Release Notes for Cisco NCS 4000 Series, Cisco IOS XR Release 6.5.32

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The release notes contain information about the new features introduced in the Cisco NCS 4000 Series.

Software and Hardware Requirements

Before you begin to install the software, you must check whether your system meets the minimum software and hardware requirements.

- Hardware—Intel Core i5, i7, or faster processor. A minimum of 4 GB RAM, 100 GB hard disk with 250 MB of available hard drive space.
- One of these operating System:
  - Windows 7, Windows Server 2008, or later.
  - Apple Mac OS X
  - UNIX workstation with Solaris Version 9 or 10 on an UltraSPARC-III or faster processor, with a minimum of 1 GB RAM and a minimum of 250 MB of available hard drive space.
  - Ubuntu 12.10
- Java Runtime Environment—Java Runtime Environment Version 1.8.
- Browser:
  - Internet Explorer
  - Mozilla
  - Safari

- Google Chrome

What's New in Cisco NCS 4000 Series, Release 6.5.32

Cisco is continuously enhancing the product with every release and this section covers a brief description of key features and enhancements

Feature	Description
System Setup and Software Installation	
DUO Two-Factor Log In	DUO Two-Factor Log In feature enables the CTC to authenticate the user with a secure DUO password. The Two-Factor authentication requires the user to enter a combination of DUO passcode and node password to access a node in the network. This log in feature does not support Automatic Network Discovery.
Configuration	
ACL on Data Port	ACL allows you to control the packets that move through the network. This control allows you to limit the network traffic and restrict the access of users and devices to the network. ACL is supported on the data port.
Delete RSVP File using Process Restart Command	The Process Restart command enables the user to delete stale RSVP files from reused Route Processors in a multi chassis (MC) system
Hardware Timestamping Support on Multi-chassis	Hardware timestamping is supported for both one-way and two-way delay measurements in multi-chassis.
Y.1564 Ethernet SAT Support on Multi-chassis	Y.1564 – Ethernet SAT feature supports up to four parallel SAT sessions in single chassis and up to four parallel SAT sessions for each rack in multi-chassis.
Flex Grid Spacing (only CLI support)	The Flex Grid Spacing feature increases bandwidth utilization by allowing channels to be packed in 100MHz grid spacing. This feature allows the user to configure the signal to any of the 761 individual wavelengths in the C band, using the supported tunable optics.
Programmability	

Feature	Description
YANG Models	The following YANG models are introduced in this release: • Ping • Traceroute • CFM • CFM Oper Data • OBFL Data Clear • Slice Control

Caveats

Open Caveats

The following list contains known issues for Release 6.5.32:

Identifier	Headline
CSCwa53873	TX stats not working for L3 subintf carrying MPLS traffic, its shows much less than actual traffic
CSCwa21908	Traffic down on SDR Reload due to AER
CSCwc45162	Upgrade of NCS4K Utilities component
CSCwc45228	Upgrade of NCS4K services components
CSCvv81924	Alarm Raise/Clear issue due to EID of the port
CSCwc45234	Upgrade of NCS4K linux kernel
CSCwa24390	L2 sub-Interfaces config failed on SDR Reload
CSCwd52863	NCS4k - bfd_agent process continuously crashing on standby LCVM after rack reload
CSCvy04086	[NCS4K-Timing] Support for auto recovery as switch clock to redundant RP if other RP clock is bad.
CSCwa13219	[Longevity SIT 733.14i] npu_drvr crash at '"platforms/common/ofa/core/src/ofa_core.c", line=1266'
CSCwc40251	NCS4k - Slow memleak in tl1_parser process on running background TL1 commands
CSCwc41083	6532-FCS:RP redundancy did not came up after standby RP reload
CSCwb87012	SVS 847 6.5.32 - Flow label remains constant for mpls tagged access traffic in some scenarios

Identifier	Headline
CSCvr06237	[LC36-Fullbox] : "show_fm_sysdb" crash seen after executing "show fm loc all" on SF-D12
CSCwc45223	Upgrade of NCS4K libraries
CSCvw82449	NCS4k: CFM CCM packets should skip QOS path so that they dont get impacted by User configured policy
CSCwa40257	Traffic hit of ~1sec on BGP-LU Backup Interface link shut/unshut
CSCwc45192	Upgrade of NCS4K Qemu component

Cisco Bug Search Tool

Use the Bug Search Tool (BST) to view the list of outstanding and resolved bugs in a release.

