Cisco Nexus 3000 Series NX-OS Release Notes, Release 9.3(5)

This document describes the features, issues, and exceptions of Cisco NX-OS Release 9.3(5) software for use on Cisco Nexus 3000, 3100, 3200, 3400-S, 3500 and 3600 platform switches. For more information, see *Related Content*.

Note: The Cisco Nexus 34180YC and 3464C switches are not supported in Cisco NX-OS Release 9.3(5).

Table 1: Online History Change

Date	Description
Jun 01, 2022	Updated the Exceptions section for Cisco Nexus 3132C-Z switches.
Jan 18, 2021	Updated the Upgrade and Downgrade section for Compact NX-OS Image.
October 19, 2020	Updated the Upgrading Cisco Nexus 3000 Series Switches section.
July 21, 2020	Cisco NX-OS Release 9.3(5) became available.

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New Software Features

Table 2: New Software Features

Feature	Description
Pre-compacted NX-OS Images	Cisco Nexus 3048, 3064, 3132 (except for the N3K-C3132Q-V), and 3172 platform switches with a model number that does not end in -XL must run a "compact" NX-OS software image due to limited bootflash space. This "compact" image can be created using the NX-OS Compact Image procedure; alternatively, a compact NX-OS software image can be downloaded directly from Cisco's Software Download website. This requirement does not apply to any other model of Cisco Nexus 3000 or 3100 series switch. This requirement does not apply to the Nexus 3132Q-V switch. For more information, see the following documents: • "Upgrade and Downgrade" section in this document. • *Cisco Nexus 3000 Series NX-OS Software Upgrade and Downgrade Guide, Release 9.3(x)*
ACL Consistency Checker	Added support for ACL consistency checker on Cisco Nexus C3636C-R and C36180YC-R switches. For more information, see the *Cisco Nexus 9000 Series NX-OS Troubleshooting Guide, Release 9.3(x)*
Alias Option for Sensor Path for Model-Driven Telemetry	Added the Alias Option for Sensor Path for Model-Driven Telemetry for Cisco Nexus 3000, 3100, and 3200 platform switches. For more information, see the *Cisco Nexus 3000 Series NX-OS Programmability Guide, Release 9.3(x).*
BGP PIC Core	Added support for Cisco Nexus 3400-S platform switches. For more information, see the *Cisco Nexus 3400-S NX-OS Unicast Configuration Guide, Release 9.3(x)*
Breakout Support	Added support for the following features: • 168 profile port mode on Cisco Nexus 3408-S switches. • Native 40G support (with a 40G SFP) on 100G LEMs for Cisco Nexus 3408-S switches. For more information, see the *Cisco Nexus 3400-S NX-OS Interfaces Configuration Guide, Release 9.3(x)*

Feature	Description
Cisco NX-OS Upgrade History	Added support for maintaining the software upgrade history across upgrades for all Cisco Nexus 3000 Series switches. For more information, see the following documents: • *Cisco Nexus 3000 Series NX-OS Software Upgrade and Downgrade Guide, Release 9.3(x).* • *Cisco Nexus 3400-S Series NX-OS Software Upgrade and Downgrade Guide, Release 9.3(x).* • *Cisco Nexus 3500 Series NX-OS Software Upgrade and Downgrade Guide, Release 9.3(x).* • *Cisco Nexus 3600 Series NX-OS Software Upgrade and Downgrade Guide, Release 9.3(x).*
Configure Jobs Mode Option for Configuration Replace	Added support for the configure jobs mode for Cisco Nexus 3000, 3100, and 3200 platform switches. For more information, see the *Cisco Nexus 3000 Series NX-OS System Management Configuration Guide, Release 9.3(x).*
Configuration Replace for Port Profiles	Added support for port profiles for Cisco Nexus 3000, 3100, and 3200 platform switches. For more information, see the *Cisco Nexus 3000 Series NX-OS System Management Configuration Guide, Release 9.3(x).*
Device Led Conversion (DLC)	Added support for conversion of a traditional license to a Smart License for all Cisco Nexus 3000 Series switches. For more information, see the *Cisco NX-OS Licensing Guide*.
DSCP Wildcard Mask	Added support for creating an ACL that matches or filters traffic based on a DSCP bit mask on Cisco Nexus 3048, 3064, 3164Q, 3172PQ, and 3172TQ switches. For more information, see: *Cisco Nexus 3000 Series NX-OS QoS Configuration Guide, Release 9.3(x)*
Event Log Auto-Collection and Backup	Added updates to the auto-collection YAML file and additional options for the bloggerd log-snapshot command for all Cisco Nexus 3000 Series switches. For more information, see the following documents: • *Cisco Nexus 3000 Series NX-OS System Management Configuration Guide, Release 9.3(x).* • *Cisco Nexus 3400-S NX-OS System Management Configuration Guide 9.3(x)* • *Cisco Nexus 3548 Switch NX-OS System Management Configuration Guide, Release 9.3(x)* • *Cisco Nexus 3600 NX-OS System Management Configuration Guide, Release 9.3(x) .*
Egress PACL	Added support for Cisco Nexus 3400-S platform switches. For more information, see the *Cisco Nexus 3400-S NX-OS Security Configuration Guide, Release 9.3(x).*

