



# Cisco Nexus 3000 Series NX-OS Release Notes, Release 9.2(2)

This document describes the features, caveats, and limitations of Cisco NX-OS Release 9.2(2) software for use on Cisco Nexus 3000 Series and Cisco Nexus 3100 Series switches. Use this document in combination with documents listed in the [Related Documentation](#) section.

[Table 1](#) shows the online change history for this document.

Table 1 Online History Change

Date	Description
December 18, 2018	Added <a href="#">Licensing Information</a> .
November 29, 2018	Added a limitation for the Cisco Nexus 34180YC platform switches.
November 21, 2018	Added the Guidelines and Limitations for Cisco NX-OS Release 9.2(2) section.
November 8, 2018	Updated the Introduction.
November 5, 2018	Created the release for Release 9.2(2).

Introduction

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## Introduction

Cisco NX-OS software is a data center-class operating system designed for performance, resiliency, scalability, manageability, and programmability at its foundation. The Cisco NX-OS software provides a robust and comprehensive feature set that meets the requirements of virtualization and automation in mission-critical data center environments. The modular design of the Cisco NX-OS operating system makes zero-impact operations a reality and enables exceptional operational flexibility.

The Cisco Nexus 3000 Series switches, which includes Cisco Nexus 3100, 3200, 3400, 3500, and 3600 platform switches, and Cisco Nexus 9300 and 9500 platform switches run on the same binary image, also called the **“unified” image**.

Cisco NX-OS Release 9.2(1) is the first release that adopts unified version numbering. As more platforms have been added, there is no need **to have a “platform” designator as used in the past**.

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

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.

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 9.2(1)I9(1). **The “I9(1)” portion of the string can be safely ignored. It will later appear as 9.2(1).**

This section includes the following:

- [Cisco Nexus 3000 Series Switches](#)
- [Cisco Nexus 3100 Series Switches](#)

## Cisco Nexus 3000 Series Switches

The Cisco Nexus 3000 Series switches are high-performance, high-density, ultra-low-latency Ethernet switches that provide line-rate Layer 2 and Layer 3 switching. The Cisco Nexus 3000 Series includes the following switches:

- The Cisco Nexus 3064 switch is a 1 RU switch that supports 48 1- or 10-Gigabit downlink ports, four Quad Small Form-Factor Pluggable (QSFP+) ports that can be used as a 40 Gigabit Ethernet port or 4 x10-Gigabit Ethernet ports, one 10/100/1000 management port, and one console port.
- The Cisco Nexus 3048 switch is a 1 rack unit (RU) switch that supports 48 10/100/1000 Ethernet server-facing (downlink) ports, four 10-Gigabit network-facing (uplink) ports, one 100/1000 management port, and one console port.
- The Cisco Nexus 3016 is a 1 RU, 16-port QSFP+ switch. Each QSFP+ port can be used as a 40-Gigabit Ethernet port or 4 x10-Gigabit Ethernet ports.

## Licensing Requirements

Each switch includes one or two power supply units and one fan tray module, and each switch can be ordered with either forward (port-side exhaust) airflow or reverse (port-side intake) airflow for cooling. All platforms support both AC and DC power supplies. All combinations of power (AC/DC) and airflow (forward/reverse) are available. The Cisco Nexus 3000 Series switches run the Cisco NX-OS software.

For information about the Cisco Nexus 3000 Series, see the [Cisco Nexus 3000 Series Hardware Installation Guide](#).

## Cisco Nexus 3100 Series Switches

The Cisco Nexus 3100 Series switches are high-performance, high-density, ultra-low-latency Ethernet switches that provide line-rate Layer 2 and Layer 3 switching. In Cisco NX-OS Release 9.2(2), the Cisco Nexus 3100 Series includes the Cisco Nexus 3132, Nexus 3172, Nexus 3132Q-V, Nexus N31108PC-V, Nexus N31108TC-V, Nexus C3264Q-S, and Nexus C3232C switches.

The Cisco Nexus 3172PQ switch is a 10-Gbps Enhanced Small Form-Factor Pluggable (SFP+)-based ToR switch with 48 SFP+ ports and 6 Enhanced Quad SFP+ (QSFP+) ports.

The Cisco Nexus 3172TQ switch is a 10GBASE-T switch with 48 10GBASE-T ports and 6 Quad SFP+ (QSFP+) ports.

