



Cisco Nexus 3000 Series NX-OS Release Notes, Release 6.0(2)U3(9)

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This document describes the features, bugs, and limitations for Cisco Nexus 3000 Series and Cisco Nexus 3100 Series switches. Use this document in combination with documents listed in the “Obtaining Documentation and Submitting a Service Request” section.

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

Table 1 shows the online change history for this document.

Table 1. Online History Change

Date	Description
September 15, 2015	Created NX-OS Release 6.0(2)U3(9) release notes
November 2, 2015	Added the following note: GLC-SX-MMD is supported on all Cisco Nexus 3000 Series Switches except for the Cisco Nexus 3064-T. Please refer to the comparability matrix for all the supported platforms.

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Introduction

Several new hardware and software features are introduced for the Cisco Nexus 3000 Series and Cisco Nexus 3100 Series devices to improve the performance, scalability, and management of the product line. Cisco NX-OS Release 6.x 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.

Also see 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.

System Requirements

- 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.

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 6.0(2)U2(2), the Cisco Nexus 3100 Series includes the Cisco Nexus 3132 and Nexus 3172 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](#).

System Requirements

This section includes the following topics:

- [Memory 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 6.0(2)U3(9) software requires 135 MB of flash memory.

Hardware Supported

Cisco NX-OS Release 6.0(2)U3(9) supports the Cisco Nexus 3000 Series switches. You can find detailed information about supported hardware in the Cisco Nexus 3000 Series Hardware Installation Guide.

Table 2 shows the hardware supported by the Cisco NX-OS Release 6.x software. Table 3 shows the hardware supported by the Cisco NX-OS 5.x releases.

Table 4 shows the transceivers supported by the Cisco NX-OS Release 6.x software. Table 5 shows transceivers supported by the Cisco NX-OS 5.x releases.

Table 2. Hardware Supported by Cisco NX-OS Related 6.x Software.

Hardware	Part Number	U1 Series	U2 Series	U3 Series
Cisco Nexus 3172TQ switch	N3K-C3172TQ-10GT			X
Cisco Nexus 3172PQ switch	N3K-C3172PQ-10GE		X	X
Cisco Nexus 3132Q switch	N3K-C3132Q-40GE		X	X
Cisco Nexus 3016 switch	N3K-C3016Q-40GE	X	X	X
Cisco Nexus 3048 switch	N3K-C3048TP-1GE	X	X	X
Cisco Nexus 3064-TQ switch	N3K-C3064TQ-10GT	X	X	X
Cisco Nexus 3064-X switch	N3K-C3064PQ-10GX	X	X	X
Cisco Nexus 3064-E switch	N3K-C3064PQ-10GE	X	X	X
Cisco Nexus 3064 switch	N3K-C3064PQ	X	X	X
Cisco Nexus 3048 fan module with forward airflow (port-side exhaust)	N3K-C3048-FAN	X	X	X
Cisco Nexus 3048 fan module with reverse airflow (port-side intake)	N3K-C3048-FAN-B	X	X	X
Cisco Nexus 3064-T 500W forward airflow (port-side exhaust) AC power supply	NXA-PAC-500W	X	X	X
Cisco Nexus 3064-T 500W reverse airflow (port-side intake) AC power supply	NXA-PAC-500W-B	X	X	X
Cisco Nexus 3064-X forward airflow (port-side exhaust) AC power supply	N3K-C3064-X-FA-L3	X	X	X
Cisco Nexus 3064-X reversed airflow (port-side intake) AC power supply	N3K-C3064-X-BA-L3	X	X	X
Cisco Nexus 3064-X forward airflow (port-side exhaust) DC power supply	N3K-C3064-X-FD-L3	X	X	X

System Requirements

Hardware	Part Number	U1 Series	U2 Series	U3 Series
Cisco Nexus 3064-X forward airflow (port-side intake) DC power supply	N3K-C3064-X-BD-L3	X	X	X
Cisco Nexus 3064 fan module with forward airflow (port-side exhaust); also used in the Cisco Nexus 3016	N3K-C3064-FAN	X	X	X
Cisco Nexus 3064 fan module with reverse airflow (port-side intake); also used in the Cisco Nexus 3016	N3K-C3064-FAN-B	X	X	X
Cisco Nexus 3000 power supply with forward airflow (port-side exhaust)	N2200-PAC-400W	X	X	X
Cisco Nexus 3000 power supply with reverse airflow (port-side intake)	N2200-PAC-400W-B	X	X	X
Cisco Nexus 2000 power supply with forward airflow (port-side exhaust)	N2200-PDC-400W	X	X	X
Cisco Nexus 2000 DC power supply with reverse airflow (port-side intake)	N3K-PDC-350W-B	X	X	X