Feature	Description
gNMI Get/Set	Added support for Cisco Nexus 3000, 3100, 3200, and 3600 platform switches. For more information, see the following documents: • *Cisco Nexus 3000 Series NX-OS Programmability Guide, Release 9.3(x)* • *Cisco Nexus 3600 NX-OS Programmability Guide, Release 9.3(x)*
IPv4/IPv6 MIB Support	Added support for configuring hardware-forwarded IPv4/IPv6 interface statistics on Cisco Nexus 3400-S platform switches. For more information, see *Cisco Nexus 3400-S NX-OS Interfaces Configuration Guide, Release 9.3(x)*
IPv6 Egress ACL	Added support for IPv6 egress ACL on Cisco Nexus 3600 platform switches. For more information, see *Cisco Nexus 3600 NX-OS Security Configuration Guide, Release 9.3(x)*
IPv6 MLD Snooping	Added support for Cisco Nexus 3132Q-V, 31108PC-V, 31108TC-V, 3132C-Z, 3232C, 3264C-E, and 3264Q-S switches. For more information, see the *Cisco Nexus 3000 Series NX-OS Multicast Routing Configuration Guide, Release 9.3(x)*
MLD Snooping	Added support for MLD snooping for Cisco Nexus 3100 and 3200 platform switches. For Cisco Nexus 3132Q-40GE, 3172PQ-10GE, 3172TQ-10GT switches and their XL variants, the system switch-mode command is required to support MLD snooping. For more information, see the *Cisco Nexus 3000 Series NX-OS Multicast Routing Configuration Guide, Release 9.3(x).*
Modify Format of Repeated Syslog Messages.	Added support for an updated indicator in repeated syslog messages for all Cisco Nexus 3000 Series switches. For more information, see the following documents: • *Cisco Nexus 3000 Series NX-OS System Management Configuration Guide, Release 9.3(x).* • *Cisco Nexus 3400-S NX-OS System Management Configuration Guide 9.3(x).* • *Cisco Nexus 3548 Switch NX-OS System Management Configuration Guide, Release 9.3(x).* • *Cisco Nexus 3600 NX-OS System Management Configuration Guide, Release 9.3(x).*

Feature	Description
Multiple LLDP Neighbors per Physical Interface	Added support for up to three LLDP neighbours per interface and support for LLDP on interface port channels. This feature is supported for Cisco Nexus 3400-S and 3600 platform switches. For more information, see the following documents: • *Cisco Nexus 3400-S NX-OS Layer 2 Switching Configuration Guide, Release 9.3(x).* • *Cisco Nexus 3600 NX-OS Layer 2 Switching Configuration Guide, Release 9.3(x).*
NDB STP/CDP Packet Capture	Added support for Cisco Nexus 3548 switches. For more information, see the Cisco OpenFlow Agent for Nexus 3000 and 9000 Series Switches.
NDcPP: OCSP for Syslog	Added OCSP support for syslog servers for Cisco Nexus 3000, 3100, and 3200 platform switches. For more information, see the *Cisco Nexus 3000 Series NX-OS Security Configuration Guide, Release 9.3(x)*
NETCONF/gRPC	Added support for Cisco Nexus 3000, 3100, and 3200 platform switches. For more information, see the *Cisco Nexus 3000 Series NX-OS Programmability Guide, Release 9.3(x).*
NX-API Idle Timeout	Enables you to configure the amount of time before an idle NX-API session is invalidated for all Cisco Nexus 3000 Series switches. • *Cisco Nexus 3000 Series NX-OS Programmability Guide, Release 9.3(x)* • *Cisco Nexus 3400-S Series NX-OS Programmability Guide, Release 9.3(x)* • *Cisco Nexus 3500 Series NX-OS Programmability Guide, Release 9.3(x)* • *Cisco Nexus 3600 NX-OS Programmability Guide, Release 9.3(x)*
NX-API REST Data Paths	For more information and detailed list of updates, see the *New and Changed Information* section of the *Cisco Nexus 3000 and 9000 Series NX-API REST User Guide and API Reference*.
Permanent License Reservation (PLR) and Specific License Reservation (SLR)	Added support to license dark networks or air-gapped networks for all Cisco Nexus 3000 Series switches. For more information, see the *Cisco NX-OS Licensing Guide*.
PTP ACL Redirect	Added support for PTP unicast forwarding by hardware ACL for Cisco Nexus 3500 platform switches. . For more information, see *Cisco Nexus 3000 Series NX-OS System Management Configuration Guide, Release 9.3(x)*
PortLoopback Test	Added support for the runtime health monitoring PortLoopback test for Cisco Nexus 3400-S platform switches. . For more information, see *Cisco Nexus 3000 Series NX-OS System Management Configuration Guide, Release 9.3(x)*

Feature	Description
Python 3 on NX-OS	Added support for Python 3. For more information, see the • *Cisco Nexus 3000 Series NX-OS Programmability Guide, Release 9.3(x)* • *Cisco Nexus 3400-S Series NX-OS Programmability Guide, Release 9.3(x)* • *Cisco Nexus 3500 Series NX-OS Programmability Guide, Release 9.3(x)* • *Cisco Nexus 3600 NX-OS Programmability Guide, Release 9.3(x)*
Seamless Integration of EVPN (TRM) with MVPN	Enables packets to be handed off between a VXLAN network (TRM or TRM Multi-Site) and an MVPN network. A Cisco Nexus 3600 platform switch with VXLAN TRM and MVPN enabled can serve as the handoff node. This central node performs the necessary packet forwarding, encapsulation, and decapsulation to send the traffic to the respective receivers. It is the PE for the MVPN network and the VTEP for the VXLAN network. For more information, see the *Cisco Nexus 3600 NX-OS VXLAN Configuration Guide, Release 9.3(x)*
Software Image compaction	Added support for compacting the software image during copy operations. For more information, see *Cisco Nexus 3000 Series NX-OS System Management Configuration Guide, Release 9.3(x)*
Syslog for exceeding logging message size threshold	Support for logging message files to location that is persistent across system reloads. For more information, see *Cisco Nexus 3000 Series NX-OS System Management Configuration Guide, Release 9.3(x)*
YANG Support for Multiple Keys	Added YANG support for Multiple Keys. For more information, see • *Cisco Nexus 3000 Series NX-OS Programmability Guide, Release 9.3(x)* • *Cisco Nexus 3600 NX-OS Programmability Guide, Release 9.3(x)*

New Hardware Features

Cisco NX-OS Release 9.3(5) does not include any new hardware.