Each SFP+ port can operate in 100-Mbps, 1-Gbps, or 10-Gbps mode, and each QSFP+ port can operate in native 40-Gbps or 4 x 10-Gbps mode. This switch is a true physical-layer-free (phy-less) switch that is optimized for low latency and low power consumption.

The Cisco Nexus 3132Q switch is a 1RU, 40-Gbps QSFP-based switch that supports 32 fixed 40-Gbps QSFP+ ports. It also has 4 SFP+ ports that can be internally multiplexed with the first QSFP port. Each QSFP+ port can operate in the default 40-Gbps mode or 4 x 10-Gbps mode, up to a maximum of 104 10-Gbps ports.

Each switch includes dual redundant power supply units, four redundant fans, one 10/100/1000 management port, and one console port. Each switch can be ordered with either forward (port-side exhaust) airflow or reverse (port-side intake) airflow for cooling. It supports both AC and DC power supplies. All combinations of power (AC/DC) and airflow (forward/reverse) are available. The Cisco Nexus 3100 Series switches run the Cisco NX-OS software.

For information about the Cisco Nexus 3100 Series, see the [Cisco Nexus 3000 Series Hardware Installation Guide](#).

## Licensing Requirements

Temporary licenses with an expiry date are available for evaluation and lab use purposes. They are strictly not allowed to be used in production. Please use a permanent or subscription license that has been purchased through Cisco for production purposes.

For more information, see the [Cisco NX-OS Licensing Guide](#).

## System Requirements

This section includes the following topics:

- Memory Requirements

## System Requirements

- Hardware Supported
- Twinax Cable Support on Cisco Nexus 3000 Switches
- Cisco QSFP 40-Gbps Bidirectional Short-Reach Transceiver

## Memory Requirements

The Cisco NX-OS Release 9.2(2) software requires 1 GB of flash memory.

## Hardware Supported

Table 2 lists the Cisco Nexus 3000 Series hardware that Cisco NX-OS Release 9.2(2) supports. For additional information about the supported hardware, see the [Cisco Nexus 3000 Series Hardware Installation Guide](#).

Table 2 Cisco Nexus 3000 Switch Hardware

Hardware	Part Number
Cisco Nexus 34180YC switch	N3K-C34180YC
Cisco Nexus 3132Q-X switch	N3K-C3132Q-40GX
Cisco Nexus 3132C-Z switch	N3K-C3132C-Z
Cisco Nexus C3172TQ-XL switch	N3K-C3172TQ-XL
Cisco Nexus C3172PQ-XL switch	N3K-C3172PQ-XL
Cisco Nexus C3132Q-XL switch	N3K-C3132Q-XL
Cisco Nexus 3172TQ switch	N3K-C3172TQ-10GT
Cisco Nexus 3172PQ switch	N3K-C3172PQ-10GE
Cisco Nexus 3132Q-V switch	N3k-C3132Q-V
Cisco Nexus 3132Q switch	N3K-C3132Q-40GE
Cisco Nexus 31108TC-V	N3K-C31108TC-V
Cisco Nexus 31108PC-V switch	N3K-C31108PC-V
Cisco Nexus 3064-X switch	N3K-C3064PQ-10GX
Cisco Nexus 3064-X reversed airflow (port-side intake) AC power supply	N3K-C3064-X-BA-L3

## System Requirements

Hardware	Part Number
Cisco Nexus 3064-X forward airflow (port-side intake) DC power supply	N3K-C3064-X-BD-L3
Cisco Nexus 3064-X forward airflow (port-side exhaust) DC power supply	N3K-C3064-X-FD-L3
Cisco Nexus 3064-X forward airflow (port-side exhaust) AC power supply	N3K-C3064-X-FA-L3
Cisco Nexus 3064-TQ switch	N3K-C3064TQ-10GT
Cisco Nexus 3064-T 500W reverse airflow (port-side intake) AC power supply	NXA-PAC-500W-B
Cisco Nexus 3064-T 500W forward airflow (port-side exhaust) AC power supply	NXA-PAC-500W
Cisco Nexus 3064-E switch	N3K-C3064PQ-10GE
Cisco Nexus 3064 switch	N3K-C3064PQ
Cisco Nexus 3064 fan module with reverse airflow (port-side intake); also used in the Cisco Nexus 3016	N3K-C3064-FAN-B
Cisco Nexus 3064 fan module with forward airflow (port-side exhaust); also used in the Cisco Nexus 3016	N3K-C3064-FAN
Cisco Nexus 3048 switch	N3K-C3048TP-1GE
Cisco Nexus 3048 fan module with reverse airflow (port-side intake)	N3K-C3048-FAN-B
Cisco Nexus 3048 fan module with forward airflow (port-side exhaust)	N3K-C3048-FAN
Cisco Nexus 3016 switch	N3K-C3016Q-40GE
Cisco Nexus 3000 power supply with reverse airflow (port-side intake)	N2200-PAC-400W-B
Cisco Nexus 3000 power supply with forward airflow (port-side exhaust)	N2200-PAC-400W
Cisco Nexus 2000 power supply with forward airflow (port-side exhaust)	N2200-PDC-400W

