Release Notes for Cisco NCS 4206 and Cisco NCS 4216 Series, Cisco IOS XE Dublin 17.12.x

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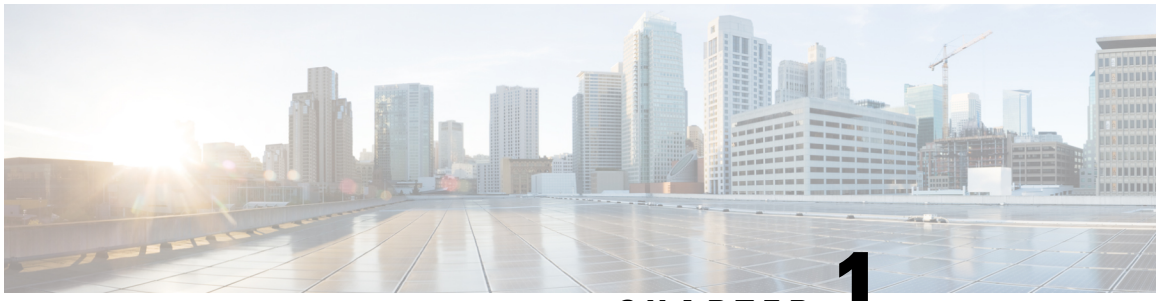
Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
http://www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

CONTENTS



CHAPTER 1

Introduction

This document provides information about the IOS XE software release for the Cisco NCS 4206 and Cisco NCS 4216 beginning with Cisco IOS XE Release 3.18SP.

Overview of Cisco NCS 4206 and NCS 4216

Cisco NCS 4206

The Cisco NCS 4206 is a fully-featured aggregation platform designed for the cost-effective delivery of converged mobile and business services. With shallow depth, low power consumption, and an extended temperature range, this compact 3-rack-unit (RU) chassis provides high service scale, full redundancy, and flexible hardware configuration.

The Cisco NCS 4206 expands the Cisco service provider product portfolio by providing a rich and scalable feature set of Layer 2 VPN (L2VPN) and Layer 3 VPN (L3VPN) services in a compact package. It also supports a variety of software features, including Carrier Ethernet features, Timing over Packet, and pseudowire.

For more information on the Cisco NCS 4206 Chassis, see the Cisco NCS 4206 Hardware Installation Guide.

Cisco NCS 4216

The Cisco NCS 4216 is a seven-rack (7RU) unit chassis that belongs to the Cisco NCS 4200 family of chassis. This chassis complements Cisco's offerings for IP RAN solutions for the GSM, UMTS, LTE and CDMA. Given it's form-factor, interface types and Gigabit Ethernet density the Cisco NCS 4216 can also be positioned as a Carrier Ethernet aggregation platform.

The Cisco NCS 4216 is a cost optimized, fully redundant, centralized forwarding, extended temperature, and flexible pre-aggregation chassis.

For more information about the Cisco NCS 4216 Chassis, see the Cisco NCS 4216 Hardware Installation Guide.

NCS 4216 14RU

The Cisco NCS 4216 F2B is a 14-rack unit router that belongs to the Cisco NCS 4200 family of routers. This router complements Cisco's offerings for IP RAN solutions for the GSM, UMTS, LTE, and CDMA. Given its form-factor, interface types, and Gigabit Ethernet density the Cisco NCS 4216 14RU can also be positioned as a Carrier Ethernet aggregation platform.

The Cisco NCS 4216 14RU is a cost optimized, fully redundant, centralized forwarding, extended temperature, and flexible pre-aggregation router.

For more information about the Cisco NCS 4216 F2B Chassis, see the Cisco NCS 4216 F2B Hardware Installation Guide.

Feature Navigator

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

Hardware Supported

The following sections list the hardware supported for Cisco NCS 4206 and Cisco NCS 4216 chassis.

Cisco NCS 4206 Supported Interface Modules

Supported Interface Modules

Note If the **license feature service-offload enable** command is configured, then the NCS4200-1T8LR-PS IM is not supported in the router for RSP3.

Note There are certain restrictions in using the interface modules on different slots in the chassis. Contact Cisco Sales/Support for the valid combinations.

Note FAN OIR is applicable every time the IM based fan speed profile is switched to NCS4200-1H-PK= and NCS4200-2Q-P interface modules. Even though the IMs remain in the Out-of-Service state, they are still considered as present in the chassis.

