Cisco Nexus 3548 Series NX-OS Release Notes, Release 6.0(2)A3(1)

Release Date: May 20, 2014
Part Number: OL-29566-08
Current Release: Cisco NX-OS Release 6.0(2)A3(1)

This document describes the features, caveats, and limitations for Cisco Nexus 3548 switches. Use this document in combination with documents listed in the "Obtaining Documentation and Submitting a Service Request" section on page 10.

Note Release notes are sometimes updated with new information about restrictions and caveats. See the following website for the most recent version of the Cisco Nexus 3548 release notes: http://www.cisco.com/en/US/products/ps11541/prod_release_notes_list.html

Note Table 1 shows the online change history for this document.

Table 1 Online History Change

Part Number	Revision	Date	Description
OL-29566-08	A0	May 20, 2014	Created NX-OS Release 6.0(2)A3(1) release notes.

Contents

This document includes the following sections:

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.

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.

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

The Cisco NX-OS Release 6.0(2)A3(1) software requires 135 MB of flash memory.

Hardware Supported

Cisco NX-OS Release 6.0(2)A3(1) 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)A1(1) software.

Table 2 Hardware Supported by Cisco NX-OS Release 6.0(2)A1(1) Software

Hardware	Part Number	Supported Software Release
Cisco Nexus 3500 Series		
Cisco Nexus 3548 switch	N3K-C3548P-10G	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

Table 2 Hardware Supported by Cisco NX-OS Release 6.0(2)A1(1) Software (continued)

Hardware	Part Number	Supported Software Release
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
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
Transceivers		
10-Gigabit		
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-CU SFP+ cable 1 m (Twinax cable)	SFP-H10GB-CU1M	5.0(3)A1(1) and later releases

Table 2 Hardware Supported by Cisco NX-OS Release 6.0(2)A1(1) Software (continued)

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
1-Gigabit Ethernet		
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
100-Megabit Ethernet		
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 Features

This section describes the new features introduced in Cisco NX-OS Release 6.0(2)A3(1). This section includes the following topics:

New Supported Hardware

Cisco NX-OS Release 6.0(2)A3(1) does not include new hardware.

New Software Features

Cisco NX-OS Release 6.0(2)A3(1) includes the following new software features:

Virtual Port Channels

A virtual port channel (vPC) allows links that are physically connected to two different Cisco Nexus devices to appear as a single port channel by a third device. The third device can be a switch, server, or any other networking device. A vPC can provide multipathing, which allows you to create redundancy by enabling multiple parallel paths between nodes and load balancing traffic where alternative paths exist.

Flex Links

Flex Links are a pair of a Layer 2 interfaces (switch ports or port channels) where one interface is configured to act as a backup to the other. The feature provides an alternative solution to the Spanning Tree Protocol (STP).

NAT Enhancements

Cisco NX-OS Release 6.0(2)A3(1) introduces pool support for dynamic NAT. Dynamic NAT allows the configuration of a pool of global addresses that can be used to dynamically allocate a global address from the pool for every new translation. The addresses are returned to the pool after the session ages out or is closed. This allows for a more efficient use of addresses based on requirements.

Support for PAT includes the use of the global address pool.

One Platform Kit (onePK)

Cisco Nexus 3500 Series switches completely support One Platform Kit (onePK) Turbo API in Cisco NX-OS Release 6.0(2)A3(1). onePK is a cross-platform API and software development kit that enables you to develop applications that interact directly with Cisco networking devices. onePK provides you access to networking services by using a set of controlled APIs that share the same programming model and style. For more information, see the following URL:

http://www.cisco.com/en/US/prod/iosswrel/onepk.html

Upgrade and Downgrade Guidelines

Upgrade Path to Cisco NX-OS Release 6.x

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.

Limitations

The following are the known limitations for Cisco NX-OS Release 6.0(2)A3(1):

- In Cisco NX-OS Release 6.0(2)A3(1), disruptive install all takes around 10 minutes to complete even when there is no BIOS upgrade or any similar upgrade process in progress. This does not include reboot time.
- 40G copper splitter cable is not supported for use between Cisco Nexus 6000 and Cisco Nexus 3548.
- When you downgrade from Cisco NX-OS Release 6.0(2)Ax(x) to Cisco NX-OS Release 5.0(x)Ax(x), by design the warp mode configuration is removed. You must reconfigure warp mode after the downgrade is complete.
- Currently, you can configure the same SVI IP address for the switch querier and the IGMP snooping querier. Both queriers will then be active at the same time, and both queriers will send general queries to the VLAN periodically. To prevent this from happening, ensure that you use different IP addresses for the IGMP snooping querier and the switch querier.
- In Warp mode, the Cisco Nexus 3500 switch does not flood Layer 3 traffic to the VLAN on which the port configured with **switchport mac-learn disable** is present, and the traffic is dropped. In Normal mode, the switch should flood the Layer 3 traffic to this VLAN.
- When QOS policies are applied on Port-Channel interfaces, downgrade from Cisco NX-OS Release 6.0(2)A3(1) to Cisco 6.0(2)Ax(x) is blocked. You must remove service-policies from Port-Channel interfaces before downgrade and apply them after downgrade is complete.
- When one of the vPC peers is a root, it is recommended to have a peer-switch configuration on both the vPC peers so that even if one vPC peer stops working, the other is still working. This will keep the STP root working and no TCN will be generated (See CSCun53592)
- 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).
- On a non-PIM DR vPC-peer switch, IGMP OIFs are timed out periodically. This only happens when Bidirectional (BIDR) is configured on both peer switches. Although BIDR groups are not overlapped with ASM groups, it affects ASM groups by changing the Designated Router or Designated Forwarder, and by adding and removing IGMP OIFs constantly.

  vPC on Cisco Nexus 3548 switches does not support PIM BIDR. To stop IGMP OIFS from timing out periodically, remove the BIDR configuration from vPC peer switches (See CSCun11362).
- Although the PTP feature is not supported in Cisco NX-OS Release 5.0(3)A1(1), it does not show as incompatible when you run the **show incompatibility** command.