BST, the online successor to Bug Toolkit, is designed to improve the effectiveness in network risk management and device troubleshooting. The tool allows partners and customers to search for software bugs based on product, release, and keyword, and aggregates key data such as bug details, product, and version. The tool has provision to filter bugs based on credentials to provide external and internal bug views for the search input.

Search Bugs in BST

Procedure

Step 1 Go to https://bst.cloudapps.cisco.com/bugsearch. You will be prompted to log into Cisco.com. After successful login, the Bug Toolkit page open.

Step 2 Enter the bug ID in the Search For: field. To search for release bugs, enter the following parameters in the page:

a) Search For — Enter NCS4k in the text box.
b) Releases — Enter the release number.
c) Show Bugs — Select Affecting or Fixed in these Releases

Step 3 Press Enter.

- By default, the search results include bugs with all severity levels and statuses, and bugs that were modified during the life cycle of the bug. After you perform a search, you can filter your search results to meet your search requirements.
- An initial set of 25 search results is shown in the bottom pane. Drag the scroll bar to display the next set of 25 results. Pagination of search results is not supported.

Supported FPD Versions

The following command lists the FPD versions supported in Release 6.5.32

```
RP/0/RP0/CPU0:router#sh fpd package
Fri Aug 20 13:55:02.859 IST

================================ ============================================
                                        Field Programmable Device Package
                                 ============================================
                                           Req      SW       Min Req   Min Req
Card Type            FPD Description       Reload   Ver      SW Ver    Board Ver
================== ========================= ====== ======= ======== =========
------------------------------------------------------------------------------
NCS4009-FC-S         CCC-FPGA(A)               NO      1.05    1.05     0.1
                     CCC-Power-On(A)           NO      1.03    1.03     0.1
                     PLX-8608(A)               YES     0.03    0.03     0.1
                     SB Certificates(A)        NO      1.00    1.00     0.0
------------------------------------------------------------------------------
NCS4009-FC2-S        CCC-FPGA(A)               NO      2.05    2.05     0.1
                     CCC-Power-On(A)           NO      1.03    1.03     0.1
                     PLX-8714(A)               YES     0.04    0.04     0.1
                     SB Certificates(A)        NO      1.00    1.00     0.0
------------------------------------------------------------------------------
NCS4009-FC2-SP       CCC-FPGA(A)               NO      1.11    1.11     0.1
                     CCC-Power-On(A)           NO      1.03    1.03     0.1
                     PLX-8608(A)               YES     0.03    0.03     0.1
                     SB Certificates(A)        NO      1.00    1.00     0.0
------------------------------------------------------------------------------
NCS4009-FC2F-S       CCC-FPGA(A)               NO      2.05    2.05     0.1
                     CCC-Power-On(A)           NO      1.03    1.03     0.1
                     PLX-8714(A)               YES     0.04    0.04     0.1
                     SB Certificates(A)        NO      1.00    1.00     0.0
------------------------------------------------------------------------------
NCS4016-FC-M         CCC-FPGA(A)               NO      4.40    4.40     0.1
                     CCC-Power-On(A)           NO      1.14    1.14     0.1
                     PLX-8649(A)               YES     0.08    0.08     0.1
                     SB Certificates(A)        NO      1.00    1.00     0.0
------------------------------------------------------------------------------
NCS4016-FC-S         CCC-FPGA(A)               YES     0.05    0.01     0.1
                     CCC-Power-On(A)           YES     1.12    1.08     0.1
                     PLX-8649(A)               YES     0.08    0.08     0.1
                     SB Certificates(A)        NO      1.00    1.00     0.0
                     CCC-FPGA(A)               NO      5.07    5.07     0.1
                     CCC-Power-On(A)           NO      1.01    1.01     0.1
                     PLX-8649(A)               YES     0.08    0.08     0.1
                     SB Certificates(A)        NO      1.00    1.00     0.0
------------------------------------------------------------------------------
NCS4016-FC2-M        CCC-FPGA(A)               NO      1.35    1.35     0.1
                     CCC-Power-On(A)           NO      1.03    1.03     0.1
                     LTC2978_420848_ISP(A)     YES     1.00    1.00     0.0
                     PLX-8649(A)               YES     1.00    1.00     0.1
                     SB Certificates(A)        NO      1.00    1.00     0.0
------------------------------------------------------------------------------
NCS4K-20T-O-S        Backup-ZYNQ               YES     1.68    1.00     0.1
                     CCC-FPGA(A)               NO      3.27    3.27     0.1
                     CCC-Power-On(A)           NO      1.19    1.19     0.1
                     DIGI1                     YES     2.03    2.03     0.1
                     DIGI2                     YES     2.03    2.03     0.1
                     Ethernet-Switch(A)        YES     1.41    1.41     0.1
                     GENNUM                    YES     3.01    3.01     0.1
                     PLX-8618(A)               YES     0.09    0.09     0.1
```