Table 1: NCS420X-RSP Supported Interface Modules and Part Numbers

RSP Module	Supported Interface Modules	Part Numbers	Slot
NCS420X-RSP	8-port 10 Gigabit Ethernet Interface Module (8X10GE)	NCS4200-8T-PS	All
	1-port 100 Gigabit Ethernet Interface Module (1X100GE)	NCS4200-1H-PK=	4 and 5
	2-port 40 Gigabit Ethernet QSFP Interface Module (2X40GE)	NCS4200-2Q-P	4 and 5
	8/16-port 1 Gigabit Ethernet (SFP/SFP) + 1-port 10 Gigabit Ethernet (SFP+) / 2-port 1 Gigabit Ethernet (CSFP) Interface Module	NCS4200-1T16G-PS	0,3,4, and 5
	1-port OC-192 Interface module or 8-port Low Rate Interface Module	NCS4200-1T8S-10CS	2,3,4, and 5
	NCS 4200 1-Port OC-192 or 8-Port Low Rate CEM 20G Bandwidth Interface Module	NCS4200-1T8S-20CS	2,3,4, and 5[1]
	48-port T1/E1 CEM Interface Module	NCS4200-48T1E1-CE	All
	48-port T3/E3 CEM Interface Module	NCS4200-48T3E3-CE	All
	2-port 100 Gigabit Ethernet (QSFP) Interface Module (2X100GE)[2]	NCS4200-2H-PQ	4,5
	1-port OC48[3]/ STM-16 or 4-port OC-12/OC-3 / STM-1/STM-4 + 12-port T1/E1 + 4-Port T3/E3 CEM Interface Module	NCS4200-3GMS	2,3,4, and 5

1 These slots are supported on 10G or 20G mode.
2 IM supports only one port of 100G with RSP3 as QSFP28 on Port 0 in both slots 4 and 5.
3 If OC48 is enabled, then the remaining 3 ports are disabled.

Table 2: NCS420X-RSP-128 Supported Interface Modules and Part Numbers

RSP Module	Supported Interface Modules	Part Numbers	Slot
NCS420X-RSP	SFP Combo IM—8-port Gigabit Ethernet (8X1GE) + 1-port 10 Gigabit Ethernet Interface Module (1X10GE)	NCS4200-1T8LR-PS	All
	8-port T1/E1 CEM Interface Module	NCS4200-8E1T1-CE	All
	1-port OC48[4]/ STM-16 or 4-port OC-12/OC-3 / STM-1/STM-4 + 12-port T1/E1 + 4-Port T3/E3 CEM Interface Module	NCS4200-3GMS	2,3,4, and 5

4 If OC48 is enabled, then the remaining 3 ports are disabled.

Cisco NCS 4216 Supported Interface Modules

For information on supported interface modules, see Supported Interface Modules.

Cisco NCS 4216 F2B Supported Interface Modules

For information on supported interface modules, see Supported Interface Modules.

Restrictions and Limitations

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.

- Embedded Packet Capture (EPC) is not supported on ASR 900 routers.
- From the Cisco IOS XE 16.6.1 releases, In-Service Software Upgrade (ISSU) is not supported on the router to the latest releases. For more information on the compatible release versions, see ISSU Support Matrix.
- ISSU is not supported between a Cisco IOS XE 3S release and the Cisco IOS XE Bengaluru 17.6.x release.
- The port restriction on 1-port OC-192 or 8-port low rate CEM interface module is on port pair groups. If you have OC48 configured on a port, the possible port pair groups are 0–1, 2–3, 4–5, 6–7. If one of the ports within this port group is configured with OC48 rate, the other port cannot be used.
- RS422 pinout works only on ports 0–7.
- The **ip cef accounting** command is *not* supported on the router.
- Configuration sync does *not* happen on the Standby RSP when the active RSP has Cisco Software Licensing configured, and the standby RSP has Smart Licensing configured on the router. If the active RSP has Smart Licensing configured, the state of the standby RSP is undetermined. The state could be pending or authorized as the sync between the RSP modules is not performed.
- Evaluation mode feature licenses may not be available to use after disabling, and enabling the smart licensing on the RSP2 module. A reload of the router is required.

- Ingress counters are not incremented for packets of the below format on the RSP3 module for the 10-Gigabit Ethernet interfaces, 100-Gigabit Ethernet interfaces, and 40-Gigabit Ethernet interfaces:

  Packet Format

  MAC header---->VLAN header---->Length/Type

  When these packets are received on the RSP3 module, the packets are not dropped, but the counters are not incremented.

- T1 SAToP, T3 SAToP, and CT3 are supported on an UPSR ring only with local connect mode. Cross-connect configuration of T1, T3, and CT3 circuits to UPSR are not supported.
- PTP is not supported when 8-port 10-Gigabit Ethernet interface module is in oversubscribed mode.
- Port channel 61–64 is not supported in the 16.11.1a release. The range of configurable port channel interfaces has been limited to 60.
- Effective with Cisco IOS XE Everest 16.6.1, the VPLS over Port-channel (PoCH) scale is reduced from 48 to 24 for Cisco ASR 903 RSP3 module.

Note The PoCH scale for Cisco ASR 907 routers is 48.

