



# Cisco Nexus 3500 Series NX-OS Release Notes, Release 6.0(2)A8(3)

This document describes the features, bugs, and limitations for Cisco Nexus 3500 Series switches. Use this document in combination with documents listed in the “Obtaining Documentation and Submitting a Service Request” section.

**Note:** Release notes are sometimes updated with new information about restrictions and bugs. See the following website for the most recent version of the Cisco Nexus 3500 Series release notes: <http://www.cisco.com/c/en/us/support/switches/nexus-3000-series-switches/products-release-notes-list.html>.

Table 1 shows the online change history for this document.

Table 1. Online History Change

Date	Description
October 31, 2016	Created NX-OS Release 6.0(2)A8(3) release notes
November 24, 2016	Added a limitation about SSH/SCP sessions.

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## Introduction

Several new hardware and software features are introduced for the Cisco Nexus 3548 switch to improve the performance, scalability, and management of the product line. Cisco NX-OS Release 6.0 also supports all hardware and software supported in Cisco NX-OS Release 5.1 and Cisco NX-OS Release 5.0.

Cisco NX-OS offers the following benefits:

- Cisco NX-OS runs on all Cisco data center switch platforms: Cisco Nexus 7000, Nexus 5000, Nexus 4000, Nexus 3000, Nexus 2000, and Nexus 1000V Series switches.
- Cisco NX-OS software interoperates with Cisco products that run any variant of Cisco IOS software and also with any networking operating system that conforms to common networking standards.
- Cisco NX-OS modular processes are triggered on demand, each in a separate protected memory space. Processes are started and system resources are allocated only when a feature is enabled. The modular processes are governed by a real-time preemptive scheduler that helps ensure timely processing of critical functions.
- Cisco NX-OS provides a programmatic XML interface that is based on the NETCONF industry standard. The Cisco NX-OS XML interface provides a consistent API for devices. Cisco NX-OS also provides support for Simple Network Management Protocol (SNMP) Versions 1, 2, and 3 MIBs.
- Cisco NX-OS enables administrators to limit access to switch operations by assigning roles to users. Administrators can customize access and restrict it to the users who require it.

This section includes the following topics:

- Cisco Nexus 3500 Series Switches
- Cisco Nexus 3548 Switch
- Cisco Nexus 3524 Switch

## Cisco Nexus 3500 Series Switches

The Cisco Nexus 3500 platform is an extension of the Cisco Nexus 3000 Series of 100M, 1, 10, and 40 Gigabit Ethernet switches built from a switch-on-a-chip (SoC) architecture. Switches in the Cisco Nexus 3500 series include Algorithm Boost (or Algo Boost) technology that is built into the switch application-specific integrated circuit (ASIC). Algo Boost allows the Cisco Nexus 3548 switch to achieve Layer 2 and Layer 3 switching latencies of less than 200 nanoseconds (ns). In addition, Algo Boost contains several innovations for latency, forwarding features, and performance visibility, including two configurable modes for low latency:

- Normal mode: This mode is suitable for environments needing low latency and high scalability.
- Warp mode: This mode consolidates forwarding operations within the switching ASIC, lowering latency by up to an additional 20 percent compared to normal operation.

Active buffer monitoring accelerates the collection of buffer utilization data in hardware, allowing significantly faster sampling intervals. Even on the lowest-latency switches, data packets can incur a millisecond or more of latency during periods of congestion. Previous buffer utilization monitoring techniques were based entirely on software polling algorithms with polling with higher polling intervals that can miss important congestion events.

## Cisco Nexus 3548 Switch

The Cisco Nexus 3548 switch is the first member of the Cisco Nexus 3500 platform. As a compact one-rack-unit (1RU) form-factor 10 Gigabit Ethernet switch, the Cisco Nexus 3548 switch provides line-rate Layer 2 and Layer 3 switching at extremely low latency. The switch runs Cisco NX-OS software that has comprehensive features and functions that are widely deployed globally. The Cisco Nexus 3548 contains no physical layer (PHY) chips, which allows low latency and low power consumption. The switch supports both forward and reversed airflow and both AC and DC power inputs.

## Cisco Nexus 3524 Switch

The Cisco Nexus 3524 switch is a Cisco Nexus 3548 switch, but with only 24 ports active and can be upgraded to use all 48 ports. As a compact one-rack-unit (1RU) form-factor 10 Gigabit Ethernet switch, the Cisco Nexus 3548 switch is the lowest entry point for main-stream top-of-rack (TOR) data center deployments which offers line-rate Layer 2 and Layer 3 switching with a comprehensive feature set, including Algo Boost technology, and ultra-low latency.