Table 3. Hardware Supported by Cisco NX-OS Release 5.x Software

Hardware	Part Number	Supported Cisco NX-OS Release						
		U5 Series	U4 Series	U3 Series	5.0(3)U2(2d) 5.0(3)U2(2c) 5.0(3)U2(2b) Releases	5.0(3)U2(2a) Release	5.0(3)U2(2) 5.0(3)U2(1) 5.0(3)U1(2a) 5.0(3)U1(2) Releases	5.0(3)U1(1d) Release
Cisco Nexus 3016 switch	N3K-C3016Q-40GE	X	X	X	X	X	—	—
Cisco Nexus 3048 switch	N3K-C3048TP-1GE	X	X	X	X	—	—	—

Hardware	Part Number	Supported Cisco NX-OS Release						
		U5 Series	U4 Series	U3 Series	5.0(3)U2(2d) 5.0(3)U2(2c) 5.0(3)U2(2b) Releases	5.0(3)U2(2a) Release	5.0(3)U2(2) 5.0(3)U2(1) 5.0(3)U1(2a) 5.0(3)U1(2) Releases	5.0(3)U1(1d) Release
Cisco Nexus 3064-TQ switch	N3K-C3064TQ-10GT	X ¹	—	—	—	—	—	—
Cisco Nexus 3064-X switch	N3K-C3064P10GX	X	X	X	—	—	—	—
Cisco Nexus 3064-E switch	N3K-C3064PQ-10GE	X	X	X	X	X	X	—
Cisco Nexus 3064 switch	N3K-C3064PQ	X	X	X	X	X	X	X
Cisco Nexus 3048 fan module with forward airflow (port-side exhaust)	N3K-C3048-FAN	X	X	X	X	—	—	—
Cisco Nexus 3048 fan module with reverse airflow (port-side intake)	N3K-C3048-FAN-B	X	X	X	X	—	—	—

¹ Recommended release for Cisco Nexus 3064-TQ switch is Cisco NX-OS Release 5.0(3)U5(1c) or later releases.

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Hardware	Part Number	Supported Cisco NX-OS Release						
		U5 Series	U4 Series	U3 Series	5.0(3)U2(2d) 5.0(3)U2(2c) 5.0(3)U2(2b) Releases	5.0(3)U2(2a) Release	5.0(3)U2(2) 5.0(3)U2(1) 5.0(3)U1(2a) 5.0(3)U1(2) Releases	5.0(3)U1(1d) Release
Nexus 3064-T 500W forward airflow (port side exhaust) AC power supply	NXA-PAC-500W	X	X	—	—	—	—	—
Nexus 3064-T 500W reverse airflow (port side intake) AC power supply	NXA-PAC-500W-B	X	X	—	—	—	—	—
Cisco Nexus 3064-X forward airflow (port-side exhaust) AC power supply	N3K-C3064-X-FA-L3	X	X	X	—	—	—	—
Cisco Nexus 3064-X reversed airflow (port-side intake) AC power supply	N3K-C3064-X-BA-L3	X	X	X	—	—	—	—
Cisco Nexus 3064-X forward airflow (port-side exhaust) DC power supply	N3K-C3064-X-FD-L3	X	X	X	—	—	—	—

System Requirements

Hardware	Part Number	Supported Cisco NX-OS Release						
		U5 Series	U4 Series	U3 Series	5.0(3)U2(2d) 5.0(3)U2(2c) 5.0(3)U2(2b) Releases	5.0(3)U2(2a) Release	5.0(3)U2(2) 5.0(3)U2(1) 5.0(3)U1(2a) 5.0(3)U1(2) Releases	5.0(3)U1(1d) Release
Cisco Nexus 3064-X forward airflow (port-side intake) DC power supply	N3K-C3064-X-BD-L3	X	X	X	—	—	—	—
Cisco Nexus 3064 fan module with forward airflow (port-side exhaust); also used in the Cisco Nexus 3016	N3K-C3064-FAN	X	X	X	X	X	X	X
Cisco Nexus 3064 fan module with reverse airflow (port-side intake); also used in the Cisco Nexus 3016	N3K-C3064-FAN-B	X	X	X	X	X	X	X
Cisco Nexus 3000 power supply with forward airflow (port-side exhaust)	N2200-PAC-400W	X	X	X	X	X	X	X