- The frame drops may occur for packets with packet size of less than 100 bytes, when there is a line rate of traffic over all 1G or 10G interfaces available in the system. This restriction is applicable only on RSP2 module, and is not applicable for RSP3 module.
- One Ternary Content-Addressable Memory (TCAM) entry is utilized for Segment Routing Performance Measurement. This is required for the hardware timestamping to function.
- While performing an auto upgrade of ROMMON, only primary partition is upgraded. Use the **upgrade rom-mon filename** command to upgrade the secondary partition of the ROMMON during the auto upgrade. However, the router can be reloaded during the next planned reload to complete the secondary ROMMON upgrade. This is applicable to ASR 903 and ASR 907 routers.
- In the Cisco IOS XE 17.1.1 release, the EVPN EVI type is VLAN-based by default, and while configuring for the EVPN EVI type, it is recommended to configure the EVPN EVI type as VLAN-based, VLAN bundle and VLAN aware model.
- For Cisco IOS XE Gibraltar Release 16.9.5, Cisco IOS XE Gibraltar Release 16.12.3, and Cisco IOS XE Amsterdam 17.1.x, a minimum disk space of 2 MB is required in the boot flash memory file system for a successful ROMMON auto upgrade process. For a disk space lesser than 2 MB, ROMMON auto upgrade fails and the router reboots. This is applicable to Cisco ASR 903 and Cisco ASR 907 routers.
- In the Cisco IOS XE 16.12.1, 17.1.1, and 17.2.1 releases, IPsec is not supported on the Cisco RSP3 module.
- CEM circuit provisioning issues may occur during downgrade from Cisco IOS XE Amsterdam 17.3.1 to any lower versions or during upgrade to Cisco IOS XE Amsterdam 17.3.1 from any lower versions, if the CEM scale values are greater than 10500 APS/UPSR in protected CEM circuits. So, ensure that the CEM scale values are not greater than 10500, during ISSU to or from 17.3.1.
- Some router models are not fully compliant with all IETF guidelines as exemplified by running the pyang tool with the **lint** flag. The errors and warnings that are exhibited by running the pyang tool with the **lint** flag are currently noncritical as they do not impact the semantic of the models or prevent the models

from being used as part of the toolchains. A script has been provided, "check-models.sh", that runs pyang with **lint** validation enabled, but ignoring certain errors. This allows the developer to determine what issues may be present.

As part of model validation for the Cisco IOS XE Amsterdam 17.3.1 release, "LEAFREF_IDENTIFIER_NOT_FOUND" and "STRICT_XPATH_FUNCTIONS" error types are ignored.

- Test Access Port (TAP) is not supported when the iMSG VLAN handoff feature is enabled on the same node.
- Data Communication Channel (DCC) is not supported in the NCS4200-1T8S-20CS interface module for the Cisco IOS XE Cupertino 17.8.1 release.
- In Cisco IOS XE Dublin 17.12.1, for mLDP Partitioned multicast distribution tree (MDT) to work with PIM-Sparse Mode (SM) traffic, configure only a single ingress PE and ensure that the **strict-rpf interface** command is disabled. Configuring multiple PE ingress is not allowed.
- SF and SD alarms are not supported on T1 and T3 ports for the following interface modules:
  - NCS4200-3GMS
  - NCS4200-48T3E3-CE
  - NCS4200-48T1E1-CE
- In RSP2 and RSP3 modules, during In-Service Software Upgrade (ISSU), interface modules undergo FPGA upgrade.

  The following table details the IM Cisco IOS XE versions during ISSU with respect to FPGA upgrade and the impact of traffic flow for these IMs:

Table 3: Impact on IM during ISSU and FPGA Upgrade

IM	IM Version During ISSU	Pre-ISSU FPGA Upgrade	Post-ISSU Impact on IM	FPGA Version post ISSU
Phase 1	Cisco IOS XE 17.3.x or earlier version to Cisco IOS XE 17.4.x	FPGA upgrade completes and IM starts after the reload process. FPGA version (phase -1) - 0.47	Traffic is impacted during upgrade.	0.75

IM	IM Version During ISSU	Pre-ISSU FPGA Upgrade	Post-ISSU Impact on IM	FPGA Version post ISSU
Phases 1 and 2	Version earlier to Cisco IOS XE 17.8.x	FPGA upgrade completes and IM starts after the reload process. • FPGA version (Phase 1)— 0.47 • FPGA version (Phase 2) • ~~NCS4200-8T-PS—0.22~~ • Combo IM: 69.24	Traffic is impacted during upgrade.	• FPGA version (Phase 1)—0.75 • FPGA version (Phase 2) • ~~NCS4200-8T-PS—0.24~~ • Combo IM: 69.32
Phase 1	Cisco IOS XE 17.4.1 or later versions to Cisco IOS XE 17.8.1	IM FPGA already upgraded with the latest version and reload is not required.	Traffic is not impacted.	0.75

For more information on the FPGA versions, see Supported FPGA Versions.

Refer the following table for supported IMs:

Table 4: NCS 4200 Supported Ethernet Interface Module

Phase 1 IM	Phase 2 IM	Phase 3 IM
NCS4200-1T8LR	NCS4200-1T8LR-PS	NCS4200-8T-PS
		NCS4200-2Q-P
		NCS4200-2H-PQ

Determining the Software Version

You can use the following commands to verify your software version:

- Consolidated Package—**show version**
- Individual sub-packages—**show version installed** (lists all installed packages)

Upgrading to a New Software Release

Only the latest consolidated packages can be downloaded from Cisco.com; users who want to run the router using individual subpackages must first download the image from Cisco.com and extract the individual subpackages from the consolidated package.

For information about upgrading to a new software release, see the Upgrading the Software on the Cisco NCS 4200 Series Routers .

Upgrading the FPD Firmware

FPD Firmware packages are bundled with the software package. FPD upgrade is automatically performed ont the router.

If you like to manually change the FPD Firmware software, use the **upgrade hw-module subslot 0/0 fpd bundle** to perform FPD frmware upgrade.