	Primary-ZYNQ	NO	1.68	1.68	0.1
	SB Certificates(A)	NO	1.00	1.00	0.0
NCS4K-24LR-O-S	Backup-ZYNQ	YES	4.15	0.01	0.1
	CCC-FPGA(A)	NO	4.39	4.39	0.1
	CCC-Power-On(A)	NO	1.21	1.21	0.1
	Ethernet-Switch(A)	YES	1.38	1.38	0.1
	PLX-8618(A)	YES	0.11	0.11	0.1
	Primary-ZYNQ	NO	4.20	4.20	0.1
	SB Certificates(A)	NO	1.00	1.00	0.0
NCS4K-2H-O-K	Backup-ZYNQ	YES	1.55	0.01	0.1
	CCC-FPGA(A)	NO	3.38	3.38	0.1
	CCC-Power-On(A)	NO	1.19	1.19	0.1
	DIGI1	YES	2.03	2.03	0.1
	DIGI2	YES	2.03	2.03	0.1
	Ethernet-Switch(A)	YES	1.41	1.41	0.1
	GENNUM	YES	3.01	3.01	0.1
	LEPTON	NO	4.02	4.02	0.1
	PLX-8618(A)	YES	0.10	0.10	0.1
	Primary-ZYNQ	NO	1.56	1.56	0.1
	SB Certificates(A)	NO	1.00	1.00	0.0
NCS4K-2H-W	Backup-ZYNQ	NO	1.60	1.00	0.1
	CCC-FPGA(A)	NO	4.34	4.34	0.1
	CCC-Power-On(A)	NO	1.20	1.20	0.1
	EAGLE-0-FPD	NO	5.05	5.05	0.1
	EAGLE-1-FPD	NO	5.05	5.05	0.1
	Ethernet-Switch(A)	YES	1.35	1.35	0.1
	GN2411-FPD-1	YES	3.05	3.05	0.1
	GN2411-FPD-2	YES	3.05	3.05	0.1
	GN2411-FPD-3	YES	3.05	3.05	0.1
	GN2411-FPD-4	YES	3.05	3.05	0.1
	PLX-8608(A)	YES	0.10	0.10	0.1
	Primary-ZYNQ	NO	1.60	1.60	0.1
	SB Certificates(A)	NO	1.00	1.00	0.0
NCS4K-2H10T-OP-KS	Backup-ZYNQ	YES	1.91	1.00	0.1
	CCC-FPGA(A)	NO	1.50	1.50	0.1
	CCC-Power-On(A)	NO	1.14	1.14	0.1
	DIGI1	YES	2.03	2.03	0.1
	DIGI2	YES	2.03	2.03	0.1
	Ethernet-Switch(A)	YES	1.02	1.02	0.1
	GRIMA	YES	1.51	1.51	0.1
	PLX-8649(A)	YES	0.11	0.11	0.1
	Primary-ZYNQ	NO	1.91	1.91	0.1
	SB Certificates(A)	NO	1.00	1.00	0.0
NCS4K-4H-OP-K	Backup-ZYNQ	YES	0.09	0.09	0.1
	CCC-FPGA(A)	YES	2.02	2.02	0.1
	CCC-Power-On(A)	YES	1.09	1.09	0.1
	DIGI1	NO	2.03	2.03	0.1
	DIGI2	NO	2.03	2.03	0.1
	Ethernet-Switch(A)	YES	1.01	1.01	0.1
	LEPTON	NO	5.00	5.00	0.1
	PLX-8649(A)	YES	0.01	0.01	0.1
	Primary-ZYNQ	NO	1.09	1.09	0.1
	SB Certificates(A)	NO	1.00	1.00	0.0
NCS4K-4H-OPW-QC2	Backup-MELKOR	YES	6.00	6.00	0.1
	Backup-ZYNQ	NO	4.11	4.11	0.1
	CCC-FPGA(A)	NO	1.01	1.01	0.1
	CCC-Power-On(A)	NO	1.12	1.12	0.1
	DENALI	NO	13.48	13.48	0.1