Release Versioning Strategy

Cisco Nexus 9000 Series switches and Cisco Nexus 3000 Series switches use the same NX-OS binary image also called the “unified" image. The binary image covers all the variations of the Cisco Nexus 3000 and 9000 series switches. Cisco NX-OS Release 9.2(1) was the first release that adopted unified version numbering. With unified version numbering, the platform designator is obsolete.

Moving forward for the previously identified platforms, we will be adopting the simplified 3-letter versioning scheme. For example, a release with X.Y(Z) would mean:

X – Unified release major

Y – Major / Minor release

Z – Maintenance release (MR)

Where the Z = 1 is always the first FCS release of a Major/Minor release.

An example of a previous release number is: 7.0(3)I7(4). In this format, the 'I' is the platform designator.

Note: In order to accommodate upgrade compatibility from an older software version that is expecting a platform designator, when the install all command is entered or the show install all impact command is entered, the version string appears as 9.3(5)I9(1). The "I9(1)" portion of the string can be safely ignored. It will later appear as 9.3(5).

Note: Cisco NX-OS Release 9.3(5) runs on all Cisco Nexus 3000 Series switches except the Cisco Nexus 34180YC and 3464C switches.

Open Issues

The following tables lists the open issues for Cisco Nexus 300 Series switches in Cisco NX-OS Release 9.3(5). Click the Bug ID to search the Cisco Bug Search Tool for additional information about the bug.

- Open Issues in Cisco Nexus 3000, 3100, 3200 and 3400-S Switches
- Open Issues in Cisco Nexus 3500 Switches

Table 3: Open Issues in Cisco Nexus 3000, 3100, 3200 and 3400-S Series Switches

Bug ID	Description
CSCvu74434	**Headline**: Cyclic Redundancy Check (CRC) error on DR4(cmis4.0) to 100G FR on Cisco Nexus C3432D-S and C3408-S switches. **Symptom**: CRC seen on the 100G FR link. **Workaround**: Flap the link that has CRC.

Resolved Issues

The following tables list the resolved issues for Cisco Nexus 3000 Series switches in Cisco NX-OS Release 9.3(5). Click the Bug ID to search the Cisco Bug Search Tool for additional information about the bug.

- Resolved Issues in Cisco Nexus 3000, 3100, 3200 and 3400-S Switches
- Resolved Issues in Cisco Nexus 3500 Switches
- Resolved Issues in Cisco Nexus 3600 Switches

Table 4: Resolved Issues in Cisco Nexus 3000, 3100, 3200, and 3400-S Series Switches

Bug ID	Description

Bug ID	Description

CSCvu24785	**Headline**: switchport dot1q ethertype 0x88a8 but packets encapsulated in 0x8100.
	
	Symptom:
	`Ethernet II, Src: 70:6d:15:41:6b:43 (70:6d:15:41:6b:43), Dst: e4:c7:22:dc:f8:01 (e4:c7:22:dc:f8:01)`
	`    Destination: e4:c7:22:dc:f8:01 (e4:c7:22:dc:f8:01)`
	`        Address: e4:c7:22:dc:f8:01 (e4:c7:22:dc:f8:01)`
	`        .... ...0 .... .... .... .... = IG bit: Individual address (unicast)`
	`        .... ..0. .... .... .... .... = LG bit: Globally unique address (factory default)`
	`    Source: 70:6d:15:41:6b:43 (70:6d:15:41:6b:43)`
	`        Address: 70:6d:15:41:6b:43 (70:6d:15:41:6b:43)`
	`        .... ...0 .... .... .... .... = IG bit: Individual address (unicast)`
	`        .... ..0. .... .... .... .... = LG bit: Globally unique address (factory default)`
	`    Type: 802.1Q Virtual LAN (0x8100) <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<< Remains 0x8100`
	`802.1Q Virtual LAN, PRI: 0, CFI: 0, ID: 82`
	`    000. .... .... .... = Priority: 0`
	`    ...0 .... .... .... = CFI: 0`
	`    .... 0000 0101 0010 = ID: 82`
	`    Type: 802.1Q Virtual LAN (0x8100)`
	`802.1Q Virtual LAN, PRI: 0, CFI: 0, ID: 10`
	`    000. .... .... .... = Priority: 0`
	`    ...0 .... .... .... = CFI: 0`
	`    .... 0000 0000 1010 = ID: 10`
	`    Type: IP (0x0800)`
	
	Workaround:
	1. default the ethertype after port flap
	no switchport dot1q ethertype
	2. Re-apply the required ethertype
	switchport dot1q ethertype <>

CSCvt72230	**Headline**: OpenFlow traffic loss when Eth1/32 is a member port in port-channel for egress traffic **Symptom**: Packet dropped when they are having Eth1/32 as a member in the egress port-channel. **Workaround**: NA
CSCvs20868	**Headline**: Add SYSLOG message for any unknown multicast or broadcast MAC flooding on lossless priorities. **Symptom**: NA **Workaround**: NA
CSCvt76516	**Headline**: On Cisco Nexus 3000 switches, the protocol multicast packets received over L3 interface flood to L2 BD. **Symptom**: On Cisco Nexus 3000 switches (in MST spanning tree mode). L3 interface receive protocol multicast packets. **Workaround**: After configuring or converting from L2 to L3, execute the following command on the affected interfaces: **`no switchport; switchport; switchport mode trunk; sleep 10; switch trunk allowed vlan none; no switchport`**

Bug ID	Description
CSCvt81574	**Headline**: Multicast traffic forwarded back to source port in N3K mode. **Symptom**: Multicast link-local traffic is being sent back to source-port configured to allow VLAN mapped to a vn-segment. **Workaround**: Remove the vn-segment if it is not required.
CSCvt67180	**Headline**: Cyclic Redundancy Check (CRC) error on 25G AOC links with port flap script/peer reload on Cisco Nexus C34200YC switch. **Symptom**: CRC errors on ports with SFP28 AOC cables. **Workaround**: Execute the `shut` and `no shut` commands on the impacted of the ports.