Supported FPGA Versions for NCS 4206 and NCS 4216

Use the **show hw-module all fpd** command to display the IM FPGA version on the chassis.

Use the **show platform software agent iomd** [*slot/subslot*] **firmware cem-fpga** command to display the CEM FPGA version on the chassis.

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

Note During ISSU, TDM interface modules are reset for FPGA upgrade.

Table 5: Supported TDM IM and CEM FPGAs for NCS 4206-RSP3 and NCS 4216

Category	Cisco IOS XE Release	48 X T1/E1 CEM Interface Module FPGA	48 X T3/E3 CEM Interface Module FPGA	OC-192 Interface Module + 8-port Low Rate Interface Module FPGA	NCS 4200-1T8S-20CS	NCS4200-3GMS
IM FPGA	17.12.5	1.22	1.22	1.15	0.95	2.0
CEM FPGA		7.0	7.2	5G mode: 6.5 10G mode: 7.9	10G mode: 7.4 20G mode: 7.5	9.5
IM FPGA	17.12.4	1.22	1.22	1.15	0.95	2.0
CEM FPGA		7.0	7.2	5G mode: 6.5 10G mode: 7.9	10G mode: 7.4 20G mode: 7.5	9.5

Category	Cisco IOS XE Release	48 X T1/E1 CEM Interface Module FPGA	48 X T3/E3 CEM Interface Module FPGA	OC-192 Interface Module + 8-port Low Rate Interface Module FPGA	NCS 4200-1T8S-20CS	NCS4200-3GMS
IM FPGA	17.12.3	1.22	1.22	1.15	0.95	2.0
CEM FPGA		7.0	7.2	5G mode: 6.5 10G mode: 7.9	10G mode: 7.4 20G mode: 7.5	9.5
IM FPGA	17.12.2a	1.22	1.22	1.15	0.95	2.0
CEM FPGA		7.0	7.2	5G mode: 6.5 10G mode: 7.9	10G mode: 7.4 20G mode: 7.5	9.5
IM FPGA	17.12.1	1.22	1.22	1.15	0.95	2.0
CEM FPGA		7.0	7.2	5G mode: 6.5 10G mode: 7.9	10G mode: 7.4 20G mode: 7.5	9.5
IM FPGA	17.11.1a	1.22	1.22	1.15	0.95	2.0
CEM FPGA		7.0	5.6	5G mode: 6.5 10G mode: 7.9	10G mode: 7.4 20G mode: 7.5	9.3
IM FPGA	17.10.1	1.22	1.22	1.15	0.95	2.0
CEM FPGA		6.0	5.2	5G mode: 6.5 10G mode: 7.9	10G mode: 7.3 20G mode: 7.3	9.3

Category	Cisco IOS XE Release	48 X T1/E1 CEM Interface Module FPGA	48 X T3/E3 CEM Interface Module FPGA	OC-192 Interface Module + 8-port Low Rate Interface Module FPGA	NCS 4200-1T8S-20CS	NCS4200-3GMS
IM FPGA	17.9.2	1.22	1.22	1.15	0.95	2.0
CEM FPGA		6.0	5.2	5G mode: 6.5 10G mode: 7.9	10G mode: 7.2 20G mode: 7.2	9.1
IM FPGA	17.9.1	1.22	1.22	1.15	0.93	2.0
CEM FPGA		6.0	5.2	5G mode: 6.5 10G mode: 7.9	10G mode: 7.2 20G mode: 7.2	9.1
IM FPGA	17.8.1	1.22	1.22	1.15	0.93	2.0
CEM FPGA		6	5.2	5G mode: 6.5 10G mode: 7.9	10G mode: 7.0 20G mode: 6.0	9.0
IM FPGA	17.7.1	1.22	1.22	1.15	0.93	2.0
CEM FPGA		0x52110052	0x52520052	5G mode: 0x10090065 10G mode: 0x10070079	10G mode: 0x10290051 20G mode: 0x10290051	0x10030076
IM FPGA	17.6.2	1.22	1.22	1.15	0.93	2.0
CEM FPGA		0x52110052	0x52520052	5G mode: 0x10090065 10G mode: 0x10070079	10G mode: 0x10290051 20G mode: 0x10290051	0x10030076

Category	Cisco IOS XE Release	48 X T1/E1 CEM Interface Module FPGA	48 X T3/E3 CEM Interface Module FPGA	OC-192 Interface Module + 8-port Low Rate Interface Module FPGA	NCS 4200-1T8S-20CS	NCS4200-3GMS
IM FPGA	17.6.1	1.22	1.22	1.15	0.93	2.0
CEM FPGA		0x52110052	0x52520052	5G mode: 0x10090065 10G mode: 0x10070079	10G mode: 0x10290051 20G mode: 0x10290051	0x10030076
IM FPGA	17.5.1	1.22	1.22	1.15	0.93	2.0
CEM FPGA		0x52050052	0x52420052	5G mode: 0x10210063 10G mode: 0x10530078	10G mode: 0x10090051 20G mode: 0x10090051	0x10020076

