Revised: March 20, 2024

Release Notes for Cisco NCS 5500 Series Routers, IOS XR Release 7.10.2

Network Convergence System 5500 Series Routers

Note Cisco IOS XR Release 7.10.2 is an Extended Maintenance Release of Cisco IOS XR Release 7.10.1 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 7.10.2

Cisco IOS XR Release 7.10.2 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.

For more details on the Cisco IOS XR release model and associated support, see Software Lifecycle Support Statement - IOS XR.

Caveats

Table 1: Cisco NCS 5500 Series Router Specific Bugs

Bug ID	Headline
CSCwh77622	The error PLATFORM-PLAT_FIB-3-HW_PROG_ERROR srv6nh seen after bgp session flap

Behavior Changes

Starting with Cisco IOS XR Software Release 7.10.1, you must configure a name server for Smart Licensing deployment options that use HTTPS for communication with Cisco Smart Software Manager (CSSM). If the system cannot validate that the Common Name (CN) in the X.509 server certificate is a Fully Qualified Domain Name (FQDN), communication with CSSM results in an **Error during SSL communication**. See the *Smart Licensing Chapter* in the *System Management Configuration Guide for NCS 5500 Series Routers* for more information and options to bypass the name server configuration.

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 7.10.2 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-r7102.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-r7102.x86_64.rpm ncs5500-mpls-te-rsvp-2.2.0.0-r7102.x86_64.rpm	MPLS and MPLS Traffic Engineering (MPLS-TE) RPM.
Cisco IOS XR Security Package	ncs5500-k9sec-3.1.0.0-r7102.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-r7102.x86_64.rpm	Support ISIS
Cisco IOS XR OSPF package	ncs5500-ospf-2.0.0.0-r7102.x86_64.rpm	Support OSPF
Lawful Intercept (LI) Package	ncs5500-li-1.0.0.0-r7102.x86_64.rpm	Includes LI software images
Multicast Package	ncs5500-mcast-1.0.0.0-r7102.rpm	Support Multicast

Table 3: Release 7.10.2 TAR files for Cisco NCS 5500 Series Router

Feature Set	**Filename**
NCS 5500 IOS XR Software 3DES	NCS5500-iosxr-k9-7.10.2.tar
NCS 5500 IOS XR Software	NCS5500-iosxr-7.10.2.tar
NCS 5500 IOS XR Software	NCS5500-docs-7.10.2.tar

Table 4: Release 7.10.2 Packages for Cisco NCS 5700 Series Router

Feature Set	**Filename**
NCS 5700 IOS XR Software	ncs5700-x64-7.10.2.iso

NCS 5700 IOS XR Software (only k9 RPMs)	ncs5700-k9sec-rpms.7.10.2.tar
NCS 5700 IOS XR Software Optional Package	NCS5700-optional-rpms.7.10.2.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.

```
RP/0/RP0/CPU0#show version
Cisco IOS XR Software, Version 7.10.2
Copyright (c) 2013-2023 by Cisco Systems, Inc.

Build Information:
 Built By     : deenayak
 Built On     : Sat Nov 18 06:14:20 PST 2023
 Built Host   : iox-ucs-044
 Workspace    : /auto/srcarchive14/prod/7.10.2/ncs5500/ws
 Version      : 7.10.2
 Location     : /opt/cisco/XR/packages/
 Label        : 7.10.2

cisco NCS-5500 () processor
System uptime is 20 hours 30 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:

NCS 5500:

```
RP/0/RP0/CPU0#show hw-module fpd

Auto-upgrade:Enabled
                                                                  FPD Versions
                                                                  ==============
Location   Card type             HWver FPD device       ATR Status    Running   Programd
-------------------------------------------------------------------------------------
0/0        NC57-48Q2D-SE-S       0.4   MIFPGA               CURRENT     0.21      0.21
0/0        NC57-48Q2D-SE-S       1.0   TimingIC-A           CURRENT     7.216     7.216
0/0        NC57-48Q2D-SE-S       1.0   TimingIC-B           CURRENT     7.216     7.216
0/0        NC57-48Q2D-SE-S       0.4   ALDRINFPGA           CURRENT     1.06      1.06
0/0        NC57-48Q2D-SE-S       0.4   Bootloader           CURRENT     1.00      1.00
```

0/0	NC57-48Q2D-SE-S	0.4	DBFPGA	CURRENT	0.14	0.14
0/0	NC57-48Q2D-SE-S	0.4	IOFPGA	CURRENT	0.105	0.105
0/0	NC57-48Q2D-SE-S	0.4	SATA-INTEL_240G	CURRENT	1132.00	1132.00
0/1	NC57-18DD-SE	1.1	MIFPGA	CURRENT	0.11	0.11
0/1	NC57-18DD-SE	1.1	Bootloader	CURRENT	1.03	1.03
0/1	NC57-18DD-SE	1.1	DBFPGA	CURRENT	0.14	0.14
0/1	NC57-18DD-SE	1.1	IOFPGA	CURRENT	0.22	0.22
0/1	NC57-18DD-SE	1.1	SATA-M5100	CURRENT	75.00	75.00
0/2	NC57-18DD-SE	1.1	MIFPGA	CURRENT	0.11	0.11
0/2	NC57-18DD-SE	1.1	Bootloader	CURRENT	1.03	1.03
0/2	NC57-18DD-SE	1.1	DBFPGA	CURRENT	0.14	0.14
0/2	NC57-18DD-SE	1.1	IOFPGA	CURRENT	0.22	0.22
0/2	NC57-18DD-SE	1.1	SATA-M5100	CURRENT	75.00	75.00
0/3	NC57-18DD-SE	1.1	MIFPGA	CURRENT	0.11	0.11
0/3	NC57-18DD-SE	1.1	Bootloader	CURRENT	1.03	1.03
0/3	NC57-18DD-SE	1.1	DBFPGA	CURRENT	0.14	0.14
0/3	NC57-18DD-SE	1.1	IOFPGA	CURRENT	0.22	0.22
0/3	NC57-18DD-SE	1.1	SATA-M5100	CURRENT	75.00	75.00
0/5	NC57-18DD-SE	1.1	MIFPGA	CURRENT	0.11	0.11
0/5	NC57-18DD-SE	1.1	Bootloader	CURRENT	1.03	1.03
0/5	NC57-18DD-SE	1.1	DBFPGA	CURRENT	0.14	0.14
0/5	NC57-18DD-SE	1.1	IOFPGA	CURRENT	0.22	0.22
0/5	NC57-18DD-SE	1.1	SATA-M5100	CURRENT	75.00	75.00
0/6	NC57-18DD-SE	1.1	MIFPGA	CURRENT	0.11	0.11