	DIGI1	YES	2.02	2.02	0.1
	DIGI2	YES	2.02	2.02	0.1
	Ethernet-Switch(A)	YES	1.51	1.51	0.1
	PLX-8750(A)	YES	0.10	0.10	0.1
	Primary-MELKOR	NO	6.01	6.01	0.1
	Primary-ZYNQ	NO	4.11	4.11	0.1
	SB Certificates(A)	NO	1.00	1.00	0.0
	SMAUG	YES	0.10	0.10	0.1
NCS4K-AC-PSU	AB-PriMCU(A)	NO	1.31	1.31	0.1
	AB-Sec54vMCU(A)	NO	1.49	1.49	0.1
	AB-Sec5vMCU(A)	NO	1.43	1.43	0.1
	DT-PriMCU(A)	NO	3.00	3.00	1.0
	DT-PriMCU(A)	NO	1.06	1.06	0.2
	DT-PriMCU(A)	NO	2.01	2.01	0.3
	DT-Sec54vMCU(A)	NO	4.00	4.00	1.0
	DT-Sec54vMCU(A)	NO	2.03	2.03	0.2
	DT-Sec54vMCU(A)	NO	3.02	3.02	0.3
	DT-Sec5vMCU(A)	NO	3.01	3.01	1.0
	DT-Sec5vMCU(A)	NO	1.09	1.09	0.2
	DT-Sec5vMCU(A)	NO	2.02	2.02	0.3
NCS4K-CRAFT	Craft-NCS4009(A)	NO	1.04	1.04	0.1
	Craft-NCS4016(A)	NO	1.04	1.04	0.1
NCS4K-DC-PSU-V1	AB-PriMCU(A)	NO	4.01	4.01	0.1
	AB-Sec54vMCU(A)	NO	4.02	4.02	0.1
	AB-Sec5vMCU(A)	NO	4.03	4.03	0.1
	DT-Pri2MCU(A)	NO	3.02	3.02	1.0
	DT-PriMCU(A)	NO	3.02	3.02	1.0
	DT-Sec54v2MCU(A)	NO	3.01	3.00	1.0
	DT-Sec54vMCU(A)	NO	3.01	3.00	1.0
	DT-Sec5vMCU(A)	NO	3.08	3.08	1.0
NCS4K-ECU	ECU-FPGA(A)	NO	3.01	3.01	0.1
NCS4K-ECU2	ECU-FPGA(A)	NO	5.01	5.01	0.1
NCS4K-FTA	Fantray-FPGA(A)	NO	3.01	3.01	0.1
NCS4K-RP	Backup-BIOS(A)	YES	14.04	1.00	0.1
	Backup-CCC-PwrOn(A)	YES	1.22	1.00	0.1
	Backup-EthSwitch(A)	YES	1.36	1.00	0.1
	Backup-Timing(A)	YES	5.01	3.00	0.1
	BP-FPGA(A)	NO	3.21	3.21	0.1
	CCC-Bootloader(A)	YES	4.29	4.08	0.1
	CCC-FPGA(A)	YES	4.29	4.29	0.1
	CCC-Power-On(A)	YES	1.23	1.23	0.1
	CPU-Complex-BckKey(A)	YES	1.00	1.00	0.1
	CPU-Complex-Boot(A)	YES	2.09	2.04	0.1
	CPU-Complex-FPGA(A)	YES	2.09	2.09	0.1
	CPU-Complex-PriKey(A)	YES	1.00	1.00	0.1
	Ethernet-Switch(A)	YES	1.36	1.36	0.1
	PLX-8649(A)	YES	0.08	0.08	0.1
	PLX-8696(A)	YES	0.05	0.05	0.1
	Primary-BIOS(A)	YES	14.04	14.04	0.1
	SB Backup Key(A)	NO	1.00	1.00	0.0
	SB Certificates(A)	NO	1.00	1.00	0.0
	SB Primary Key(A)	NO	1.00	1.00	0.0
	SMART-iSATA(A)	NO	7.05	7.05	0.0
	SMART-SATA(A)	NO	7.05	7.05	0.0
	Timing-FPGA(A)	YES	5.01	5.01	0.1
NCS4KF-CRAFT	Craft-NCS4K-FCC(A)	NO	1.07	1.07	0.1

```
--------------------------------------------------------------------------------
NCS4KF-FC2-C          Back-CRE-FPGA-MB(A)        YES     1.05    1.05    0.0
                      CCC-FPGA(A)                YES     1.26    1.26    0.1
                      CCC-Power-On(A)            YES     1.05    1.05    0.1
                      CRE-FPGA-MB(A)             YES     1.05    1.05    0.0
                      LTC2978_42094A_ISP(A)      YES     1.00    1.00    0.0
                      LTC3882_42094A_ISP(A)      YES     1.00    1.00    0.0
                      PLX-8713(A)                YES     0.06    0.06    0.1
                      SB Certificates(A)         NO      1.00    1.00    0.0
                      Back-CRE-FPGA-MB(A)        YES     1.05    1.05    0.0
                      CCC-FPGA(A)                YES     1.26    1.26    0.1
                      CCC-Power-On(A)            YES     1.05    1.05    0.1
                      CRE-FPGA-MB(A)             YES     1.05    1.05    0.0
                      LTC2978_42094A_ISP(A)      YES     1.00    1.00    0.0
