Release Notes for Cisco NCS 4000 Series, Cisco IOS XR Release 6.5.29

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The release notes contain information about the new features introduced in the Cisco NCS 4000 Series. For detailed information regarding features, capabilities, hardware, and software introduced with this release, see the guides listed in the *Additional References* section.

Revision History

Date	Notes
February 2020	This is the first release of this publication.

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

New Features for Release 6.5.29

Note Before you dive into this release's features, we invite you to content.cisco.com to experience the features of the Cisco Content Hub. Here, you can, among other things:

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This section highlights new NCS 4000 features for Release 6.5.29:

Software

The following software features have been introduced in Release 6.5.29:

Ethernet Data Plane Loopback

The ethernet data plane loopback (EDPL) feature provides a means for remotely testing the throughput of an ethernet port. You can verify the maximum rate of frame transmission with no frame loss.

Flex LSP Enhancement

This is an extension to existing flex LSP feature. The new support includes Path Protection Switch Over (PPSO) Recovery, Protecting LSP Re-optimization, SRLG-Aware Path Protection, Sticky Paths , and Non-revertive (NRV) Behavior .

Flex LSP Interoperability

This feature enables the XR platform bidirectional LSPs to interoperate with XE platform. A compatibility configuration switch is introduced to enable interoperability.

Ethernet SLA

The Cisco Ethernet SLA feature provides the architecture to monitor a network at Layer 2. This architecture provides functions such as collecting, storing, displaying, and analyzing SLA statistics. These SLA statistics can be stored and displayed in various ways.

Cisco provides Y.1731 performance monitoring using the Cisco Ethernet SLA feature. The major functions of performance monitoring are:

- Sending probes consisting of one or more packets to measure performance
- Scheduling of operations consisting of periodic probes
- Collecting and storing results
- Analyzing and displaying results

Scale Enhancements

Scale enhancements have been done for Flex LSP, MPLS-TE, CFM, and VPWS.

OLR support for Mid Node Multi Chassis System

For multi chassis (MC) systems, OLR is supported only on the mid node MC system. Tunnels and pseudowires which are configured on the head and tail nodes pass through the mid node. While preparing the mid node MC system for OLR, the standby RPs of the LCCs and one of the switch controllers for each of the FCCs, must first be updated to the latest software version. The active RPs of the LCCs and the other switch controllers of the FCCs are updated after.

For more information on the above software features, see the *Configuration Guide for Cisco NCS 4000 Series*.

External Caveats

External Bugs in Release 6.5.29

The following list contains known issues for Release 6.5.29:

Caveat ID Number	Description
CSCvr52039	Host and Admin version mismatch on RP0 and all LC's went for graceful reload
CSCvr74182	6528-fcs:After multiple lcvm switch over the LC 0/0 went for pon due to soc_init failure
CSCvs38893	6529-NCS4k-SIT : 'Auto-bw' LSP switch even when 'max-metric' is configured on the links
CSCvs67291	[MC-OLR]:Post Plane A LC reload, few interfaces are not present in MPLS TE topology

Caveat ID Number	Description
CSCvs71445	[MC-OLR] During CAL-ISSU , post active RP activation , F0/SC0 didn't go for reload.
CSCvs78142	6529-8I:[explicit path]After shutting down of Controller at Mid node,BFD tunnels are getting flapped
CSCvs78469	[MC-OLR]:After Calvados Active RP activation , L3 LAG is down
CSCvs81034	NCS4K SIT : R6529 : EnvMon process forcefully reloads, when you perform a RP hard reload
CSCvs81120	NCS4K : R6529 : MLAP Alarm reported in Calvados and not seen on XR
CSCvs81354	NCS4K : R6529 : Alarm manager process forcefully reloads after 1/RP0 reload
CSCvs81758	NCS4K : R6529 : Rarely RP reload of 1/RP0 causes VM reload on 1/RP1

Supported FPD Versions

The following table lists the FPD versions supported in Release 6.5.29

FPD	FPD Description	Req. Reload	S/W Version	Min. Req. S/W Version
NCS4009-FC-S	CCC-FPGA	No	1.05	1.05
	CCC-Power-On	No	1.03	1.03
	PLX-8608	Yes	0.03	0.03
NCS4009-FC2-S	CCC-FPGA	No	2.05	2.05
	CCC-Power-On	No	1.03	1.03
	PLX-8714	Yes	0.04	0.04
NCS4009-FC2-SP	CCC-FPGA	No	1.11	1.11
	CCC-Power-On	No	1.03	1.03
	PLX-8608	Yes	0.03	0.03
NCS4009-FC2F-S	CCC-FPGA	No	2.05	2.05
	CCC-Power-On	No	1.03	1.03
	PLX-8714	Yes	0.04	0.04
NCS4016-FC-M	CCC-FPGA	No	4.40	4.40
	CCC-Power-On	No	1.14	1.14
	PLX-8649	Yes	0.08	0.08

