Release Notes for Cisco NCS 540 Series Routers, Cisco IOS XR Release 6.3.3

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Release Notes for Cisco Network Convergence System 540 Series Routers, IOS XR Release 6.6.1

Note

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The Cisco Network Convergence System 540 Routers (NCS 540) complements Cisco's offerings for IP RAN solutions for the GSM, UMTS, LTE, and CDMA. Cisco NCS 540 Series routers are designed with I-Temp grade devices.

The Cisco NCS 540 Series routers are designed for cost-effective delivery of these next-generation services. These routers are temperature-hardened, high-throughput, small form factor, low-power-consumption devices suitable for both outdoor and indoor deployments. They combine a comprehensive and scalable feature set of Layer 2 VPN (L2VPN) and Layer 3 VPN (L3VPN) services and a rich set of mobile features for a cost-optimized converged access platform. Capabilities such as advanced packet classification, segment routing, ultrawide ECMP, programmable network management, and telemetry are added to the robust and mature features already present in Cisco IOS XR Software.

This release notes describe the features provided in the Cisco IOS XR Software Release. See the Features Introduced in Cisco IOS XR Software Release 6.6.1 section in this document for information on new software features.

System Requirements

Cisco IOS XR Release 6.5.3 contains all features released in Cisco IOS XR Release 6.5.2, and Release 6.5.1.

Release 6.5.2 and Release 6.5.1 are limited availability (LA) releases.

This section describes the system requirements for the Cisco Network Convergence System 540 Series Routers Release 6.5.3.

For more information on IOS XR Release 6.5.1 features, see Release Notes for Cisco NCS 540 Series Routers, Release 6.5.1

For more information on IOS XR Release 6.5.2 features, see Release Notes for Cisco NCS 540 Series Routers, Release 6.5.2

Release 6.3.3 Packages

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

Table 1: Release 6.3.3 Packages for Cisco NCS 540 Series Router

Composite Package		
Feature Set	**Filename**	**Description**
Cisco IOS XR IP Unicast Routing Core Bundle	ncs540-mini-x.iso-r6.3.3	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	ncs540-mgbl-1.0.0.0-r633.x86_64.rpm	Extensible Markup Language (XML) Parser, Telemetry, Netconf, gRPC and HTTP server packages.
Cisco IOS XR MPLS Package	ncs540-mpls-1.0.0.0-r633.x86_64.rpm ncs540-mpls-te-rsvp-1.0.0.0-r633.x86_64.rpm	MPLS and MPLS Traffic Engineering (MPLS-TE) RPM.
Cisco IOS XR Security Package	ncs540-k9sec-1.0.0.0-r633.x86_64.rpm	Support for Encryption, Decryption, Secure Shell (SSH), Secure Socket Layer (SSL), and Public-key infrastructure (PKI)
Cisco IOS XR ISIS package	ncs540-isis-1.0.0.0-r633.x86_64.rpm	Support ISIS
Cisco IOS XR OSPF package	ncs540-ospf-1.0.0.0-r633.x86_64.rpm	Support OSPF
Lawful Intercept (LI) Package	ncs540-li-1.0.0.0-r633.x86_64.rpm	Includes LI software images
Multicast Package	ncs540-mcast-1.0.0.0-r633.x86_64.rpm	Support Multicast
Cisco IOS XR USB Boot Package	ncs540-usb_boot-6.3.3.zip	USB Boot package

Determine Software Version

Log in to the router and enter the **show version** command:

```
RP/0/RP0/CPU0:router# show version

Cisco IOS XR Software, Version 6.3.3
Copyright (c) 2013-2017 by Cisco Systems, Inc.

Build Information:
 Built By     : ahoang
 Built On     : Tue Aug 28 13:51:51 PDT 2018
 Build Host   : iox-lnx-039
 Workspace    : /auto/srcarchive16/prod/6.3.3/ncs540/ws
 Version      : 6.3.3
 Location     : /opt/cisco/XR/packages/
 Label        : 6.3.3


cisco NCS-540 () processor
System uptime is 7 minutes
```

Determine Firmware Support

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

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

```
============================== ==================================================
                               Field Programmable Device Package
                               ==================================================
                                          Req     SW      Min Req   Min Req
Card Type          FPD Description        Reload  Ver     SW Ver    Board Ver
================== ======================= ======  ======= ========  =========
------------------------------------------------------------------------------
N540-24Z8Q2C-M     Bootloader(A)          YES     1.07    1.07      0.0
                   CPU-IOFPGA(A)          YES     0.03    0.03      0.0
                   MB-IOFPGA(A)           YES     0.18    0.18      0.0
                   MB-MIFPGA              YES     0.04    0.04      0.0
                   SATA(A)                NO      5.00    5.00      0.0
------------------------------------------------------------------------------
N540-X-24Z8Q2C-M   Bootloader(A)          YES     1.07    1.07      0.0
                   CPU-IOFPGA(A)          YES     0.03    0.03      0.0
                   MB-IOFPGA(A)           YES     0.18    0.18      0.0
                   MB-MIFPGA              YES     0.04    0.04      0.0
                   SATA(A)                NO      5.00    5.00      0.0
```