                      LTC2978_42094E_ISP(A)      YES     1.00    1.00    0.0
                      LTC3882_42094A_ISP(A)      YES     1.00    1.00    0.0
                      LTC3882_42094E_ISP(A)      YES     1.00    1.00    0.0
                      PLX-8713(A)                YES     0.06    0.06    0.1
                      SB Certificates(A)         NO      1.00    1.00    0.0
--------------------------------------------------------------------------------
NCS4KF-FTA            Backup-Fantray(A)          NO      2.03    2.03    0.1
                      Fantray-FPGA(A)            NO      2.04    2.04    0.1
--------------------------------------------------------------------------------
NCS4KF-RPMC           Backup-BIOS(A)             YES    14.09   14.00    0.0
                      Backup-CCC-PwrOn(A)        NO      2.01    1.38    0.0
                      Backup-EthSwitch(A)        YES     1.33    1.33    0.0
                      CCC-Bootloader(A)          YES     3.07    2.01    0.0
                      CCC-FPGA(A)                YES     3.07    3.07    0.0
                      CCC-Power-On(A)            NO      2.01    2.01    0.0
                      CPU Backup_Key(A)          NO      1.00    1.00    0.0
                      CPU Primary_Key(A)         NO      1.00    1.00    0.0
                      CPU-Complex-BOOT(A)        YES     4.09    4.04    0.1
                      CPU-Complex-FPGA(A)        YES     4.09    4.09    0.1
                      Ethernet-Switch(A)         YES     1.33    1.33    0.0
                      LTC2977_1F0807_DB_ISP.hex( YES     1.00    1.00    0.0
                      LTC2977_1F0807_MB_ISP.hex( YES     1.00    1.00    0.0
                      PLX-8625(A)                YES     0.05    0.05    0.0
                      Primary-BIOS(A)            YES    14.09   14.09    0.0
                      SB Backup Key(A)           NO      1.00    1.00    0.0
                      SB Certificates(A)         NO      1.00    1.00    0.0
                      SB Primary Key(A)          NO      1.00    1.00    0.0
                      SMART-iSATA(A)             NO      7.05    7.05    0.0
                      SMART-SATA(A)              NO      7.05    7.05    0.0
--------------------------------------------------------------------------------
NCS4KF-RPMC (SW)      CCC-FPGA(A)                YES     2.06    2.06    0.0
                      CCC-Power-On(A)            NO      2.01    2.01    0.0
                      LTC2977_1F0808_MB_ISP.hex( YES     1.00    1.00    0.0
                      PLX-8614(A)                YES     0.06    0.06    0.0
                      SB Certificates(A)         NO      1.00    1.00    0.0
--------------------------------------------------------------------------------
P-S-FANTRAY           Fantray-FPGA(A)            NO      2.04    2.04    0.2
RP/0/RP0/CPU0:router#
```

Supported Craft Firmware Version

The following table lists the Craft firmware versions supported in Release 6.5.32.

Craft	Firmware Version
NCS4K-CRAFT	2.9.46

NCS4KF-CRAFT	2.9.46