NCS4016-FC-S	CCC-FPGA	No	5.07	5.07
	CCC-Power-On	No	1.01	1.01
	PLX-8649	Yes	0.08	0.08
NCS4016-FC-S	CCC-FPGA	Yes	0.05	0.01
	CCC-Power-On	Yes	1.12	1.08
	PLX-8649	Yes	0.08	0.08
NCS4016-FC2-M	CCC-FPGA	No	1.35	1.35
	CCC-Power-On	No	1.03	1.03
	PLX-8649	Yes	1.00	1.00
NCS4K-2OT-O-S	CCC-FPGA	No	3.27	3.27
	CCC-Power-On	No	1.19	1.19
	Ethernet - Switch	Yes	1.41	1.41
	PLX-8618	Yes	0.09	0.09
NCS4K-24LR-O-S	CCC-FPGA	No	4.39	4.39
	CCC-Power-On	No	1.21	1.21
	Ethernet - Switch	Yes	1.38	1.38
	PLX-8618	Yes	0.11	0.11
NCS4K-2H-O-K	CCC-FPGA	No	3.38	3.38
	CCC-Power-On	No	1.19	1.19
	Ethernet - Switch	Yes	1.41	1.41
	PLX-8618	Yes	0.10	0.10
NCS4K-2H-W	CCC-FPGA	No	4.34	4.34
	CCC-Power-On	No	1.20	1.20
	Ethernet - Switch	Yes	1.35	1.35
	PLX-8608	Yes	0.10	0.10
NCS4K-2H10T-OP-KS	CCC-FPGA	No	1.50	1.50
	CCC-Power-On	No	1.14	1.14
	Ethernet - Switch	Yes	1.02	1.02
	PLX-8649	Yes	0.11	0.11
NCS4K-4H-OP-K	CCC-FPGA	Yes	2.02	2.02
	CCC-Power-On	Yes	1.09	1.09
	Ethernet - Switch	Yes	1.01	1.01
	PLX-8649	Yes	0.01	0.01

NCS4K-4H-OPW-QC2	CCC-FPGA	No	0.29	0.29
	CCC-Power-On	No	1.12	1.12
	Ethernet-Switch	Yes	1.51	1.51
	PLX-8750	Yes	0.10	0.10
NCS4K-AC-PSU	AB-PriMCU	No	1.31	1.31
	AB-Sec54vMCU	No	1.49	1.49
	AB-Sec5vMCU	No	1.43	1.43
	DT-PriMCU	No	3.00	3.00
	DT-PriMCU	No	1.06	1.06
	DT-PriMCU	No	2.01	2.01
	DT-Sec54vMCU	No	4.00	4.00
	DT-Sec54vMCU	No	2.03	2.03
	DT-Sec54vMCU	No	3.02	3.02
	DT-Sec5vMCU	No	3.01	3.01
	DT-Sec5vMCU	No	1.09	1.09
	DT-Sec5vMCU	No	2.02	2.02
NCS4K-CRAFT	Craft-NCS4009	No	1.04	1.04
	Craft-NCS4016	No	1.04	1.04
NCS4K-DC-PSU-V1	AB-PriMCU	No	4.01	4.01
	AB-Sec54vMCU	No	4.02	4.02
	AB-Sec5vMCU	No	4.03	4.03
	DT-Pri2MCU	No	3.02	3.02
	DT-PriMCU	No	3.02	3.02
	DT-Sec54v2MCU	No	3.01	3
	DT-Sec54v2MCU	No	3.01	3
	DT-Sec54vMCU	No	3.08	3.08
NCS4K-ECU	ECU-FPGA	No	3.01	3.01
NCS4K-ECU2	ECU-FPGA	No	4.08	4.08
NCS4K-FTA	Fantray-FPGA	No	3.01	3.01