## System Requirements

Hardware	Part Number
Cisco Nexus 2000 DC power supply with reverse airflow (port-side intake)	N3K-PDC-350W-B
Cisco Nexus 2000 or Nexus 3000 individual fan, forward airflow (port side exhaust)	NXA-FAN-30CFM-F
Cisco Nexus 2000 or Nexus 3000 individual fan, reversed airflow (port side intake)	NXA-FAN-30CFM-B
Cisco Nexus 2000 or Nexus 3000 400W AC power supply, forward airflow (port side exhaust)	N2200-PAC-400W
Cisco Nexus 2000 or Nexus 3000 400W AC power supply, reversed airflow (port side intake)	N2200-PAC-400W-B
Cisco Nexus 2000 or Nexus 3000 400W DC power supply, forward airflow (port side exhaust)	N2200-PDC-400W
Cisco Nexus 2000 or Nexus 3000 350W DC power supply, reversed airflow (port side intake)	N3K-PDC-350W-B
Transceivers	
10-Gigabit	
10GBASE-ZR SFP+ module (single-mode fiber [SMF])	SFP-10G-ZR
10GBASE-CU SFP+ cable 1.5 m (Twinax cable)	SFP-H10GB-CU1-5M
10GBASE-CU SFP+ cable 2 m (Twinax cable)	SFP-H10GB-CU2M
10GBASE-CU SFP+ cable 2.5 m (Twinax cable)	SFP-H10GB-CU2-5M
Active optical cable 1 m	SFP-10G-AOC1M
Active optical cable 3 m	SFP-10G-AOC3M
Active optical cable 5 m	SFP-10G-AOC5M
Active optical cable 7 m	SFP-10G-AOC7M
10GBASE-DWDM long-range transceiver module 80 km with single mode duplex fiber	DWDM-SFP10G-C

## System Requirements

Hardware	Part Number
10GBASE-DWDM long-range transceiver module 80 km with single mode duplex fiber	DWDM-SFP10G
10GBASE-SR SFP+ module (multimode fiber [MMF])	SFP-10G-SR
10GBASE-LR SFP+ module (single-mode fiber [SMF])	SFP-10G-LR
Cisco 10GBASE-ER SFP+ Module for SMF	SFP-10G-ER
10GBASE-CU SFP+ cable 1 m (Twinax cable)	SFP-H10GB-CU1M
10GBASE-CU SFP+ cable 3 m (Twinax cable)	SFP-H10GB-CU3M
10GBASE-CU SFP+ cable 5 m (Twinax cable)	SFP-H10GB-CU5M
Active Twinax cable assembly, 7 m	SFP-H10GB-ACU7M
Active Twinax cable assembly, 10 m	SFP-H10GB-ACU10M
1-Gigabit Ethernet	
1000BASE-T SFP	GLC-TE
Gigabit Ethernet SFP, LC connector EX transceiver (MMF)	GLC-EX-SMD
Gigabit Ethernet SFP, LC connector ZX transceiver (MMF)	GLC-ZX-SMD
1000BASE-T SFP	GLC-T
Gigabit Ethernet SFP, LC connector SX transceiver (MMF)	GLC-SX-MM
Gigabit Ethernet SFP, LC connector SX transceiver (MMF)	GLC-SX-MMD
Gigabit Ethernet SFP, LC connector LX/LH transceiver (SMF)	GLC-LH-SM
Gigabit Ethernet SFP, LC connector LX/LH transceiver (SMF)	GLC-LH-SMD
100-Megabit Ethernet	

Hardware	Part Number
1000BASE-T SFP transceiver module with extended operating temperature range	SFP-GE-T
100BASE-FX SFP module for Gigabit Ethernet ports GLC-GE-100FX	GLC-GE-100FX

## Twinax Cable Support on Cisco Nexus 3000 Switches

Starting with Cisco Release NX-OS 5.0(3)U1(1), the following algorithm is used to detect copper SFP+ twinax, QSFP+ twinax, and QSFP+ splitter cables on Cisco Nexus 3000 Series switches.