Table 6: Supported Ethernet IM FPGA/FPD versions for NCS 4206-RSP3 and NCS 4216

Cisco IOS XE Release	NCS4200-1T16G-PS	NCS4200-1T8LR-PS	NCS4200-8T-PS	NCS4200-2Q-P	NCS4200-1H-PK	NCS4200-2H-PQ	NCS4200-1T16LR
17.12.5	1.129	69.32	0.21	0.21	0.20	0.20	69.24
17.12.4	1.129	69.32	0.21	0.21	0.20	0.20	69.24
17.12.3	1.129	69.32	0.21	0.21	0.20	0.20	69.24
17.12.2a	1.129	69.32	0.21	0.21	0.20	0.20	69.24
17.12.1	1.129	69.32	0.21	0.21	0.20	0.20	69.24
17.11.1a	1.129	69.32	0.21	0.21	0.20	0.20	69.24
17.10.1	1.129	69.32	0.21	0.21	0.20	0.20	69.24
17.10.1	1.129	69.32	0.21	0.21	0.20	0.20	69.24
17.9.2	1.129	69.32	0.21	0.21	0.22	0.20	69.24
17.9.1	1.129	69.32	0.21	0.21	0.22	0.20	69.24
17.8.1	1.129	69.32	0.21	0.21	0.22	0.20	69.24
17.7.1	1.129	1.129	0.21	0.21	0.22	0.20	69.24
17.6.1	1.129	1.129	0.21	0.21	0.22	0.20	69.24
17.5.1	1.22	1.22	1.15	0.93	2.0	0.23	0.20

Cisco IOS XE Release	NCS4200-1T16G-PS	NCS4200-1T8LR-PS	NCS4200-8T-PS	NCS4200-2Q-P	NCS4200-1H-PK	NCS4200-2H-PQ	NCS4200-1T16LR
17.4.1	1.129	69.24	0.21	0.22	0.20	3.4	1.129

Table 7: FPGA, HoFPGA, and ROMMON Versions for Cisco IOS XE 17.12.1, 17.12.2a, 17.12.3, 17.12.4, and 17.12.5 Releases

Platform	Interface Module	FPGA Current Version	FPGA Minimum Required Version	RSP HoFPGA Active	RSP HoFPGA Standby	ROMMON
NCS420X-RSP-128	NCS4200-1T8LR-PS	19052734	19052734	19052734	19052734	15.6(57r)S
NCS4206-RSP	NCS4200-1H-PK	0.20	0.20	40035	40035	15.6(57r)S
	NCS4200-8T-PS	0.22	0.21			
	NCS4200-1T8LR-PS	69.32	69.32			
NCS4216-RSP	NCS4200-1H-PK	0.20	0.20	20040034	20040034	15.6(57r)S

Additional References

Deferrals

Cisco IOS software images are subject to deferral. We recommend that you view the deferral notices at the following location to determine whether your software release is affected: http://www.cisco.com/en/US/products/products_security_advisories_listing.html.

Field Notices and Bulletins

- Field Notices—We recommend that you view the field notices for this release to determine whether your software or hardware platforms are affected. You can find field notices at http://www.cisco.com/en/US/support/tsd_products_field_notice_summary.html.
- Bulletins—You can find bulletins at http://www.cisco.com/en/US/products/sw/iosswrel/ps5012/prod_literature.html.

MIB Support

The below table summarizes the supported MIBs on the Cisco NCS 4206 and Cisco NCS 4216.

Supported MIBs		
BGP4-MIB (RFC 1657)	CISCO-IMAGE-LICENSE-MGMT-MIB	MPLS-LDP-STD-MIB (RFC 3815)
CISCO-BGP-POLICY-ACCOUNTING-MIB	CISCO-IMAGE-MIB	MPLS-LSR-STD-MIB (RFC 3813)
CISCO-BGP4-MIB	CISCO-IPMROUTE-MIB	MPLS-TP-MIB
CISCO-BULK-FILE-MIB	CISCO-LICENSE-MGMT-MIB	MSDP-MIB