Ensure that you remove the PTP feature before downgrading from Cisco NX-OS Release 6.0(2)A3(1) to Cisco NX-OS Release 5.0(3)A1(1) (See CSCun15923).

- 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. The (S,G) RP-bit prune is not sent for the (S,G) entry after you run the **clear ip mroute data-created** command. (S,G) non-RPF traffic is then incorrectly forwarded by (*,G) entry, thus causing a multicast traffic storm. To avoid a Layer 2 multicast traffic storm and to ensure that the (S,G) RP-bit prune is sent, run the **ip pim pre-build-spt** command (See CSCun31876).
- When upgrading to Cisco NX-OS Release 6.0(2)A3(1), check whether the default LLDP CoPP value is less than 500 pps. If it is less than 500, manually change it to 500 by using the following commands:

```
switch(config)# policy-map type control-plane policy-name
switch(config-pmap)# class copp-s-lldp
switch(config-pmap-c)# police pps 500
```

Caveats

Open and resolved caveat record numbers are provided with links to the Bug Search page where you can find details about each caveat.

This section includes the following topics:

Resolved Caveats in Cisco NX-OS Release 6.0(2)A3(1)

Table 3 lists descriptions of resolved caveats in Cisco NX-OS Release 6.0(2)A3(1). The record ID links to the Cisco Bug Search page where you can find details about the caveat.

Table 3 Cisco NX-OS Release 6.0(2)A3(1)—Resolved Caveats

Record Number	Resolved Caveat Headline
CSCui25370	CLI will not unregister if onep feature status is not enabled.
CSCuo71857	Dual side vPC PO flaps between BLK/FWD with 181 VLAN.

Open Caveats in Cisco NX-OS Release 6.0(2)A3(1)

Table 1-4 lists open caveats in Cisco NX-OS Release 6.0(2)A3(1). The record ID links to the Cisco Bug Search page, where you can find details about the caveat.

Table 1-4 Cisco NX-OS Release 6.0(2)A3(1)—Open Caveats

Record Number	Open Caveat Headline
CSCuo98834	VTY ACLs are not shown in startup after upgrade from Cisco NX-OS Release 6.0(2)A1(x) to Cisco NX-OS Release 6.0(2)A3(1).
CSCuo49699	MAC is flushed at access when non-root switch at aggregate goes through reload.

Table 1-4 Cisco NX-OS Release 6.0(2)A3(1)—Open Caveats (continued)

Record Number	Open Caveat Headline
CSCum58417	Traffic is dropped if Border router interface is not the DR.
CSCun13638	LACP still in static mode after configuring to active on vPC PO.
CSCun49287	Downgrade from Cisco NX-OS Release 6.0(2)A3(1) to Cisco NX-OS Release 6.0(2)A1(1d) fails due to LLFC incompatibility.
CSCuo49174	LLFC incompatible is not detected if LLFC Tx is configured first and then Rx is configured.
CSCum84163	**install all** takes almost 10 minutes, apart from reboot time.
CSCun42887	Downgrading from Cisco NX-OS Release 6.0(2)A3(x) to lower releases - warp config erased.
CSCuo52878	Same RACL on Layer 3 interface and SVI will not share TCAM resources.
CSCuo61056	Undesirable behavior after applying the same IP address to SVI and igmpsn queri.
CSCun19114	Port channel members flapping on peer reload in vPC.
CSCuo72080	Change default LLDP CoPP to 500 after upgrade from releases other than Cisco NX-OS Release 6.0(2)A3(1).

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 3548 switch. The MIB Support List is available at the following FTP sites:

ftp://ftp.cisco.com/%2Fpub/mibs/supportlists/nexus3548/Nexus3548MIBSupportList.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

The documentation set is divided into the following categories:

Release Notes

The release notes are available at the follwing URL:

http://www.cisco.com/en/US/products/ps11541/prod_release_notes_list.html

Installation and Upgrade Guides

The installation and upgrade guides are available at the following URL:

http://www.cisco.com/en/US/products/ps11541/prod_installation_guides_list.html

Command References

The command references are available at the following URL:

http://www.cisco.com/en/US/products/ps11541/prod_command_reference_list.html

Technical References

The technical references are available at the following URL:

http://www.cisco.com/en/US/products/ps11541/prod_technical_reference_list.html

Configuration Guides

The configuration guides are available at the following URL:

http://www.cisco.com/en/US/products/ps11541/products_installation_and_configuration_guides_list.html

Error and System Messages

The system message reference guide is available at the following URL:

http://www.cisco.com/en/US/products/ps11541/products_system_message_guides_list.html

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

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