If the attached interconnect (transceiver) is a copper SFP+ twinax or QSFP+ twinax cable:

- Verify the transceiver SPROM to match the Cisco magic code.
- If the check succeeds, bring up the interface. Otherwise, print the following warning message appears stating that a non-Cisco transceiver is attached and that you should try to bring up the port.

```
2009 Oct 9 01:46:42 switch %ETHPORT-3-IF_NON-CISCO_TRANSCEIVER: Non-Cisco transceiver on interface Ethernet1/18 is detected.
```

If the attached transceiver is a QSFP+ splitter cable, then no special check is performed. The Cisco NX-OS software tries to bring up the port.

The following disclaimer applies to non-Cisco manufactured and non-Cisco certified QSFP copper splitter cables:

If a customer has a valid support contract for Cisco Nexus switches, Cisco TAC will support twinax cables that are a part of the compatibility matrix for the respective switches. However, if the twinax cables are not purchased through Cisco, a customer cannot return these cables through an RMA to Cisco for replacement.

If a twinax cable that is not part of the compatibility matrix is connected into a system, Cisco TAC will still debug the problem, provided the customer has a valid support contract on the switches. However TAC may ask the customer to replace the cables with Cisco qualified cables if there is a situation that points to the cables possibly being faulty or direct the customer to the cable provider for support. Cisco TAC cannot issue an RMA against uncertified cables for replacement.

## Cisco QSFP 40-Gbps Bidirectional Short-Reach Transceiver

The Cisco QSFP 40-Gbps Bidirectional (BiDi) transceiver is a short-reach pluggable optical transceiver with a duplex LC connector for 40-GbE short-reach data communications and interconnect applications by using multimode fiber (MMF). The Cisco QSFP 40-Gbps BiDi transceiver offers a solution that uses existing duplex MMF infrastructure for 40-GbE connectivity. With the Cisco QSFP 40-Gbps BiDi transceiver, customers can upgrade their network from 10-GbE to 40-GbE without incurring any fiber infrastructure upgrade cost. The Cisco QSFP 40-Gbps BiDi transceiver can enable 40-GbE connectivity in a range of up to 100 meters over OM3 fiber, which meets most data center reach requirements. It complies with the Multiple Source Agreement (MSA) QSFP specification and enables customers to use it on all Cisco QSFP 40-Gbps platforms and achieve high density in a 40-GbE network. It can be used in data centers, high-performance computing (HPC) networks, enterprise and distribution layers, and service provider transport applications.

## New and Changed Information

This section lists the new and changed information in Release 9.2(2):

- New Supported Hardware
- New Software Features

### New Supported Hardware

Cisco NX-OS Release 9.2(2) supports the following new hardware:

- Cisco Nexus 3132C-Z (N3K-C3132C-Z) is a 1-RU Top-of-Rack switch with 32 fixed 100-Gigabit QSFP28 ports and 2 SFP+ ports.
- Cisco Nexus 34180YC (N3K-C34180YC) is a 1-RU Top-of-Rack switch with 48 10- or 25-Gigabit SFP28 ports and 6 40- or 100-Gigabit QSFP28 ports.

### New Software Features

Cisco NX-OS Release 9.2(2) supports the following new software features:

#### NX-API Features

- NX-API REST Data Paths—See the New and Changed Information section of the [\*Cisco Nexus 3000 and 9000 Series NX-API REST User Guide and API Reference\*](#) for a detailed list of the updates.

For more information, see [Cisco Nexus 3000 and 9000 Series NX-API REST SDK User Guide and API Reference, Release 9.x](#)

#### Label Switching Features

- Labeled and Unlabeled Unicast Paths—Added support for IPv4 and IPv6 unlabeled unicast route on a single BGP session. This behavior is the same irrespective of whether one or both SAFI-1 and SAFI-4 are enabled on the same session or not. This is supported on all Cisco Nexus 3000 Series switches.