Table 5: Resolved Issues in Cisco Nexus 3500 Series Switches

Bug ID	Description
CSCvu00752	**Headline**: Round-off level for 1G and 40G needs to be corrected for displaying warning. **Symptom**: When configuring storm-control broadcast/multicast level 0.8 or less on 1G port, even 64 Bytes frame is dropped due to storm-control. You can find these drops by show interface or show interface counter storm-control. **Workaround**: Configuring storm-control broadcast/multicast level 0.9 or higher or Increase link speed 10G or higher.
CSCvu39379	**Headline**: Cisco Nexus 3500 switches stop sending PTP delay-response messages. **Symptom**: PTP client reporting high PTP correction. **Workaround**: Flip-flop GPE16 interrupt from bash prompt: 1. echo disable > /sys/firmware/acpi/interrupts/gpe16 2. echo enable > /sys/firmware/acpi/interrupts/gpe16
CSCvu59181	**Headline:** L2 Multicast not working for PVLAN (same community VLAN) with IGMP snooping disabled **Symptom**: L2 Multicast not working for PVLAN (same community VLAN) with IGMP snooping disabled **Workaround**: NA
CSCvu54266	**Headline**: Clearing ARP or MAC may break the ECMP hardware programming on Cisco Nexus 3500 switches. **Symptom**: • Latency/packet loss for data plane traffic • Random packet loss for data plane flows • Data plane is punted to the CPU (data plane flows reported on ethanalyzer captures) **Workaround**: Remove and re-configure ECMP (for example, modify the IGP cost in such a way that ECMP is removed and then revert the configuration). Any change to ECMP members maycause reprogramming of the ECMP entry in hardware.
CSCvt09871	**Headline:** Interfaces connected with certain DAC cables may show as *not supported.* **Symptom**: Certain DAC used on Cisco Nexus 3548 switches may show *transceiver is not supported* **Workaround**: Remove and reinsert the SFP.

Bug ID	Description

CSCvu04531	**Headline:** Cannot disable MAC learning on Cisco Nexus 3548-XL switch after upgrading to 7.0(3)I7(7).
	
	Symptom:
	
	With MAC learning disabled globally and on the interface level we still see MAC is being learnt:
	<pre>
	STLD1-630.02.02-N3K-RU35(config-if)# show run | i mac
	mac-learn disable
	  switchport mac-learn disable
	
	STLD1-630.02.02-N3K-RU35(config-if)# show mac address-table
	   VLAN MAC Address Type age Secure NTFY Ports
	---------+-----------------+--------+---------+------+----+-----------------
	-
	* 1 e865.49ee.8101 dynamic 0 F F Eth1/10
	G - b4de.313e.c5fc static - F F sup-eth1(R)
	G 1 b4de.313e.c5fc static - F F sup-eth1(R)
	</pre>
	Workaround: Configure the interface seeing MAC learning in single interface Port-channel, for example: "channel-group mode x", where "x" is the port-channel number.

Known Issues

The following tables lists the known behaviors in Cisco Nexus 3000 Series switches in Cisco NX-OS Release 9.3(5). Click the bug ID to search the Cisco Bug Search Tool for details about the bug.

Table 6: Known Behaviors in Cisco Nexus 3000 and 3100 Series Switches

Bug ID	Description
CSCvg03567	**Headline**: With switchport mac-learn disable command, MACs are still learnt on VNI enabled VLAN. **Symptom**: **`switchport mac-learn disable`** command/ configuration has no effect on VNI enabled VLAN. **Workaround**: None.
CSCvg68550	**Headline**: The MPLS SR outputs stats incremented for all FECs with same next-hop during POP (swap with 3). **Symptom**: For Broadcom ASIC Based Trident series platform, In the MPLS SR topology the TX output stats are getting incremented for all FEC with same next hop. **Workaround**: None.

Large core files are split into 3 or more files. For example:

- 1405964207_0x101_iftmc_log.3679.tar.gzaa
- 1405964207_0x101_iftmc_log.3679.tar.gzab
- 1405964207_0x101_iftmc_log.3679.tar.gzac

To decode the multiple core files, first club the files to a single file:
$ cat 1405964207_0x101_iftmc_log.3679.tar.gz* > 1405964207_0x101_iftmc_log.3679.tar.gz

Table 7: Known Behaviors in Cisco Nexus 3500 Series Switches

Bug ID	Description
CSCvs16850	**Headline**: MTC does not support random-detect ECN. It only supports dctcp ecn. Unsupported cli has been removed for MTC. **Symptom**: MTC does not support random-detect ECN. It only supports dctcp ecn. Unsupported cli has been removed for MTC **Workaround**: Cisco Nexus 3500 switches support the command dctcp; but does not support random-detect ecn. The unsupported command (random-detect ecn) is removed in Cisco NX-OS Release 9.3(5). However, you may not get warnings or errors when you configure the command in releases earlier to Cisco NX-OS Release 9.3(5) and then upgrade to Cisco NX-OS Release 9.3(5). The unsupported command is retained in the running-configuration in such cases.

Device Hardware

The following tables list the Cisco Nexus 3000 Series hardware that Cisco NX-OS Release 9.3(5) supports. For additional information about the supported hardware, see the Hardware Installation Guide for your Cisco Nexus 3000 Series devices.