0/6	NC57-18DD-SE	1.1	Bootloader	CURRENT	1.03	1.03
0/6	NC57-18DD-SE	1.1	DBFPGA	CURRENT	0.14	0.14
0/6	NC57-18DD-SE	1.1	IOFPGA	CURRENT	0.22	0.22
0/6	NC57-18DD-SE	1.1	SATA-M5100	CURRENT	75.00	75.00
0/7	NC57-36H-SE	1.0	MIFPGA	CURRENT	0.03	0.03
0/7	NC57-36H-SE	1.0	Bootloader	CURRENT	1.03	1.03
0/7	NC57-36H-SE	1.0	DBFPGA	CURRENT	0.14	0.14
0/7	NC57-36H-SE	1.0	IOFPGA	CURRENT	0.05	0.05
0/7	NC57-36H-SE	1.0	SATA-Micron	CURRENT	1.00	1.00
0/RP0	NC55-RP2-E	1.0	TimingIC-A	CURRENT	7.216	7.216
0/RP0	NC55-RP2-E	1.0	TimingIC-B-0	CURRENT	7.216	7.216
0/RP0	NC55-RP2-E	1.0	TimingIC-B-1	CURRENT	7.216	7.216
0/RP0	NC55-RP2-E	1.0	Bootloader	CURRENT	0.08	0.08
0/RP0	NC55-RP2-E	1.0	IOFPGA	CURRENT	0.50	0.50
0/RP0	NC55-RP2-E	1.0	OMGFPGA	CURRENT	0.52	0.52
0/RP0	NC55-RP2-E	1.0	SATA-M5100	CURRENT	75.00	75.00
0/RP1	NC55-RP2-E	1.0	TimingIC-A	CURRENT	7.216	7.216
0/RP1	NC55-RP2-E	1.0	TimingIC-B-0	CURRENT	7.216	7.216
0/RP1	NC55-RP2-E	1.0	TimingIC-B-1	CURRENT	7.216	7.216
0/RP1	NC55-RP2-E	1.0	Bootloader	CURRENT	0.08	0.08
0/RP1	NC55-RP2-E	1.0	IOFPGA	CURRENT	0.50	0.50
0/RP1	NC55-RP2-E	1.0	OMGFPGA	CURRENT	0.52	0.52
0/RP1	NC55-RP2-E	1.0	SATA-M5100	CURRENT	75.00	75.00
0/FC0	NC55-5508-FC2	1.0	Bootloader	CURRENT	1.80	1.80
0/FC0	NC55-5508-FC2	1.0	IOFPGA	CURRENT	0.19	0.19
0/FC0	NC55-5508-FC2	1.0	SATA-M5100	CURRENT	75.00	75.00
0/FC1	NC55-5508-FC2	1.0	Bootloader	CURRENT	1.80	1.80
0/FC1	NC55-5508-FC2	1.0	IOFPGA	CURRENT	0.19	0.19
0/FC1	NC55-5508-FC2	1.0	SATA-M5100	CURRENT	75.00	75.00
0/FC2	NC55-5508-FC2	1.0	Bootloader	CURRENT	1.80	1.80
0/FC2	NC55-5508-FC2	1.0	IOFPGA	CURRENT	0.19	0.19
0/FC2	NC55-5508-FC2	1.0	SATA-M5100	CURRENT	75.00	75.00
0/FC3	NC55-5508-FC2	1.0	Bootloader	CURRENT	1.80	1.80
0/FC3	NC55-5508-FC2	1.0	IOFPGA	CURRENT	0.19	0.19
0/FC3	NC55-5508-FC2	1.0	SATA-M5100	CURRENT	75.00	75.00
0/FC4	NC55-5508-FC2	1.0	Bootloader	CURRENT	1.80	1.80
0/FC4	NC55-5508-FC2	1.0	IOFPGA	CURRENT	0.19	0.19
0/FC4	NC55-5508-FC2	1.0	SATA-M5100	CURRENT	75.00	75.00
0/FC5	NC55-5508-FC2	1.0	Bootloader	CURRENT	1.80	1.80
0/FC5	NC55-5508-FC2	1.0	IOFPGA	CURRENT	0.19	0.19