For more information, see [Cisco Nexus 3000 Series NX-OS Security Configuration Guide, Release 9.2\(x\)](#)

## Caveats

### Programmability Features

- Extended support on Cisco Nexus 3132C-Z and Cisco Nexus 3264C-E switches for the following features:
  - Packetized MMU Stats (PSTATS)
  - Packet timestamping
  - Transient Capture Buffer (TCB)
- Inband Network Telemetry (INT)—Support added for Cisco Nexus 3000 Series switches.
- NX-API Developer Sandbox—Various enhancements have been added to the NX-API Developer Sandbox.

For more information, see the [Cisco Nexus 3000 Series NX-OS Programmability Guide, Release 9.2\(x\)](#)

### Security Features

- 802.1X— Added 802.1X support for VXLAN EVPN on the Cisco Nexus 9000 Series switches.

For more information, see [Cisco Nexus 3000 Series NX-OS Security Configuration Guide, Release 9.2\(x\)](#)

### Unicast Routing Features

- BGP best-path algorithm— Added the option to ignore the Interior Gateway Protocol (IGP) metric for next hop during best-path selection.

For more information, see [Cisco Nexus 3000 Series NX-OS Unicast Routing Configuration Guide, Release 9.2\(x\)](#) .

## Caveats

The open and resolved caveats and the known behaviors 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](#).

Note: All caveats listed in this document are those that were reported against the Cisco Nexus 3000 Series platform.

Cisco Nexus 9000 Series, Cisco Nexus 9500-R/Cisco Nexus-36000-R Series, Cisco Nexus 3000 Series, and Cisco Nexus 3500 Series are platforms that run on the unified software and binary. Since some caveats listed against these platforms could be applicable to the Cisco Nexus 3000 series platform too, we recommend that you review the list of caveats in the Release Notes of the other platforms for this release, to see if those are applicable to your network configuration.

This section includes the following topics:

- [Resolved Caveats-Cisco NX-OS Release 9.2\(2\)](#)
- [Open Caveats-Cisco NX-OS Release 9.2\(2\)](#)

## Caveats

- [Known Behaviors-Cisco NX-OS Release 9.2\(2\)](#)

## Resolved Caveats-Cisco NX-OS Release 9.2(2)

Table 3 lists the resolved caveats in Cisco NX-OS Release 9.2(2). Click the Bug ID to access the [Cisco Bug Search Tool](#) for additional information about the bug.

Table 3 Cisco NX-OS Release 9.2(2) – Resolved Caveats

Bug ID	Description
<a href="#">CSCvd69433</a>	The PIM neighborship remains up even after breaking the neighborship on peer.
<a href="#">CSCvh73278</a>	N3K-C3016Q-40GE Flap link because of rxlos algo for optical cable on 40 gig.
<a href="#">CSCvi28475</a>	The debounce timer value increases for N3K-3232c.
<a href="#">CSCvj29225</a>	Fast-reload upgrade failure with normal reload.
<a href="#">CSCvk12863</a>	Cisco Nexus 3000 Mellanox QSA adapters does not work after a code upgrade.
<a href="#">CSCvk30831</a>	NXOS install all upgrade may fail during the BIOS upgrade section.
<a href="#">CSCvk45378</a>	Traffic drop: Static IGMP Multicast S,G entries are not reprogrammed when the ingress policer is applied.
<a href="#">CSCvk65161</a>	N3K-C31108TC-V: Ingress ACL fails to block ICMP.
<a href="#">CSCul59271</a>	SNMP polling for IldpRemManAddrOID fails on certain interfaces.
<a href="#">CSCvm00253</a>	Cisco Nexus 31108x switches report fan speed 100% at normal temperature.
<a href="#">CSCvm01583</a>	<b>SNMP reports incorrect values for 'Total current drawn' and 'Total current available'.</b>
<a href="#">CSCvm16653</a>	When configuring "shutdown force" on mgmt 0 and reloading the switch, LED for mgmt 0 is turned on green and connected device says connected.
<a href="#">CSCvm26697</a>	The ACL doesn't work as design; the established option does not work.
<a href="#">CSCvm39324</a>	After a reload, the "established" keyword is missing in NPACL.