NCS4K-RP	BACKUP-BIOS	Yes	14.04	1.00
	Backup-CCC-PwrOn	Yes	1.22	1.00
	Backup-Ethswitch	Yes	1.36	1.00
	Backup-Timing	Yes	3.95	3.00
	BP-FPGA	No	3.21	3.21
	CCC-Bootloader	Yes	4.29	4.08
	CCC-FPGA	Yes	4.29	4.29
	CCC-Power-On	Yes	1.23	1.23
	CPU-Complex-Boot	Yes	2.09	2.04
	CPU-Complex-FPGA	Yes	2.09	2.09
	Ethernet - Switch	Yes	1.36	1.36
	PLX-8649	Yes	0.08	0.08
	PLX-8696	Yes	0.05	0.05
	Primary-BIOS	Yes	14.04	14.04
	Timing FPGA	Yes	3.95	3.95
NCS4KF-CRAFT	Craft-NCS4K-FCC	No	1.07	1.07
NCS4KF-FC2-C	Back-CRE-FPGA-MB	Yes	1.05	1.05
	CCC-FPGA	Yes	1.26	1.26
	CCC-Power-On	Yes	1.05	1.05
	CRE-FPGA-MB	Yes	1.05	1.05
	PLX-8713	Yes	0.06	0.06
NCS4KF-FTA	Backup-Fantray	No	2.03	2.03
	Fantray-FPGA	No	2.04	2.04

NCS4KF-RPMC	Backup-BIOS	Yes	14.09	14.00
	Backup-CCC-PwrOn	No	2.01	1.38
	Backup-EthSwitch	Yes	1.33	1.33
	CCC-Bootloader	Yes	3.07	2.01
	CCC-FPGA	Yes	3.07	3.07
	CCC-Power-On	No	2.01	2.01
	CPU-Complex-BOOT	Yes	4.09	4.04
	CPU-Complex-FPGA	Yes	4.09	4.09
	Ethernet-Switch	Yes	1.33	1.33
	PLX-8625	Yes	0.05	0.05
	Primary-BIOS	Yes	14.09	14.09
	SMART-iSATA	No	7.05	7.05
	SMART-SATA	No	7.05	7.05
NCS4KF-RPMC (SW)	CCC-FPGA	Yes	2.06	2.06
	CCC-Power-On	No	2.01	2.01
	PLX-8614	Yes	0.06	0.06
P-S-FANTRAY	Fantray-FPGA	No	2.04	2.04

Supported Craft Firmware Version

The following table lists the Craft firmware versions supported in Release 6.5.29.

Craft	Firmware Version
NCS4K-CRAFT	2.9.46
NCS4KF-CRAFT	2.9.46

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://tools.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.

Additional References

Related Documentation

Use the release notes with the following publications:

Document Title	Description
Hardware Installation Guide for Cisco NCS 4000 Series	Provides installation information about the Cisco NCS 4009 and Cisco NCS 4016 chassis.
Cisco Network Convergence System 4000 Series Unpacking, Moving, and Securing Guide	Provides instructions for unpacking the Cisco NCS 4009 and Cisco NCS 4016 chassis, moving the chassis to its permanent location, and mounting the chassis in a rack.
Regulatory Compliance and Safety Information for the Cisco NCS 4000 Series	Provides the international agency compliance, safety, and statutory information that apply to Cisco NCS 4009 and Cisco NCS 4016 chassis.
Configuration Guide for Cisco NCS 4000 Series	Provides background and reference material, procedures to configure and maintain the Cisco NCS 4009 and Cisco NCS 4016 chassis.

Document Title	Description
Command Reference for Cisco NCS 4000 Series	Provides the various commands available to configure and maintain the Cisco NCS 4009 and Cisco NCS 4016 chassis.
System Setup and Software Installation Guide for Cisco NCS 4000 Series	Provides instructions to set up the system and perform software installation.
Alarms Troubleshooting Guide for Cisco NCS 4000 Series	Provides a description, severity, and troubleshooting procedure for each commonly encountered NCS 4000 alarm and condition.
Cisco IOS XR System Error Message Reference Guide	Provides a list of the Cisco IOS XR system error messages for all Cisco IOS XR platforms
Quality of Service Configuration Guide for Cisco NCS 4000 Series	Provides features available to configure and maintain Quality of Service (QoS) for the Cisco NCS 4000 Series Routers.
Quality of Service Command Reference for Cisco NCS 4000 Series	Provides various commands available to configure and maintain Quality of Service (QoS) for the Cisco NCS 4000 Series Routers.
Migration of Single Chassis to Multi Chassis for Cisco NCS 4000 Series	Provides configuration procedures for the supported multi chassis configurations.

Technical Assistance

Link	Description
http://www.cisco.com/cisco/web/support/index.html	The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies. To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.