```
0/FC5      NC55-5508-FC2         1.0   SATA-M5100            CURRENT    75.00     75.00
0/SC0      NC55-SC               1.4   Bootloader            CURRENT     1.74      1.74
0/SC0      NC55-SC               1.4   IOFPGA                CURRENT     0.10      0.10
0/SC1      NC55-SC               1.4   Bootloader            CURRENT     1.74      1.74
0/SC1      NC55-SC               1.4   IOFPGA                CURRENT     0.10      0.10
```

NCS 5700:

```
RP/0/RP0/CPU0#show fpd package

================================ ============================================
                                        Field Programmable Device Package
                                 ============================================
                                          Req      SW       Min Req   Min Req
Card Type            FPD Description      Reload   Ver      SW Ver    Board Ver
================== ========================= ====== ======= ======== =========
--------------------------------------------------------------------------------
NCS-57B1-5DSE-SYS    ADM1_Config           NO      0.50      0.50      0.0
                     ADM2_Config           NO      0.50      0.50      0.0
                     ADM3_Config           NO      0.50      0.50      0.0
                     IoFpga                YES     0.09      0.09      0.0
                     IoFpgaGolden          YES     0.09      0.08      0.0
                     Primary-BIOS          YES     1.11      1.11      0.0
                     StdbyFpga             YES     0.24      0.24      0.0
                     StdbyFpgaGolden       YES     0.24      0.24      0.0
                     TamFw                 YES     6.05      6.05      0.0
                     TamFwGolden           YES     6.05      6.05      0.0
--------------------------------------------------------------------------------
NCS-57B1-6D24-SYS    ADM1_Config           NO      0.94      0.94      0.0
                     ADM2_Config           NO      0.94      0.94      0.0
                     ADM3_Config           NO      0.94      0.94      0.0
                     IoFpga                YES     0.09      0.09      0.0
                     IoFpgaGolden          YES     0.09      0.08      0.0
                     Primary-BIOS          YES     1.11      1.11      0.0
                     SsdIntelS4510         YES    11.20     11.20      0.0
                     SsdMicron5300         YES     0.01      0.01      0.0
                     StdbyFpga             YES     0.24      0.24      0.0
                     StdbyFpgaGolden       YES     0.24      0.24      0.0
                     TamFw                 YES     6.05      6.05      0.0
                     TamFwGolden           YES     6.05      6.05      0.0
--------------------------------------------------------------------------------
NCS-57C1-48Q6-SYS    ADM1_Config           YES     0.07      0.07      0.0
                     ADM2_Config           YES     0.07      0.07      0.0
                     IoFpga                YES     0.47      0.47      0.0
                     IoFpgaGolden          YES     0.47      0.47      0.0
                     Primary-BIOS          YES     3.07      3.07      0.0
                     SsdIntelS4510         YES    11.32     11.32      0.0
                     SsdMicron5300         YES     0.01      0.01      0.0
                     StdbyFpga             YES     0.31      0.31      0.0
                     StdbyFpgaGolden       YES     0.31      0.31      0.0
                     TamFw                 YES     7.10      7.10      0.0
                     TamFwGolden           YES     7.10      7.10      0.0
--------------------------------------------------------------------------------
NCS-57D2-18DD-SYS    ADM1-DBConfig         YES     1.82      1.82      0.0
                     ADM2-DBConfig         YES     1.82      1.82      0.0
                     ADM3-DBConfig         YES     1.82      1.82      0.0
                     ADM4-MBConfig         YES     1.82      1.82      0.0
                     ADM5-MBConfig         YES     1.82      1.82      0.0
                     ADM6-MBConfig         YES     1.82      1.82      0.0
                     FtFpga                NO      0.20      0.20      0.0
                     FtFpgaGolden          NO      0.20      0.00      0.0
                     IoFpga                YES     0.06      0.06      0.0
                     IoFpgaDB              YES     0.07      0.07      0.0
                     IoFpgaGolden          YES     0.05      0.05      0.0
                     IoFpgaGoldenDB        YES     0.05      0.05      0.0
```

```
                    Primary-BIOS               YES      4.09      4.09      0.0
                    SsdIntelS4510              YES     11.32     11.32      0.0
                    SsdMicron5300              YES      0.01      0.01      0.0
                    StdbyFpga                  YES      0.96      0.96      0.0
                    StdbyFpgaGolden            YES      0.83      0.83      0.0
                    TamFw                      YES      7.09      7.09      0.0
                    TamFwGolden                YES      7.09      7.09      0.0
--------------------------------------------------------------------------------
PSU1100W-ACPI       EM-PrimMCU                 NO       1.01      1.01      0.0
                    EM-SecMCU                  NO       1.05      1.05      0.0
--------------------------------------------------------------------------------
PSU2KW-ACPE         PO-PrimMCU                 NO      17.56     17.56      0.0
--------------------------------------------------------------------------------
PSU2KW-ACPI         PO-PrimMCU                 NO       1.03      1.03      0.0
                    PO-SecMCU                  NO       1.13      1.13      0.0
--------------------------------------------------------------------------------
PSU2KW-DCPE         PO-PrimMCU                 NO      17.56     17.56      0.0
--------------------------------------------------------------------------------
PSU2KW-DCPI         PO-PrimMCU                 NO       1.07      1.07      0.0
--------------------------------------------------------------------------------
PSU950W-DCPI        EM-PrimMCU                 NO       1.00      1.00      0.0
RP/0/RP0/CPU0#:ROUTER_NCS5700#
```

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 fo 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