## Open Caveats-Cisco NX-OS Release 9.2(2)

Table 4 lists the open caveats in the Cisco NX-OS Release 9.2(1). Click the Bug ID to search the [Cisco Bug Search Tool](#) for additional information about the bug.

Table 4 Cisco NX-OS Release 9.2(2) –Open Bugs

Bug ID	Description
<a href="#">CSCvn28015</a>	Installation of N3K-LAN2K9 license on Cisco Nexus 3264C-E and Cisco Nexus 3464C switches fails, but the LAN features work.

Bug ID	Description
<a href="#">CSCvn28036</a>	Installation of N3K-STR1K9 on Cisco Nexus 34180YC and Cisco Nexus 3132C-Z fails, but telemetry features work.

## Known Behaviors-Cisco NX-OS Release 9.2(2)

Table 5 lists the known behaviors in Cisco NX-OS Release 9.2(2). Click the bug ID to search the [Cisco Bug Search Tool](#) for details about the bug.

Table 5 Cisco NX-OS Release 9.2(2) –Known Behaviors

Bug ID	Description
<a href="#">CSCvg03567</a>	With switchport mac-learn disable cli, mac's are still learnt on VNI enabled VLAN.
<a href="#">CSCvg66442</a>	In Cisco NX-OS Release 9.2(1), the auto ECMP feature fails to fill all 256 ecmp entries in "show hardware profile status" and always shows 255 as one short though partial routes are present.
<a href="#">CSCvg68550</a>	The MPLS SR outputs stats incremented for all FECs with same next-hop during POP(swap with 3).
<a href="#">CSCvi54469</a>	Non default ethertype settings do not work.

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

- 1405964207\_0x101\_ifmtc\_log.3679.tar.gzaa
- 1405964207\_0x101\_ifmtc\_log.3679.tar.gzab
- 1405964207\_0x101\_ifmtc\_log.3679.tar.gzac

To decode the multiple core files, first club the files to a single file:

```
$ cat 1405964207_0x101_ifmtc_log.3679.tar.gz* > 1405964207_0x101_ifmtc_log.3679.tar.gz
```

## Upgrading Cisco Nexus 3000 Series Switch

The upgrade process is triggered when you enter the install all command. This section describes the sequence of events that occur when you upgrade a single Cisco Nexus 3000 Series switch.

To perform a software upgrade, follow the instructions in the [Cisco Nexus 3000 Series NX-OS Software Upgrade and Downgrade Guide, Release 9.2\(x\)](#).

This section includes the following topics:

- [Overview - Upgrade Process](#)
- [Upgrade Matrix](#)
- [Guidelines and Limitations - Upgrade](#)

## Overview – Upgrade Process

This table provides an overview of the upgrade process. To perform a software upgrade, follow the instructions in the [Cisco Nexus 3000 Series NX-OS Software Upgrade and Downgrade Guide, Release 9.2\(x\)](#).

Process	Tasks
Upgrade Preparation	<ol style="list-style-type: none"> <li>1. Log in to the first Cisco Nexus 3000 Series switch. We recommend that you log in to the console port. In vPC topologies, the first upgrade can be performed on either the primary or secondary switch in the topology.</li> <li>2. Log in to Cisco.com to access the Software Download Center. To log in to Cisco.com, go to <a href="http://www.cisco.com/">http://www.cisco.com/</a> and click Log In at the top of the page. Enter your Cisco username and password.</li> <li>3. Choose and download the software image to the server.</li> <li>4. Verify that the required space is available in the bootflash: directory for the image file(s) to be copied.</li> <li>5. If you need more space in the bootflash: directory, delete unnecessary files to make space available.</li> <li>6. Copy the Cisco NX-OS software image to the bootflash using a transfer protocol such as ftp:, http:, https:, tftp:, scp:, or sftp.</li> <li>7. Compare the file sizes of the images that were transferred using the dir bootflash command. The file sizes of the images obtained from Cisco.com and the image sizes of the transferred files should be the same.</li> <li>8. Complete the above Step 1 through Step 7 for each Cisco Nexus 3000 Series switch in the topology.</li> </ol>
Pre-upgrade Checks	<ol style="list-style-type: none"> <li>1. Enter the show incompatibility command to verify that the target image is feature-wise compatible with the current image.</li> <li>2. Enter the show install all impact command to identify the upgrade impact.</li> </ol> <p>A BIOS incompatibility issue has been discovered on specific Cisco Nexus 3000 and 3100 Series switches. When you upgrade these switches from Cisco NX-OS Release 6.0(2)U6(8) or an earlier release to Cisco NX-OS Release 7.0(x), an MD5 mismatch error might occur and leave the switch at the loader prompt. We recommend that you view the field notice for this release to see if your software or hardware platforms are affected.</p> <p>You can find the field notice at the following URL:  <a href="http://www.cisco.com/c/en/us/support/docs/field-notices/642/fn64233.html">http://www.cisco.com/c/en/us/support/docs/field-notices/642/fn64233.html</a></p>