For information about the Cisco Nexus 3500 Series, see the *Cisco Nexus 3500 Series Hardware Installation Guide*.

## System Requirements

This section includes the following topics:

- [Memory Requirements](#)
- [Hardware Supported](#)

## Memory Requirements

The Cisco NX-OS Release 6.0(2)A8(3) software requires 203 MB of flash memory.

## Hardware Supported

Cisco NX-OS Release 6.0(2)A8(3) supports the Cisco Nexus 3500 Series switches. You can find detailed information about supported hardware in the Cisco Nexus 3500 Series Hardware Installation Guide.

Table 2 shows the hardware supported by Cisco NX-OS Release 6.0(2)A8(3) software.

**Table 2. Hardware Supported by Cisco NX-OS Release 6.0(2)A8(3) Software.**

Hardware	Part Number	Supported Software Release
<b>Cisco Nexus 3500 Series</b>		
Cisco Nexus 3548 switch	N3K-C3548P-10G	5.0(3)A1(1) and later releases
Cisco Nexus 3548x switch, 48 SFP+	N3K-C3548P-10GX	6.0(2)A6(1) and later releases
Cisco Nexus 3524 switch	N3K-C3524P-10G	6.0(2)A6(1) and later releases
Cisco Nexus 3524 switch, 24 SFP+	N3K-C3524P-10GX	5.0(3)A1(1) and later releases
Cisco Nexus 2000 or Nexus 3000 individual fan, forward airflow (port side exhaust)	NXA-FAN-30CFM-F	5.0(3)A1(1) and later releases
Cisco Nexus 2000 or Nexus 3000 individual fan, reversed airflow (port side intake)	NXA-FAN-30CFM-B	5.0(3)A1(1) and later releases
Cisco Nexus 2000 or Nexus 3000 400W AC power supply, forward airflow (port side exhaust)	N2200-PAC-400W	5.0(3)A1(1) and later releases
Cisco Nexus 2000 or Nexus 3000 400W AC power supply, reversed airflow (port side intake)	N2200-PAC-400W-B	5.0(3)A1(1) and later releases

Hardware	Part Number	Supported Software Release
Cisco Nexus 2000 or Nexus 3000 400W DC power supply, forward airflow (port side exhaust)	N2200-PDC-400W	5.0(3)A1(1) and later releases
Cisco Nexus 2000 or Nexus 3000 350W DC power supply, reversed airflow (port side intake)	N3K-PDC-350W-B	5.0(3)A1(1) and later releases
<b>Transceivers</b>		
<b>10-Gigabit</b>		
10GBASE-ZR SFP+ module (single-mode fiber [SMF])	SFP-10G-ZR	6.0(2)A3(1) and later releases
10GBASE-CU SFP+ cable 1.5 m (Twinax cable)	SFP-H10GB-CU1-5M	6.0(2)A3(1) and later releases
10GBASE-CU SFP+ cable 2 m (Twinax cable)	SFP-H10GB-CU2M	6.0(2)A3(1) and later releases
10GBASE-CU SFP+ cable 2.5 m (Twinax cable)	SFP-H10GB-CU2-5M	6.0(2)A3(1) and later releases
Active optical cable 1 m	SFP-10G-AOC1M	6.0(2)A3(1) and later releases
Active optical cable 3 m	SFP-10G-AOC3M	6.0(2)A3(1) and later releases
Active optical cable 5 m	SFP-10G-AOC5M	6.0(2)A3(1) and later releases
Active optical cable 7 m	SFP-10G-AOC7M	6.0(2)A3(1) and later releases
10GBASE-DWDM long-range transceiver module 80 km with single mode duplex fiber	DWDM-SFP10G-C	6.0(2)A3(1) and later releases
10GBASE-DWDM long-range transceiver module 80 km with single mode duplex fiber	DWDM-SFP10G	6.0(2)A1(1) and later releases
10GBASE-SR SFP+ module (multimode fiber [MMF])	SFP-10G-SR	5.0(3)A1(1) and later releases
10GBASE-LR SFP+ module (single-mode fiber [SMF])	SFP-10G-LR	5.0(3)A1(1) and later releases
Cisco 10GBASE-ER SFP+ Module for SMF	SFP-10G-ER	5.0(3)A1(1) and later releases
10GBASE-SR SFP+ module (multimode fiber [MMF])	SFP-10G-SR-S	6.0(2)A8(2) and later releases
10GBASE-LR SFP+ module (single-mode fiber [SMF])	SFP-10G-LR-S	6.0(2)A8(2) and later releases
Cisco 10GBASE-ER SFP+ Module for SMF	SFP-10G-ER-S	6.0(2)A8(2) and later releases
10GBASE-ZR SFP+ module (single-mode fiber [SMF])	SFP-10G-ZR-S	6.0(2)A8(2) and later releases
10GBASE-CU SFP+ cable 1 m (Twinax cable)	SFP-H10GB-CU1M	5.0(3)A1(1) and later releases