System Requirements

Hardware	Part Number	Supported Cisco NX-OS Release						
		U5 Series	U4 Series	U3 Series	5.0(3)U2(2d) 5.0(3)U2(2c) 5.0(3)U2(2b) Releases	5.0(3)U2(2a) Release	5.0(3)U2(2) 5.0(3)U2(1) 5.0(3)U1(2a) 5.0(3)U1(2) Releases	5.0(3)U1(1d) Release
Cisco Nexus 3000 power supply with reverse airflow (port-side intake)	N2200-PAC-400W-B	X	X	X	X	X	X	X
Cisco Nexus 2000 power supply with forward airflow (port-side exhaust)	N2200-PDC-400W	X	X	X	X	X	X	X
Cisco Nexus 2000 DC power supply with reverse airflow (port-side intake)	N3K-PDC-350W-B	X	X	X	X	X	X	X

Table 4. Transceivers Supported by Cisco NX-OS Release 6.x Software.

Transceivers ²	Part Number	Supported Cisco NX-OS Release		
		U1 Series	U2 Series	U3 Series
QSFP				
40GBASE-LR4 QSFP40G transceiver module (SMF)	QSFP-40G-LR4			X
40GBASE-CR4 QSFP+ direct-attach copper cable, 7 meters active	QSFP-H40G-ACU7M			X
40GBASE-CR4 QSFP+ direct-attach copper cable, 8 meters active	QSFP-H40G-ACU8M			X
40GBASE-CR4 QSFP+ direct-attach copper cable, 9 meters active	QSFP-H40G-ACU9M			X
40GBASE-CR4 QSFP+ direct-attach copper cable, 10 m active	QSFP-H40G-ACU10M			X
40G QSFP direct-attach active optical cable, 15 m	QSFP-H40G-AOC15M			X
QSFP to 4 x SFP 10Gbps active optical cable 15 m	QSFP-4X10G-AOC15M			X
QSFP 40G Bidirectional short-reach transceiver	QSFP-40G-SR-BD	X	X	X
QSFP 40G active optical cable 1 m	QSFP-H40G-AOC1M	X	X	X
QSFP 40G active optical cable 2 m	QSFP-H40G-AOC2M	X	X	X
QSFP 40G active optical cable 3 m	QSFP-H40G-AOC3M	X	X	X
QSFP 40G active optical cable 5 m	QSFP-H40G-AOC5M	X	X	X
QSFP 40G active optical cable 7 m	QSFP-H40G-AOC7M	X	X	X
QSFP 40G active optical cable 10 m	QSFP-H40G-AOC10M	X	X	X
QSFP to 4 x SFP 10Gbps active optical cable 1 m	QSFP-4X10G-AOC1M	X	X	X
QSFP to 4 x SFP 10Gbps active optical cable 2 m	QSFP-4X10G-AOC2M	X	X	X
QSFP to 4 x SFP 10Gbps active optical cable 3 m	QSFP-4X10G-AOC3M	X	X	X
QSFP to 4 x SFP 10Gbps active optical cable 5 m	QSFP-4X10G-AOC5M	X	X	X
QSFP to 4 x SFP 10Gbps active optical cable 7 m	QSFP-4X10G-AOC7M	X	X	X
QSFP to 4 x SFP 10Gbps active optical cable 10 m	QSFP-4X10G-AOC10M	X	X	X
Active copper splitter cable 7 m	QSFP-4x10G-AC7M ³	X	X	X
Active copper splitter cable 10 m	QSFP-4x10G-AC10M ²	X	X	X
Active copper QSFP transceiver module 7 m	QSFP-H40G-ACU7M ²	X	X	X

² OIR is supported for all optical modules and transceivers in Cisco NX-OS Release 6.02 and later releases.

³ Supported on the Cisco Nexus 3016, Cisco Nexus 3064-X, Cisco Nexus 3064-TQ, Cisco Nexus 3064, Cisco Nexus 3064-E, and all Cisco Nexus 3100 Series switches.