Upgrade Process	<ol style="list-style-type: none"> <li>1. Enter the install all command to update to the latest Cisco NX-OS software.</li> <li>2. Peruse the installer impact analysis and accept to proceed.</li> <li>3. Installer on Nexus 3000 upgrades the software – the switch will now run new version of the software.</li> </ol>
Upgrade Verification	<ol style="list-style-type: none"> <li>1. Enter the show install all status command to verify the status of the installation.</li> </ol>

## Upgrade Matrix

You can perform an In-Service Software Upgrade (ISSU) to Cisco NX-OS Release 9.2(2) only from Cisco NX-OS Release 7.0(3)I7(4).

The following upgrade path is supported and recommended:

- For Cisco Nexus 3048 Switches:

Cisco NX-OS Release 6.0(2)U5(1) > Cisco NX-OS Release 6.0(2)U6(2a) > Cisco NX-OS Release 6.0(2)U6(10) > Cisco NX-OS Release 7.0(3)I7(4) > Cisco NX-OS Release 9.2(2)

- For All Cisco Nexus 3000 Series switches (except Cisco Nexus 3048 Switches):

Cisco NX-OS Release 6.0(2)U5(1) > Cisco NX-OS Release 6.0(2)U6(10) > Cisco NX-OS Release 7.0(3)I7(4) > Cisco NX-OS Release 9.2(2)

Note:

1. Starting with Cisco NX-OS Release 9.2(2) Release, the fast reboot feature is not supported on Cisco Nexus 3000 and 3132 switches. It will be supported only for an upgrade to the next maintenance releases (7.0(3)I7(x)) from the previous releases.
2. ISSU upgrade supports only from Cisco NX-OS Release 7.0(3)I7(4).
3. Enhanced ISSU to Cisco NX-OS Release 9.2(2) is not supported.

## Upgrading Cisco Nexus 3000 Series Switch

The following table shows the upgrade paths for Cisco NX-OS Release 9.2(2) from Cisco NX-OS Release 6.0(2)U5(1) and later.

From	To	Limitations	Recommended Procedure
7.0(3)I2(1) or later	9.2(2)	None	install all is the recommended upgrade method supported.
6.0(2)U6(3a) and later	9.2(2)	None	<p>install all is the only upgrade method supported because of a BIOS upgrade requirement.</p> <p><b>Warning:</b> Ensure that you store the pre-release, configuration file of the pre-release (6.0(2)U6(3a)).</p> <p>For more information, see the <a href="#">Cisco Nexus 3000 Series NX-OS Software Upgrade and Downgrade Guide, Release 9.2(x)</a>.</p>
6.0(2)U6(2a) or earlier	9.2(2)	<p>First, upgrade to Cisco NX-OS Release 6.0(2)U6(3a) or a later release.</p> <p><i>A Cisco Nexus 3048 switch requires an additional step when you upgrade from a software version older than Cisco NX-OS 6.0(2)U6(2a), otherwise the switch can fail to boot. You must first upgrade the switch to Cisco NX-OS Release 6.0(2)U6(2a), then to Cisco NX-OS Release 6.0(2)U6(3a), and finally to Cisco NX-OS Release 9.2(2).</i></p>	<p>install all is the only upgrade method supported because of a BIOS upgrade requirement.</p> <p>For more information, see the <a href="#">Cisco Nexus 3000 Series NX-OS Software Upgrade and Downgrade Guide, Release 9.2(x)</a>.</p>