Supported MIBs		
CISCO-CBP-TARGET-MIB	CISCO-MVPN-MIB	NOTIFICATION-LOG-MIB (RFC 3014)
CISCO-CDP-MIB	CISCO-NETSYNC-MIB	OSPF-MIB (RFC 1850)
CISCO-CEF-MIB	CISCO-OSPF-MIB (draft-ietf-ospf-mib-update-05)	OSPF-TRAP-MIB (RFC 1850)
CISCO-CLASS-BASED-QOS-MIB	CISCO-OSPF-TRAP-MIB (draft-ietf-ospf-mib-update-05)	PIM-MIB (RFC 2934)
CISCO-CONFIG-COPY-MIB	CISCO-PIM-MIB	RFC1213-MIB
CISCO-CONFIG-MAN-MIB	CISCO-PROCESS-MIB	RFC2982-MIB
CISCO-DATA-COLLECTION-MIB	CISCO-PRODUCTS-MIB	RMON-MIB (RFC 1757)
CISCO-EMBEDDED-EVENT-MGR-MIB	CISCO-PTP-MIB	RSVP-MIB
CISCO-ENHANCED-MEMPOOL-MIB	CISCO-RF-MIB	SNMP-COMMUNITY-MIB (RFC 2576)
CISCO-ENTITY-ALARM-MIB	CISCO-RTTMON-MIB	SNMP-FRAMEWORK-MIB (RFC 2571)
CISCO-ENTITY-EXT-MIB	CISCO-SONET-MIB	SNMP-MPD-MIB (RFC 2572)
CISCO-ENTITY-FRU-CONTROL- MIB	CISCO-SYSLOG-MIB	SNMP-NOTIFICATION-MIB (RFC 2573)
CISCO-ENTITY-SENSOR-MIB	DS1-MIB (RFC 2495)	SNMP-PROXY-MIB (RFC 2573)
CISCO-ENTITY-VENDORTYPE-OID-MIB	ENTITY-MIB (RFC 4133)	SNMP-TARGET-MIB (RFC 2573)
CISCO-FLASH-MIB	ENTITY-SENSOR-MIB (RFC 3433)	SNMP-USM-MIB (RFC 2574)
CISCO-FTP-CLIENT-MIB	ENTITY-STATE-MIB	SNMPv2-MIB (RFC 1907)
CISCO-IETF-ISIS-MIB	EVENT-MIB (RFC 2981)	SNMPv2-SMI
CISCO-IETF-PW-ATM-MIB	ETHERLIKE-MIB (RFC 3635)	SNMP-VIEW-BASED-ACM-MIB (RFC 2575)
CISCO-IETF-PW-ENET-MIB	IF-MIB (RFC 2863)	SONET-MIB
CISCO-IETF-PW-MIB	IGMP-STD-MIB (RFC 2933)	TCP-MIB (RFC 4022)
CISCO-IETF-PW-MPLS-MIB	IP-FORWARD-MIB	TUNNEL-MIB (RFC 4087)
CISCO-IETF-PW-TDM-MIB	IP-MIB (RFC 4293)	UDP-MIB (RFC 4113)
CISCO-IF-EXTENSION-MIB	IPMROUTE-STD-MIB (RFC 2932)	CISCO-FRAME-RELAY-MIB
CISCO-IGMP-FILTER-MIB	MPLS-LDP-GENERIC-STD-MIB (RFC 3815)	

MIB Documentation

To locate and download MIBs for selected platforms, Cisco IOS and Cisco IOS XE releases, and feature sets, use Cisco MIB Locator found at the following location: http://tools.cisco.com/ITDIT/MIBS/servlet/index. To access Cisco MIB Locator, you must have an account on Cisco.com. If you have forgotten or lost your

account information, send a blank e-mail to cco-locksmith@cisco.com. An automatic check will verify that your e-mail address is registered with Cisco.com. If the check is successful, account details with a new random password will be e-mailed to you. Qualified users can establish an account on Cisco.com by following the directions found at the following location: http://tools.cisco.com/RPF/register/register.do

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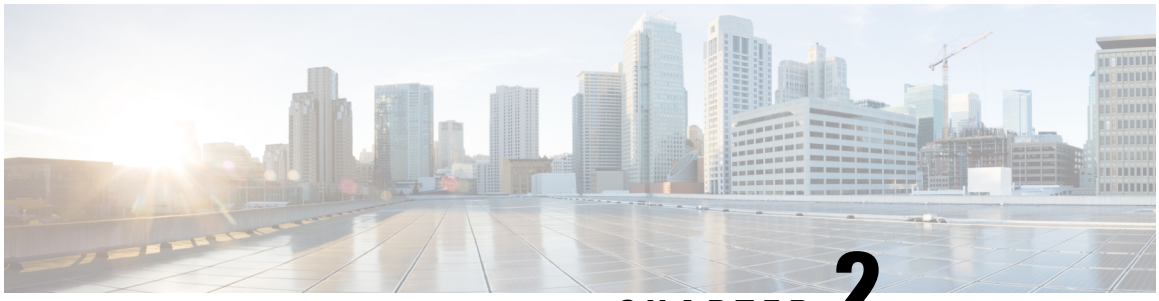
- To find warranty information for a specific product or product family, access Cisco Warranty Finder.

Cisco Bug Search Tool

Cisco Bug Search Tool (BST) is a web-based tool that acts as a gateway to the Cisco bug tracking system that maintains a comprehensive list of defects and vulnerabilities in Cisco products and software. BST provides you with detailed defect information about your products and software.



CHAPTER 2

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

What's New in Hardware for Cisco IOS XE Dublin 17.12.5

There are no new hardware features introduced for this release.

What's New in Software for Cisco IOS XE Dublin 17.12.5

There are no new software features introduced for this release.

What's New in Hardware for Cisco IOS XE Dublin 17.12.4

There are no new hardware features introduced for this release.

What's New in Software for Cisco IOS XE Dublin 17.12.4

There are no new software features introduced for this release.

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 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 17.12.2a

There are no new software features introduced for this release.