- Cisco Nexus 3000 and 3100 Series Switches
- Cisco Nexus 3000 and 3100 Series fans and fan trays and Power Supplies
- Cisco Nexus 3200 Series Switches
- Cisco Nexus 3400-S Series Switches
- Cisco Nexus 3500 Series Switches
- Cisco Nexus 3500 Series fans and fan trays, and Power Supplies
- Cisco Nexus 3600 Series Switches

Table 8: Cisco Nexus 3000 and 3100 Series Switches

Product ID	Description
N3K-C3048TP-1GE	Cisco Nexus 3048 switch
N3K-C3064PQ	Cisco Nexus 3064 switch
N3K-C3064PQ-10GE	Cisco Nexus 3064-E switch
N3K-C3064PQ-10GX	Cisco Nexus 3064-X switch

Product ID	Description
N3K-C3064TQ-10GT	Cisco Nexus 3064-TQ switch
N3K-C31108PC-V	Cisco Nexus 31108PC-V switch
N3K-C31108TC-V	Cisco Nexus 31108TC-V switch
N3K-C31128PQ-10GE	Cisco Nexus 31128PQ, 96 x 10 Gb-SFP+, 8 x 10-Gb QSFP+, 2-RU switch
N3K-C3132C-Z	Cisco Nexus 3132C-Z switch
N3K-C3132Q-40GE	Cisco Nexus 3132Q switch
N3K-C3132Q-40GX	Cisco Nexus 3132Q-X switch
N3k-C3132Q-V	Cisco Nexus 3132Q-V switch
N3K-C3132Q-XL	Cisco Nexus C3132Q-XL switch
N3K-C3164Q-40GE	Cisco Nexus 3164Q, 64 x 40-Gb SFP+, 2-RU switch
N3K-C3172PQ-10GE	Cisco Nexus 3172PQ switch
N3K-C3172PQ-XL	Cisco Nexus C3172PQ-XL switch
N3K-C3172TQ-10GT	Cisco Nexus 3172TQ switch
N3K-C3172TQ-XL	Cisco Nexus C3172TQ-XL switch

Table 9: Cisco Nexus 3000 and 3100 Series Fans, Fan Trays and Power Supplies

Product ID	Description
N2200-PAC-400W	Cisco Nexus 2000 or 3000 400W AC power supply, forward airflow (port side exhaust)
N2200-PAC-400W-B	Cisco Nexus 2000 or 3000 400W AC power supply, reverse airflow (port-side intake)
N2200-PDC-400W	Cisco Nexus 2000 or 3000 400W DC power supply, forward airflow (port side exhaust)
N3K-C3048-FAN	Cisco Nexus 3048 fan module with forward airflow (port-side exhaust)
N3K-C3048-FAN-B	Cisco Nexus 3048 fan module with reverse airflow (port-side intake)
N3K-C3064-X-BA-L3	Cisco Nexus 3064-X reverse airflow (port-side intake) AC power supply
N3K-C3064-X-BD-L3	Cisco Nexus 3064-X forward airflow (port-side intake) DC power supply
N3K-C3064-X-FA-L3	Cisco Nexus 3064-X forward airflow (port-side exhaust) AC power supply
N3K-C3064-X-FD-L3	Cisco Nexus 3064-X forward airflow (port-side exhaust) DC power supply
N3K-PDC-350W-B	Cisco Nexus 2000 DC power supply with reverse airflow (port-side intake)
N3K-PDC-350W-B	Cisco Nexus 2000 or 3000 350W DC power supply, reverse airflow (port side intake)
NXA-FAN-30CFM-B	Cisco Nexus 2000 or 3000 individual fan, reversed airflow (port-side intake)
NXA-FAN-30CFM-F	Cisco Nexus 2000 or 3000 individual fan, forward airflow (port-side exhaust)
NXA-PAC-500W	Cisco Nexus 3064-T 500W forward airflow (port-side exhaust) AC power supply
NXA-PAC-500W-B	Cisco Nexus 3064-T 500W reverse airflow (port-side intake) AC power supply

Table 10: Cisco Nexus 3200 Series Switches

Product ID	Description
N3K-C3232C	Cisco Nexus 3232C switch
N3K-C3264C-E	Cisco Nexus 3264C-E switch
N3K-C3264Q	Cisco Nexus 3264Q switch

Table 11: Cisco Nexus 3400-S Series Switches

Product ID	Description
N3K-C3408-S	Cisco Nexus 3408-S switch with 32 ports of QSFP-DD
N3K-C3432D-S	Cisco Nexus 3432D-S switch with 32 ports of QSFP-DD

Table 12: Cisco Nexus 3500 Series Switches

Product ID	Description
N3K-C3524P-10G	Cisco Nexus 3524 switch
N3K-C3524P-10GX	Cisco Nexus 3524 switch, 24 SFP+
N3K-C3524P-XL	Cisco Nexus 3524-XL switch
N3K-C3548P-10G	Cisco Nexus 3548 switch
N3K-C3548P-10GX	Cisco Nexus 3548X switch, 48 SFP+
N3K-C3548P-XL	Cisco Nexus 3548-XL switch

Table 13: Cisco Nexus 3500 Series Fans, Fan Trays and Power Supplies

Product ID	Description
N2200-PAC-400W	Cisco Nexus 2000 or 3000 400W AC power supply, forward airflow (port side exhaust)
N2200-PAC-400W-B	Cisco Nexus 2000 or 3000 400W AC power supply, reverse airflow (port side intake)
N2200-PDC-400W	Cisco Nexus 2000 or 3000 400W DC power supply, forward airflow (port side exhaust)
N3K-PDC-350W-B	Cisco Nexus 2000 or 3000 350W DC power supply, reverse airflow (port side intake)

Product ID	Description
NXA-FAN-30CFM-B	Cisco Nexus 2000 or 3000 individual fan, reverse airflow (port side intake)
NXA-FAN-30CFM-F	Cisco Nexus 2000 or 3000 individual fan, forward airflow (port side exhaust

Table 14: Cisco Nexus 3600 Series Switches

Product ID	Description
N3K-C3636C-R	The Cisco Nexus 3636C-R is a 1 rack unit (RU) switch with 36 100-Gigabit QSFP28 ports, 40-Gigabit QSFP, 2 management ports, 1 console port, and 1 USB port. The switch supports both port-side exhaust and port-side intake airflow schemes. The switch has two power supplies, one for operations and the other for redundancy. Both power supplies must be either AC power supplies or DC power supplies.
N3K-C36180YC-R	The Cisco Nexus 36180YC-R is a 1 rack unit (RU) switch with 48 1/10/25-Gigabit SFP ports and 6 40-Gigabit QSFP/100-Gigabit QSFP28 ports, 1 management port, 1 console port, and 1 USB port. The switch supports both port-side exhaust and port-side intake airflow schemes. The switch has two power supplies, one for operations and the other for redundancy. Both power supplies must be either AC power supplies or DC power supplies.