Hardware	Part Number	Supported Software Release
10GBASE-CU SFP+ cable 3 m (Twinax cable)	SFP-H10GB-CU3M	5.0(3)A1(1) and later releases
10GBASE-CU SFP+ cable 5 m (Twinax cable)	SFP-H10GB-CU5M	5.0(3)A1(1) and later releases
Active Twinax cable assembly, 7 m	SFP-H10GB-ACU7M	5.0(3)A1(1) and later releases
Active Twinax cable assembly, 10 m	SFP-H10GB-ACU10M	5.0(3)A1(1) and later releases
<b>1-Gigabit Ethernet</b>		
1000BASE-T SFP	GLC-TE	6.0(2)A3(1) and later releases
Gigabit Ethernet SFP, LC connector EX transceiver (MMF)	GLC-EX-SMD	6.0(2)A3(1) and later releases
Gigabit Ethernet SFP, LC connector ZX transceiver (MMF)	GLC-ZX-SMD	6.0(2)A3(1) and later releases
1000BASE-T SFP	GLC-T	6.0(2)A1(1) and later releases
Gigabit Ethernet SFP, LC connector SX transceiver (MMF)	GLC-SX-MM	5.0(3)A1(1) and later releases
Gigabit Ethernet SFP, LC connector SX transceiver (MMF)	GLC-SX-MMD	5.0(3)A1(1) and later releases
Gigabit Ethernet SFP, LC connector LX/LH transceiver (SMF)	GLC-LH-SM	5.0(3)A1(1) and later releases
Gigabit Ethernet SFP, LC connector LX/LH transceiver (SMF)	GLC-LH-SMD	5.0(3)A1(1) and later releases
<b>100-Megabit Ethernet</b>		
1000BASE-T SFP transceiver module with extended operating temperature range	SFP-GE-T	6.0(2)A3(1) and later releases
100BASE-FX SFP module for Gigabit Ethernet ports GLC-GE-100FX	GLC-GE-100FX	6.0(2)A3(1) and later releases

## New and Changed Information

This section lists the new and changed features in Release 6.0(2)A8(3).

- New Supported Hardware
- New Software Features

### New Supported Hardware

Cisco NX-OS Release 6.0(2)A8(3) does not include any new hardware.

### New Software Features

Cisco NX-OS Release 6.0(2)A8(3) includes the following new software features:

## Caveats

- **PTP Enhancements:** Added support for multiple PTP domains, PTP grandmaster prevention, PTP interface cost and clock identity.
- **NAT with ECMP:** Added ECMP support for NAT.
- **Multicast VRF Route Leak:** Added a new command to support RPF selection in a different VRF.
- **IGMPv2 Explicit host tracking:** Support for IGMPv2 has been added to the **show ip igmp snooping explicit-tracking** command.
- **copy file to start:** Added support for copy file to startup and reload to take care of new configurations.

## Caveats

The open and resolved bugs for this release are accessible through the Cisco Bug Search Tool. This web-based tool provides you with access to the Cisco bug tracking system, which maintains information about bugs and vulnerabilities in this product and other Cisco hardware and software products.

**Note:** You must have a Cisco.com account to log in and access the [Cisco Bug Search Tool](#). If you do not have one, you can [register for an account](#).

For more information about the Cisco Bug Search Tool, see the Bug Search Tool Help & FAQ.

This section includes the following topics:

- Resolved Bugs for this Release
- Open Bugs for this Release

## Resolved Bugs for this Release

Table 3 lists descriptions of resolved bugs in Cisco NX-OS Release 6.0(2)A8(3). You can use the record ID to search [Cisco Bug Search Tool](#) for details about the bug.