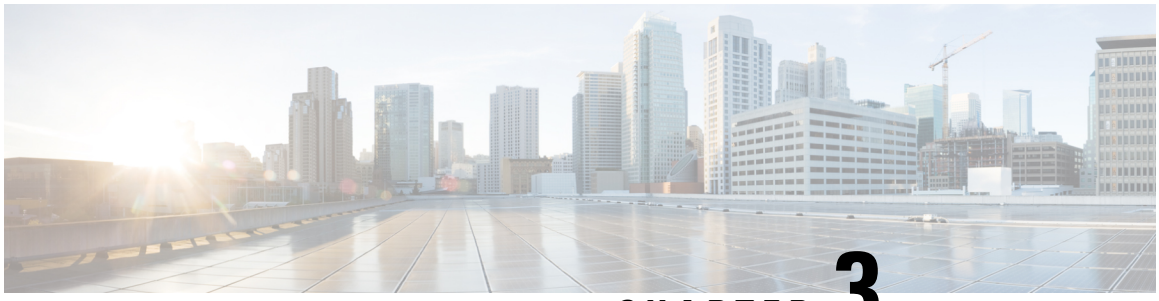
What's New in Hardware for Cisco IOS XE Dublin 17.12.x

Optics	Description
Optics	This release launches the following new optics on selective hardware within the product portfolio. For details refer to the Transceiver Module Group (TMG) Compatibility Matrix. Cisco Data SFP modules: • ONS-SI+-10G-ZR • ONS-SI+-10G-SR

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

Feature	Description
Carrier Ethernet	
Service Instance as Track Client	Track can be configured to check for reachability to IBR(Upstream router). If IBR is not reachable, the service instance is kept in admin down state. This avoids traffic drop until the route is installed which optimizes the convergence. Currently, IOS XE platforms do not have options to shutdown EFP based on track reachability.
CEM Generic	

Feature	Description
BGP PIC with CEM	BGP PIC extends support to TDM CEM pseudowire to facilitate faster, sub-second BGP convergence and to improve fast failover.
CEM Description Command	You can add description for a cem group up to 200 characters using the **description** command.
DCC CLNP Interworking	This feature enables you to exchange Network Management System (NMS) management traffic between OSI Data Communication Channel (DCC) and Ethernet ports over Connectionless Network Protocol (CLNP) interworking. With this, you can maintain in-band communication between old Add/Drop Multiplexer (ADM) equipments to be managed from NMS.
Layer 2	
MACsec support with PTP for 1GE NCS4200-1T16G-PS Interface Module	You can now configure MACsec support with Precision Time Protocol (PTP) packets for mitigating security vulnerabilities on a router.



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 17.12.5

Identifier	Headline
CSCwk46171	Enabling T1/E1 TPoP causes latency for control plane packets.
CSCwm91197	Silent reload of 3GMS IM due to PCI transaction failure.
CSCwm00642	RSP reboots while configuring CEM IDs on ACR.

Identifier	Headline
CSCwm86214	LDP session flap causes memory leak for EMPLS3LD which leads to RSP crash.
CSCwk58917	L-bit propogation not enabled for LOF alarm after T1/E1 framing change with framed SAToP.
CSCwm04389	Chassis reloaded after RP redundancy force-switchover.
CSCwn24964	Multicast traffic is dropped after interface flap.

Open Caveats - Cisco IOS XE Dublin 17.12.5

Identifier	Headline
CSCwm38823	ECMP is not functioning as expected after one of the link flaps for BGP learnt prefix.
CSCwi76112	Message to be displayed for M13 framing when configured with clear-channel.
CSCwn56729	CRC errors are reported on IMA8Z card (RSP3c) because of the reliability of the link goes down.
CSCwn48959	Unable to configure 8000 EFP's after enabling **efp_feat_ext** template.

Resolved Caveats - Cisco IOS XE Dublin 17.12.4

Identifier	Headline
CSCwj05647	3GMS serial interface protocol goes down with specific modem
CSCwi74892	VLAN tagged pause frames get flooded towards router (RSP3) and caused port-channel flap.

Open Caveats - Cisco IOS XE Dublin 17.12.4

Identifier	Headline
CSCwj38216	BDI ARP is not learning but peer side BDI MAC is learning through VC
CSCwj72178	ASR903(RSP3) - OSPF not coming on G8032 vlan post reload
CSCwk02087	BFD stuck in INIT state for interface Te 0/0/0 and Te 0/4/3

Resolved Caveats - Cisco IOS XE Dublin 17.12.3

Identifier	Headline
CSCwi51850	RSP3: Traffic drop observed for specific EFP due to VOQ failure.
CSCwh42209	RSS memory increment continuously seen in uea_mgr process upon system event.
CSCwh88274	Unable to remove service-policy from from standby member link.
CSCwi75499	Lost CEM circuit configuration after reboot.
CSCwh84309	With Telcordia profile, Ethernet interfaces sec admin state is not going to AINS state.
CSCwh80239	RSP3 - IP SLA Multicast configuration not working

Open Caveats - Cisco IOS XE Dublin 17.12.3

Identifier	Headline
CSCwj05647	3GMS Serial interface protocol down with specific Modem
CSCwi74892	VLAN tagged pause frames were flooded towards RSP3 and caused port-channel flap
CSCwj06370	Serial cease traffic when configuring module other port
CSCwh75614	Increased CPU after upgrading router to 17.6.3 from 16.9.4 when 1000 SLM/DMM sessions are configured

Resolved Caveats - Cisco IOS XE Dublin 17.12.2a

Identifier	Headline
CSCwf81523	OCX: Traceback seen IOSXE_RP_SPA-3-IOMD_CONFIG_FAIL: when the mode sonet is configured.
CSCwh30217	NCS4200-3GMS: with rate of OC-12, threshold sf-ber 3 is added under the **show running config** command.
CSCwf77316	RSP3: MPLS incorrect label programmed with scenarios of double implicit-null.
CSCwf85278	mVPN profile 14 is failing with dual home scenarios.
CSCwh62909	entitySensorMIB: Clear traps aren’t seen when Major and Minor alarms are reported.
CSCwh06519	Fan failure alarm doesn’t display the correct module name or description.