Upgrade and Downgrade

Upgrading Cisco Nexus 3000 and 3100 Series Switches

To perform a software upgrade for Cisco Nexus 3000 and 3100 Series switches that run in N3K mode, follow the instructions in the Cisco Nexus 3000 Series NX-OS Software Upgrade and Downgrade Guide, Release 9.3(x).

To perform a software upgrade for Cisco Nexus 3100 Series switches that run in N9K mode, follow the instructions in the Cisco Nexus 9000 Series NX-OS Software Upgrade and Downgrade Guide, Release 9.3(x).

This section includes the following topics:

- Upgrade Path to Cisco NX-OS Release 9.3(5)
- Guidelines and Limitations - Upgrade

Upgrade Path to Cisco NX-OS Release 9.3(5)

- Non-disruptive standard ISSU on Cisco Nexus 3172PQ, 3172TQ, 3132Q, 3132Q-X, 3064, 3064-X, 3064-T, 3048, 3016 (4 GB low-memory platforms) is not supported to Cisco Nexus 9.3(1) and later releases.

- Cisco Nexus 3132Q-XL, 3172PQ-XL, and 3172TQ-XL switches support an ISSU to Cisco NX-OS Release 9.3(1) and later releases. For the list of platforms and releases that support a non-disruptive In-Service Software Upgrade (ISSU) to Cisco NX-OS Release 9.3(5), see the Cisco NX-OS ISSU Support Matrix.

The following disruptive upgrade paths are supported:

- For Cisco Nexus 3000 and 3100 Series switches (except Cisco Nexus 3048, 3132C-Z, 3164Q, 31128PQ, and 3100-V switches), use one of the two following upgrade paths:
  - Release 6.0(2)U5(1) -> Release 6.0(2)U6(10) -> Release 7.0(3)I7(8) -> Release 9.3(5)
  - Release 9.2(1) -> Release 9.2(4) -> Release 9.3(5)

- For Cisco Nexus 3048 switches, use one of the two following upgrade paths:
  - Release 6.0(2)U5(1) -> Release 6.0(2)U6(2a) -> Release 6.0(2)U6(10) -> Release 7.0(3)I7(8) -> Release 9.3(5)
  - Release 9.2(1) -> Release 9.2(4) -> Release 9.3(5)

- For Cisco Nexus 3132C-Z Series switches:
  Release 9.2(2) or later -> Release 9.3(5)
- For Cisco Nexus 3164Q, 31128PQ, and 3100-V switches:
  Release 7.0(3)I2(1) or later -> Release 9.3(5)

- For Cisco Nexus 3264C-E switches:
  Release 9.2(1) -> Release 9.3(5)

Upgrade Guidelines and Limitations

The following guidelines and limitations are applicable when you upgrade to Cisco NX-OS Release 9.3(5):

- Cisco Nexus 3048, 3064, 3132 (except for the N3K-C3132Q-V), and 3172 platform switches with a model number that does not end in -XL must run a “compact” NX-OS software image due to limited bootflash space. This “compact” image can be created using the NX-OS Compact Image procedure; alternatively, a compact NX-OS software image can be downloaded directly from Cisco's Software Download website. This requirement does not apply to any other model of Cisco Nexus 3000 or 3100 series switch. This requirement does not apply to the Nexus 3132Q-V switch.

- The MD5/SHA512 checksum published on Cisco's Software Download website for a compact NX-OS software image may not match the MD5/SHA512 checksum of a compact image created through the NX-OS Compact Image procedure.

- The only supported method of upgrading is install all from Release 6.0(2)U6(3a) or later due to the need to upgrade the BIOS. Without the Release 9.3(5) BIOS, the 9.3(2) image will not load.

- While performing a non-disruptive ISSU, VRRP and VRRPV3 will display the following messages:

  - If VRRPV3 is enabled:

    2015 Dec 29 20:41:44 MDP-N9K-6 %$ VDC-1 %$ %USER-0-SYSTEM_MSG: ISSU ERROR: Service "vrrpv3" has sent the following message: Feature vrrpv3 is configured. User can change vrrpv3 timers to 120 seconds or fine tune these timers based on upgrade time on all Vrrp Peers to avoid Vrrp State transitions. – sysmgr

- If VRRP is enabled:

  2015 Dec 29 20:45:10 MDP-N9K-6 %$ VDC-1 %$ %USER-0-SYSTEM_MSG: ISSU ERROR: Service "vrrp-eng" has sent the following message: Feature vrrp is configured. User can change vrrp timers to 120 seconds or fine tune these timers based on upgrade time on all Vrrp Peers to avoid Vrrp State transitions. − sysmgr

- Change the port mode from oversubscribed to line-rate and then reload the switch:
  - On Nexus 31108PC-V and 31108TC-V switches, change from 48x10g+6x100g to 48x10g+4x100g+2x40g.
  - On Nexus 3132Q-V switches change from 32x40g or 26x40g to 24x40g.
- Change the switching-mode from cut-through to store-and-forward and then reload the switch.
- An error occurs when you try to perform an ISSU if you changed the reserved VLAN without entering the copy running-config save-config and reload commands.
- Subinterfaces cannot be used as network ports.
  - Cisco Nexus 3000-XL platforms do not support breakout using speed 10000 CLI command. Use the interface breakout module 1 port <num> map 10g-4x CLI command instead.
  - Chunking is enabled while displaying XML output for any CLI, and html tags (& lt; and & gt;) are displayed instead of < and > both on the sandbox and while running the Python script (See CSCup84801).