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

```
                                                             FPD Versions
                                                             =================
Location   Card type       HWver FPD device     ATR Status   Running Programd
-------------------------------------------------------------------------------
0/RP0      N540-24Z8Q2C-M  0.5   MB-MIFPGA           CURRENT  0.04    0.04
0/RP0      N540-24Z8Q2C-M  0.5   Bootloader          CURRENT  1.07    1.07
0/RP0      N540-24Z8Q2C-M  0.5   CPU-IOFPGA          CURRENT  0.03    0.03
0/RP0      N540-24Z8Q2C-M  0.5   MB-IOFPGA           CURRENT  0.18    0.18
```

```
RP/0/RP0/CPU0:router# show install active

Node 0/RP0/CPU0 [RP]
```

```
        Boot Partition: xr_lv279
        Active Packages: 9
              ncs540-xr-6.3.3 version=6.3.3 [Boot image]
              ncs540-mpls-1.0.0.0-r633
              ncs540-isis-1.0.0.0-r633
              ncs540-mcast-1.0.0.0-r633
              ncs540-mgbl-1.0.0.0-r633
              ncs540-ospf-1.0.0.0-r633
              ncs540-mpls-te-rsvp-1.1.0.0-r633
              ncs540-li-1.0.0.0-r633
              ncs540-k9sec-1.1.0.0-r633

    Node 0/0/CPU0 [LC]
      Boot Partition: xr_lcp_lv280
      Active Packages: 9
              ncs540-xr-6.3.3 version=6.3.3 [Boot image]
              ncs540-mpls-1.0.0.0-r633
              ncs540-isis-1.0.0.0-r633
              ncs540-mcast-1.0.0.0-r633
              ncs540-mgbl-1.0.0.0-r633
              ncs540-ospf-1.0.0.0-r633
              ncs540-mpls-te-rsvp-1.1.0.0-r633
              ncs540-li-1.0.0.0-r633
              ncs540-k9sec-1.1.0.0-r633
```

Supported MIBs

The Cisco NCS 5500 MIB support list is also applicable to the Series Routers. For the list of supported MIBs, see the Cisco NCS5500 MIB Support List.

Supported Features

Supported Hardware Features

There are no new hardware features in this release.

Supported Optics

The following optics are supported on the Cisco NCS 540 Series router in this release:

- QSFP-100G-SR4-S
- QSFP-100G-LR4-S
- QSFP-100G-PSM4-S
- QSFP-100G-CWDM4-S
- QSFP-100G-SM-SR
- QSFP-100G-ER4L-S
- QSFP-100G-AOCxxM
- QSFP-40G-SR4, and –S
- QSFP-40G-CSR4

- QSFP-40G-SR-BD

- QSFP-40G-LR4, and –S

- WSP-Q40GLR4L

- QSFP-40G-ER4

- QSFP-4x10G-LR-S (40G-PSM4)

- SFP-25G-SR-S

- SFP-10/25G-LR-S – 25G mode support only

- SFP-10G-SR, and –S

- SFP-10G-SR-X

- SFP-10G-LR, and –S

- SFP-10G-LR-X

- SFP-10G-ER, and –S

- CWDM-SFP10G-xxxx (CWDM-SFP10G-1610)

- SFP-10G-ZR, and –S

- DWDM-SFP10G-xxxx (fixed) (DWDM-SFP10G-59.79)

- DWDM-SFP10G-C (tunable)

- GLC-TE (1000BASE-T)

- GLC-SX-MMD

- GLC-SX-MM-RGD

- GLC-LH-SMD

- GLC-EX-SMD

- GLC-ZX-SMD

- GLC-ZX-SM-RGD

- CWDM-SFP-xxxx (CWDM-SFP-1550, CWDM-SFP-1570)

- DWDM-SFP-xxxx (DWDM-SFP-5494)

- RPHY-S10G-40K-200=

- RPHY-S10G-20K-200=

Supported Software Features

There are no new software features in this release.

Restrictions and Limitations on the Cisco NCS 540 Series Router

The following restrictions are applicable only to Cisco N540-24Z8Q2C-SYS, N540X-ACC-SYS, and N540-ACC-SYS variants.

- In the Cisco IOS XR Release 7.0.1, the Packet IO feature is not supported on bundle interfaces.

- The **show inventory** and the **show diagnostic** commands do not display the fan serial number.

- The interface ports 0/0/0/24 to 0/0/0/31 do not support 1G Copper SFPs.

- Remove the speed settings on the 1G Copper optics when 10M/100M is configured and replaced with 1G SFP optics.

- The **hw-module profile mfib statistics** command is not supported.

Software Note

From this release, DN bit is set by default for all prefixes that are redistributed into BGP.

Previous to this release, the prefixes that are redistributed into BGP from other protocols in the remote PE do not contain the extended community attributes. When these prefixes are redistributed into the OSPF VRF instance, OSPF originates external LSAs without DN bit being set.

Caveats

This section 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.

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.

Open Caveats - Cisco IOS XR Release 6.3.3

There are no new open caveats in this release.

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).

The upgrade document is available along with the software images.

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.

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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.