G. You can configure the ports speed for a q by using the **hw-module quad** command.

Production Software Maintenance Updates (SMUs)

A production SMU is a SMU that is formally requested, developed, tested, and released. Production SMUs are intended for use in a live network environment and are formally supported by the Cisco TAC and the relevant development teams. Software bugs identified through software recommendations or Bug Search Tools are not a basis for production SMU requests.

For information on production SMU types, refer the Production SMU Types section of the *IOS XR Software Maintenance Updates (SMUs)* guide.

Cisco IOS XR Error messages

To view, search, compare, and download Cisco IOS XR Error Messages, refer to the Cisco IOS XR Error messages tool.

Cisco IOS XR MIBs

To determine the MIBs supported by platform and release, refer to the Cisco IOS XR MIBs tool.

Related Documentation

The most current Cisco NCS 5500 router documentation is located at the following URL:

https://www.cisco.com/c/en/us/td/docs/iosxr/ios-xr.html

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA 95134-1706
USA

Asia Pacific Headquarters
CiscoSystems(USA)Pte.Ltd.
Singapore

Europe Headquarters
CiscoSystemsInternationalBV
Amsterdam,TheNetherlands

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