    This is expected behavior. Each chunk should be in XML format for you to parse it and extract everything inside the <body> tag. This is done so that it can be later concatenated with similar output from all the chunks of the CLI XML output. After all the chunks are concatenated to get the complete XML output for the CLI, this complete XML output can be parsed for any parameter.

    The following workaround is recommended to address this issue:
    - Concatenate the <body> outputs from each chunk
    - Replace all the html tags (& lt; and & gt;) with < and >
    - Parse for any XML tag needed
- If you use the write erase command, you cannot view the output for the show startup *feature* command. To view the startup configuration, you must then use the show startup-config command. This limitation will remain until you run the copy running-config startup-config command. After that, the show startup-config feature command will display the feature-only configuration output as expected (See CSCuq15638).
- A Python traceback is seen while running the show xml command by using the Python shell. The exception type is httplib.IncompleteRead. This happens when you use Python scripts to leverage the NXAPI for retrieving switch data through XML or JSON. You should handle the exceptions in your Python scripts (See CSCuq19257).
- While upgrading to a new release, when you create a checkpoint without running the setup script, the checkpoint file does not contain the copp-s-mpls class. After you run the write erase command and reload the switch, the copp-s-mpls class is created when the default configuration is applied. When a rollback is done to this checkpoint file, it detects a change in the CoPP policy and tries to delete all class-maps. Because you cannot delete static class-maps, this operation fails, and, in turn, the rollback also fails.

This can also happen if you create a checkpoint, then create a new user-defined class and insert the new class before any other existing class (See CSCup56505).

The following workarounds are recommended to address this issue:

- Run setup after upgrading to a new release.
- Always insert the new classes at the end before a rollback.

- When both the ip icmp-errors source and ip source *intf* icmp error commands are configured, then the command that is configured last takes effect.

  Thereafter, if the last configured command is removed, the switch does not get configured with the command that was configured first.

- Users who upgrade to 9.3(2) need to run the set-up script if they want to enable the MPLS static or the VRRpv3 feature.

- The following Cisco Nexus 9000 features are not supported on the Cisco Nexus 3100 Series switches in N3K or N9K mode:

  - FEX
  - Multicast PIM Bidir
  - Port VLAN (PV) switching and routing support for VXLAN
  - Auto-Config
  - Secure login enhancements:
    - Ability to block login attempts and enforce a quiet period
    - Ability to restrict the maximum login sessions per user
    - Ability to restrict the password length
    - Ability to prompt the user to enter a password after entering the username
    - Ability to hide the shared secret used for RADIUS or TACACS+ authentication or accounting
    - SHA256 hashing support for encrypted passwords
  - SHA256 algorithm to verify operating system integrity
  - Non-hierarchical routing mode
  - NX-API REST

- Link Level Flow Control (LLFC) is not supported on Cisco Nexus 3000 series and Cisco Nexus 3100 series switches.

- You can disable IGMP snooping either globally or for a specific VLAN.

- You cannot disable IGMP snooping on a PIM enabled SVIs. The warning message displayed is: IGMP snooping cannot be disabled on a PIM enabled SVIs. There are one or more VLANs with PIM enabled.

- The Cisco Nexus 3000 Series switches (non-XL platforms, having 4 GB RAM) cannot tftpboot non-compacted 9.3(2) software image from the loader prompt. Hence, you must keep one working image in

the bootflash. Tftp of non-compacted can be supported only on the Cisco Nexus Series switches having 8 GB or more RAM (XL platform).

- Enhanced ISSU to Cisco NX-OS Release 9.3(5) is not supported.
- The following switches do not support an ISSU (nondisruptive upgrade) to Cisco NX-OS Release 9.3(5):
  - 3016Q
  - 3048TP
  - 3064PQ, 3064PQ-E, 3064PQ-X, and 3064TQ
  - 3132Q, 3132Q-X, 3172PQ, and 3172TQ
- Before performing an ISSU to Cisco NX-OS Release 9.3(5), you must configure the BGP graceful restart timer to 180 seconds for Cisco Nexus 3132Q-XL, 3132Q-V, 3172PQ-XL, 3172TQ-XL, N3K-C3232C, and N3K-C3264Q-S platform switches.
- If you downgrade the Cisco Nexus device from Cisco NX-OS Release 9.3(5) to the previous NX-OS releases by setting the boot variables and reloading the switch, all earlier configurations of the segment-routing mpls will be lost.

Upgrading Cisco Nexus 3200 and 3400-S Series Switches

To perform a software upgrade, follow the instructions in the Cisco Nexus 3400-S Series NX-OS Software Upgrade and Downgrade Guide, Release 9.3(x).

Upgrade Path to Cisco NX-OS Release 9.3(5)

For the list of platforms and releases that support a non-disruptive In-Service Software Upgrade (ISSU) to Cisco NX-OS Release 9.3(5), see the Cisco NX-OS ISSU Support Matrix.