## Guidelines and Limitations - Upgrade

This section describes the guidelines and limitations that you need to follow while upgrading to Cisco NX-OS Release 9.2(2):

- 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 9.2(2) BIOS, the 9.2(2) image will not load.
- The no-save option is now required to downgrade from Release 7.x to Release 6.x. The bios-force is a hidden option that is only available on Cisco Nexus 3000 Series switches that are running 7.x releases.
- Cisco Nexus 3000 Series switches that use software versions older than Cisco NX-OS Release 5.0(3)U5(1) need to be updated to Cisco NX-OS Release 5.0(3)U5(1) before they are upgraded to Cisco NX-OS Release 6.0(2).
- Cisco NX-OS Release 5.0(3)U3(1) does not support a software upgrade from Cisco NX-OS Release 5.0(3)U2(2c). If you want to upgrade through this path, see [CSCty75328](#) for details about how to work around this issue.

**Note:** It is recommended that you upgrade to Cisco NX-OS Release 9.2(2) by using Cisco NX-OS install procedures.

- In Cisco NX-OS Release 6.0(2)U2(2), the default interface name in LLDP MIB is in short form. To make it long form, you must set lldp portid-subtype to 1. In Cisco NX-OS Release 6.0(2)U2(3), this behavior was reversed. The default interface name in LLDP MIB is now in long form. To make it short form, you must set lldp portid-subtype to 0.
- If you have set lldp port-subtype to 1 and you are upgrading to Cisco NX-OS Release 6.0(2)U2(4), ensure that you set lldp port-subtype to 0.
- 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
- Packet loss may occur on Cisco Nexus 31108PC-V, 31108TC-V and 3132Q-V switches when they are in the default cut-through switching-mode and the default oversubscribed port mode. These packet losses are seen in hardware counters on the egress port as TERR and/or TFCS. One of the following workarounds can be implemented to address this issue without NX-OS upgrade. To view more details, see [CSCvf87120](#).
- 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.
- While installing the NXAPI https certificate that is present in the device, the following error message can appear if the user does not have the permission to install this certificate (See [CSCup72219](#)): Certificate file read error. Please re-check permissions.
- After configuring the NXAPI feature, the default http port (port 80) is still in the listening state even after we run the no nxapi http command. This results in the sandbox becoming accessible. Although the sandbox becomes accessible, HTTP requests from the sandbox to the device do not go through. Thus, the functionality is not affected. (See [CSCup77051](#)).
- 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 9.2(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 9.2(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).

## Guidelines and Limitations for Cisco NX-OS Release 9.2(2)

This section describes the guidelines and limitations for the Cisco Nexus 3000 Series in Cisco NX-OS Release 9.2(2).

- The following licenses are not supported on Cisco NX-OS Release 9.2(2):
  - N3K-STR1K9 telemetry license
  - N3K STR2K9 telemetry license
  - N3K-LAN2K9 LAN license
- The telemetry features available on the Cisco Nexus 34180YC and Cisco Nexus 3132C-Z platform switches are functional on the Cisco NX-OS Release 9.2(2) code. This feature does not require the N3K-STR1K9 telemetry licenses in this release.
- The telemetry features available on Cisco Nexus 3264C-E and Cisco Nexus 3464C platform switches are functional on the Cisco NX-OS Release 9.2(2) code. This feature does not require the N3K-STR2K9 telemetry licenses in this release.
- The LAN features are functional on Cisco Nexus 3264C-E and Cisco Nexus 3464C platform switches. However, if you install the N3K-LAN2K9 license on these switches, the installation fails with the following error message:

```
install license bootflash:lan2.lic
```

```
Installing license failed: License server does not support this feature
```

Note: The above licenses will be supported beginning Cisco NX-OS Release 9.2(3) and would be required to enable the specified features. For those who have already purchased these licenses, the license keys will be distributed once these licenses are supported. You can install these licenses only after the license keys are available.

- For Cisco Nexus 34180YC platform switches, the following QoS markings are required for policing to work on the class-map:
  - set dscp/precedence/cosAlternatively, you can set qos-group to redirect traffic to an egress queue, which in turn would make the policing work.

## 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

The entire Cisco Nexus 3000 Series NX-OS documentation set is available at the following URL:

<https://www.cisco.com/c/en/us/support/switches/nexus-3000-series-switches/tsd-products-support-series-home.html>

## Documentation Feedback

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