Identifier	Headline
CSCwh28391	The show running config and write memory trigger the **ERR:Interfacenotfound** error messages.
CSCwh87343	Cisco IOS XE Software Web UI Privilege Escalation Vulnerability.
CSCwh04884	17.6.3: VC Down due to control-word negotiation.
CSCwf79476	When certificate issues the **show platform sudi certificate sign nonce xxxx"**, flaps L3 interfaces.
CSCwh75169	ISIS: Redistribution prefix threshold has been reached and seen with lesser prefixes.
CSCwf16577	BFD session down alarm not clearing after fault is recovered.

Open Caveats - Cisco IOS XE Dublin 17.12.2a

Identifier	Headline
CSCwh80239	RSP3 IP SLA multicast configuration is not working.
CSCwf92194	Stale MAC address entries under the show mac address table.
CSCwh15292	Traffic fails with SPF: GLC-GE-DR-LX on router IM configured with 100 mbps speed.
CSCwh42209	RSS memory increment continuously seen in uea_mgr process upon system event.
CSCwh06611	Y1564 ext packets generated by probe is of size 69 B instead of 64 B when running SAT ext IR 7619 mbps.
CSCwh85621	Layer 2 CEF interface is unavailable.
CSCuv05226	VRF is not deleted after replacing default config.
CSCwh66210	Netconf RPC failed to apply if increase mpls MTU limit to 9644 bytes.
CSCwh84408	Process pubd is not running in ASR920 and RSP2 device.
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
CSCwd85267	FR Port mode in **show interface** CLI does not display FR PW statistics.

Identifier	Headline
CSCwd87661	Fan running at high speed and creating noise (Fan PID A903-FAN-H) - SW version 17.03.04.
CSCwf18367	RSP3: uea_mgr RIFID leak/comsumption for Muticast routes.
CSCwe58324	Node Reload observed after routing change in core.
CSCwd66728	The uea_mgr crash seen with uea_brcm_update_hw_stats.
CSCvy81362	Controllers are down due to LP-LOP alarm After CE reboots.
CSCwe19162	After SSO: False Alarm on CNAAP.
CSCwf14167	RSP3: uea_mgr memory leak on ARP probes.
CSCwd25376	Loopback local on 3GMS IM causing BIP B2 counters increment under show controller cli.
CSCwd86980	High traffic drop is observed on RPFO
CSCwf67803	DS3_ADMIN_DOWN gets cleared after IM OIR and displaying LINK_DOWN alarm in 3GMS.
CSCwf54249	With CPG, STS1e configuration is giving %ERROR: Standby doesn't support this command.
CSCwe34672	High CPU on ptp_uea process.
CSCwf37941	ACL config under serial interface makes dut crash during unconfig.
CSCwf40403	T3: DCR: cem id not displayed correctly under **sh recovered-clock**.
CSCwf42164	No snmp trap link-status get re-added after IM reload.
CSCwe38959	The rs232 ASYNC PW service with full scale seeing packet and byte drops intermittently.
CSCwd88680	High Convergence after Port channel member Failure.
CSCwf49426	PAIS alarm get reported after IM OIR.
CSCwf54221	With T3 ctrl shut, if mode T3 is unconfigured, forced Tx/Rx alarm in arrive is set to AIS.
CSCwe10460	Power sensor threshold warning alarms in EPNM.
CSCwe13024	All readings for power supply unit reflect as zero though the unit is functional.
CSCwd67723	In IMA32D/IMA8D card, sometimes change in E1 controller config(after ctrlr flap) results in IM reboot.
CSCwe98227	The **show version** does not display details of T1/E1 interfaces for 8D and 32D IMs.
CSCwe55191	IS-IS neighbors flap during switchover when authentication is enabled.

Identifier	Headline
CSCwe95820	VRF Static Route Redistribution into EIGRP fails.
CSCwe53345	External R1 10M is not selected after double SSO with GNSS.
CSCwd66936	RSP2 UDP pseudowire stuck while activating.
CSCwe36122	IS-IS goes down when performing TI-LFA calculation.
CSCwe27155	Traffic drops with BDI shut (IP_FRR configs).
CSCwe82657	VIN P2/0, VOUT P2/2, VIN P4/0 & VOUT P4/2 alarms upon SSO

Open Caveats - Cisco IOS XE Dublin 17.12.1

Identifier	Headline
CSCwf77276	Memory leak seen on chunk module when BDI routed network traffic flow along with mac move.
CSCwf77316	MPLS L3VPN PE not able to connect remote CE.
CSCwf15278	Pending objects for "fman_fp_image: bd-efp-bind: bd X" during BDI interface creation.
CSCwf69937	The port channel does not come up on adding recommended configs until the router is reloaded.
CSCwf71463	During traffic flow, when speed lowered on ASYNC port, SYNC port CEM traffic gets impacted.
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