The following disruptive upgrade paths are supported:

- For Cisco Nexus 3232C and 3264Q switches:

  Release 7.0(3)I3(1) or later -> Release 9.3(5)

- For Cisco Nexus 3264C-E switches:

  Release 9.2(1) or 9.2(2) -> Release 9.3(5)

- For Cisco Nexus 3408-S and 3432D-S switches:

  Release 9.2(2t) to 9.2(2v) -> Release 9.3(5)

  Release 9.2(2v) -> Release 9.3(5)

Upgrading Cisco Nexus 3500 Series Switches

To perform a software upgrade, follow the instructions in the Cisco Nexus 3500 Series NX-OS Software Upgrade and Downgrade Guide, Release 9.3(x). This section includes the following topics:

- Upgrade Path to Cisco NX-OS Release 9.3(5)
- Guidelines and Limitations - Upgrade

Upgrade Path to Cisco NX-OS Release 9.3(5)

The following disruptive upgrade paths are supported for the XL platforms:

- Release 7.0(3)I7(2) or later -> Release 7.0(3)I7(8) -> Release 9.3(5)
- Release 9.2(1) -> Release 9.2(4) -> Release 9.3(5)

The following disruptive upgrade paths are supported for the non-XL platforms:

- Release 6.0(2)A8(2) or later -> Release 6.0(2)A8(7b) or later -> Release 7.0(3)I7(8) or later -> 9.3(5)
- Release 6.0(2)A8(2) or later -> Release 6.0(2)A8(7b) or later -> Release 9.2(4) or later -> 9.3(5)
- Release 6.0(2)A7(2a) or earlier -> Release 6.0(2)A8(9) -> Release 7.0(3)I7(8) or later -> Release 9.3(5)
- Release 6.0(2)A7(2a) or earlier - > Release 6.0(2)A8(7b) or later -> Release 9.2(4) or later -> 9.3(5)

Upgrade Guidelines and Limitations

The following guidelines and limitations are applicable when you upgrade from Cisco NX-OS Release 7.0(3)I7(2) or later to Cisco NX-OS Release 9.3(5):

- If a custom CoPP policy is applied after upgrading to Cisco NX-OS Release 7.0(3)I7(2) 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.
- copy r s and reload is not a supported method for an upgrade.
- You must run the setup script after you upgrade to Cisco NX-OS Release 9.3(5).
- Cisco Nexus 3548 and 3548-X platform switches must run a “compact” NX-OS software image due to limited bootflash space. This “compact” image can be created using the NX-OS Compact Image procedure; alternatively, a compact NX-OS software image can be downloaded directly from Cisco's Software Download website. This requirement does not apply to the Cisco Nexus 3548-XL switch.
- The MD5/SHA512 checksum published on Cisco's Software Download website for a compact NX-OS software image may not match the MD5/SHA512 checksum of a compact image created through the NX-OS Compact Image procedure.
- *install all* is the only upgrade method supported because of a BIOS upgrade requirement.
- The following limitations are applicable when you upgrade from Cisco NX-OS Release 6.0(2)A8(7b), 6.0(2)A8(8), or 6.0(2)A8(9) to Cisco NX-OS Release 9.3(5):
  - If Cisco Catalyst devices are connected via a vPC to a pair of Nexus 3500 switches with the vPC peer switch feature enabled, a partial or complete network outage may be caused as a result of the Cisco Catalyst devices error-disabling their port-channel interfaces due to EtherChannel Guard. To prevent this from happening, we recommend that you temporarily disable the EtherChannel Guard feature on vPC-connected Cisco Catalyst devices while the Nexus 3500 devices are being upgraded. For more information, see CSCvt02249.

Upgrading Cisco Nexus 3600 Series Switches

To perform a software upgrade, follow the instructions in the Cisco Nexus 3600 Series NX-OS Software Upgrade and Downgrade Guide, Release 9.3(x).

Upgrade Path to Cisco NX-OS Release 9.3(5)

The following disruptive upgrade paths are supported:

- Release 9.2(1) or 9.2(2)-> Release 9.3(5)
- Release 7.0(3)F3(4) -> Release 9.3(5)*
- Release 7.0(3)F3(3c) -> Release 9.3(5)*
- Release 7.0(3)F3(3) -> Release 7.0(3)F3(4) -> Release 9.3(5)*

  * These upgrade paths require write erase and reload.

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

Exceptions

The Tx SPAN feature is not supported on Cisco Nexus 3132C-Z switches.

The following features are not supported for the Cisco Nexus 3232C and 3264Q switches:

- 3264Q and 3232C platforms do not support the PXE boot of the NX-OS image from the loader.
- Automatic negotiation support for 25-Gb and 50-Gb ports on the Cisco Nexus 3232C switch.
- Cisco Nexus 2000 Series Fabric Extenders (FEX)
- Cisco NX-OS to ACI conversion (The Cisco Nexus 3232C and 3264Q switches operate only in Cisco NX-OS mode.)
- DCBXP
- Designated router delay
- DHCP subnet broadcast is not supported
- Due to a Poodle vulnerability, SSLv3 is no longer supported
- Enhanced ISSU. NOTE: Check the appropriate guide to determine which platforms support Enhanced ISSU.

- FCoE NPV
- Intelligent Traffic Director (ITD)
- MLD
- NetFlow
- PIM6
- Policy-based routing (PBR)
- Resilient hashing
- SPAN on CPU as destination
- Virtual port channel (vPC) peering between Cisco Nexus 3232C or 3264Q switches and Cisco Nexus 9300 platform switches or between Cisco Nexus 3232C or 3264Q switches and Cisco Nexus 3100 Series switches
- VXLAN IGMP snooping

Supported Optics

To determine which transceivers and cables are supported by Cisco Nexus 3000 Series switches, see the Transceiver Module (TMG) Compatibility Matrix.

To see the transceiver specifications and installation information, see https://www.cisco.com/c/en/us/support/interfaces-modules/transceiver-modules/products-installation-guides-list.html.

Related Content

Cisco Nexus 3000 Series documentation: Cisco Nexus 3000 Series switch documentation

Cisco Nexus 3000 and 9000 Series NX-API REST SDK User Guide and API Reference: Cisco Nexus 3000 and 9000 Series NX-API REST SDK User Guide and API Reference

Cisco Nexus OpenConfig YANG Reference, Release 9.3(x): Cisco Nexus OpenConfig YANG, Release 9.3(x)

Licensing information:

Cisco NX-OS Licensing Guide

Cisco Nexus 9000 and 3000 Series NX-OS Switch License Navigator

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