**Table 3 Cisco NX-OS Release 6.0(2)A8(3) – Resolved Bugs**

Record Number	Resolved Bug Headline
<a href="#">CSCva81933</a>	Trace route packets destined for self-ip received on MCT peer links are dropped.
<a href="#">CSCva82122</a>	System does not throw any incompatibility errors when you downgrade from release 6.0(2)A8(2) to any of the earlier releases that has both vPC and warp mode configured.
<a href="#">CSCvb59217</a>	Nexus refreshes the S,G entry when receives a *,G prune from down stream device.
<a href="#">CSCvb62661</a>	On a vPC topology, a server is unreachable through an orphan port after a reload of the vPC node.
<a href="#">CSCvb60089</a>	Packets get incorrectly routed on VRF aware NAT.
<a href="#">CSCvb76565</a>	Some commands not available for custom RBAC Roles.

## Open Bugs for this Release

There are no open bugs for Cisco NX-OS Release 6.0(2)A8(3).

## Upgrade Path to Cisco NX-OS Release 6.x

*Install All* is the only option that supports upgrade and downgrade between releases.

If a custom CoPP policy is applied after upgrading to Cisco NX-OS Release 6.0(2)A1(1) or later, and if the Nexus 3548 switch is downgraded to Cisco NX-OS Release 5.0, where changes to the CoPP policy are not permitted, the custom CoPP policy is retained and cannot be modified.

**Note:** `copy r s` and `reload` is not a supported method for an upgrade.

## Limitations

The following are the known limitations for Cisco NX-OS Release 6.0(2)A8(3):

- PBR and NAT cannot be supported on the same interface.
- `set ip default next hop` cannot be applied in PBR.
- IGMP packets, which are filtered by report policies on the local switch on which IGMP filtering is enabled, will still get forwarded to the peer switch (See [CSCup50141](#)).
- Counters for the warp SPAN destination port do not work. To check these counters, connect another switch to the destination ports (See [CSCuq66372](#)).
- In a vPC setup, because of a hardware limitation, non-RPF traffic for (S,G) that comes in on the RPF interface for (\*,G) hits the (\*,G) entry instead of being treated as (S,G) non-RPF traffic and dropped. (S,G) non-RPF traffic is then incorrectly forwarded by (\*,G) entry, thus causing traffic duplication. To avoid duplication of Layer 3 multicast traffic by sending the (S,G) RP-bit prune, run the `ip pim pre-build-spt` command (See [CSCun34760](#)).

- While performing Online Insertion Removal (OIR) on the cable or optics of a 40G bundle, you must perform the following sequence of steps for the OIR to be successful (See [CSCu93225](#)):
  - 1 Disable (shut) the 40G port
  - 2 Change the speed from 40G to 10G
  - 3 Perform an OIR on the cable or optics
  - 4 Change the speed from 10G to 40G
  - 5 Re-enable (no shut) the port
- SSH/SCP sessions with Cisco Nexus 3500 series switches running 6.0(2)A8(x) release may fail with a "no matching cipher found" message. This failure is due to the weaker CBC ciphers getting deprecated for security reasons (See [CSCun41202](#)).

## Best Practices

The syntax of the `poap_script.py` file should be validated using the python validation tool before using the file for POAP. Otherwise, if the `poap_script.py` file is edited with a syntax error, the POAP process will exit without giving an error.

## MIB Support

The Cisco Management Information Base (MIB) list includes Cisco proprietary MIBs and many other Internet Engineering Task Force (IETF) standard MIBs. These standard MIBs are defined in Requests for Comments (RFCs). To find specific MIB information, you must examine the Cisco proprietary MIB structure and related IETF-standard MIBs supported by the Cisco Nexus 3000 Series switch. The MIB Support List is available at the following FTP sites:

<ftp://ftp.cisco.com/pub/mibs/supportlists/nexus3000/Nexus3000MIBSupportList.html>

## Related Documentation

Documentation for the Cisco Nexus 3000 Series Switch is available at the following URL:

[http://www.cisco.com/en/US/products/ps11541/tsd\\_products\\_support\\_series\\_home.html](http://www.cisco.com/en/US/products/ps11541/tsd_products_support_series_home.html)

## Documentation Feedback

To provide technical feedback on this document, or to report an error or omission, please send your comments to [nexus3k-docfeedback@cisco.com](mailto:nexus3k-docfeedback@cisco.com). We appreciate your feedback.

## Obtaining Documentation and Submitting a Service Request

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<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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