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Transceivers ²	Part Number	Supported Cisco NX-OS Release		
		U1 Series	U2 Series	U3 Series
Active copper QSFP transceiver module 10 m	QSFP-H40G-ACU10M ²	X	X	X
40GBASE-CSR4 QSFP transceiver module with multifiber push-on (MPO) connector 300 m	QSFP-40G-CSR4 ²	X	X	X
40GBASE-CSR4 QSFP transceiver module with MPO connector 300 m (using fiber splitter cables)	QSFP-40G-CSR4 ²	X	X	X
40GBASE-SR4 QSFP transceiver module with MPO connector 100 m	QSFP-40G-SR4 ²	X	X	X
40GBASE-SR4 QSFP transceiver module with MPO connector 100 m (using fiber splitter cables)	QSFP-40G-SR4 ²	X	X	X
40GBASE-LR4 QSFP transceiver module with LC connector 10 km (using single mode fiber)	QSFP-40GE-LR4	X	X	X
QSFP to SFP/SFP+ adapter	CVR-QSFP-SFP10G	X	X	X
40GBASE-CR4 passive copper cable, 1 m	QSFP-H40G-CU1M	X	X	X
40GBASE-CR4 passive copper cable, 3 m	QSFP-H40G-CU3M	X	X	X
40GBASE-CR4 passive copper cable, 5 m	QSFP-H40G-CU5M	X	X	X
QSFP to 4xSFP10G passive copper splitter cable, 1 m	QSFP-4SFP10G-CU1M	X	X	X
QSFP to 4xSFP10G passive copper splitter cable, 3 m	QSFP-4SFP10G-CU3M	X	X	X
QSFP to 4xSFP10G passive copper splitter cable, 5 m	QSFP-4SFP10G-CU5M	X	X	X
Revision 2 copper splitter cables 3 m	QSFP-4SFP10G-CU3 (Rev. 2)	X	X	X
Revision 2 copper splitter cables 5 m	QSFP-4SFP10G-CU5 (Rev. 2)	X	X	X
10-Gigabit				
10 db attenuator	FA-920-073-12310			X
10GBASE-ZR SFP+ module (single-mode fiber [SMF]) ⁴	SFP-10G-ZR ³			X
Cisco QSFP to SFP/SFP+ Adapter (QSA) module	CVR-QSFP-SFP10G			X
Cisco QSFP to SFP/SFP+ Adapter (QSA) module with 10GBASE-DWDM	QSA w/ DWDM			X
10GBASE-DWDM 1558.98 nm SFP+ (100-GHz ITU grid)	DWDM-SFP10G-58.98			X
10GBASE-DWDM 1539.77 nm SFP+ (100-GHz ITU grid)	DWDM-SFP10G-39.77			X

⁴ Supported on the Cisco Nexus 3064-E and Cisco Nexus 3064-X switches.

Transceivers ²	Part Number	Supported Cisco NX-OS Release		
		U1 Series	U2 Series	U3 Series
10GBASE-DWDM 1561.41 nm SFP+ (100-GHz ITU grid)	DWDM-SFP10G-61.41			X
10GBASE-DWDM 1542.94 nm SFP+ (100-GHz ITU grid)	DWDM-SFP10G-42.94			X
10GBASE-DWDM 1553.33 nm SFP+ (100-GHz ITU grid)	DWDM-SFP10G-53.33			X
10GBASE-DWDM 1537.40 nm SFP+ (100-GHz ITU grid)	DWDM-SFP10G-37.40			X
10GBASE-DWDM 1542.14 nm SFP+ (100-GHz ITU grid)	DWDM-SFP10G-42.14			X
10GBASE-DWDM 1556.55 nm SFP+ (100-GHz ITU grid)	DWDM-SFP10G-56.55			X
10GBASE-DWDM 1550.92 nm SFP+ (100-GHz ITU grid)	DWDM-SFP10G-50.92			X
10GBASE-DWDM 1531.12 nm SFP+ (100-GHz ITU grid)	DWDM-SFP10G-31.12			X
10GBASE-DWDM long-range transceiver module 80 km with single mode duplex fiber	DWDM-SFP10G-C			X
10GBASE-DWDM long-range transceiver module 80 km with single mode duplex fiber	DWDM-SFP10G	X	X	X
10GBASE-SR SFP+ module (multimode fiber [MMF])	SFP-10G-SR	X	X	X
10GBASE-LR SFP+ module (single-mode fiber [SMF])	SFP-10G-LR	X	X	X
10GBASE-ER SFP+ module (single-mode fiber [SMF])	SFP-10G-ER	X	X	X
10GBASE-ZR SFP+ module (single-mode fiber [SMF])	SFP-10G-ZR ²	X	X	X
10GBASE-DWDM SFP+ module (single-mode fiber [SMF]) ³	10-2767-01 ³	X	X	X
Active Twinax cable assembly, 7 m	SFP-H10GB-ACU7M	X	X	X
Active Twinax cable assembly, 10 m	SFP-H10GB-ACU10M	X	X	X
10GBASE-CU SFP+ cable 1 m (Twinax cable)	SFP-H10GB-CU1M	X	X	X
10GBASE-CU SFP+ cable 1.5 m (Twinax cable)	SFP-H10GB-CU1-5M	X	X	X
10GBASE-CU SFP+ cable 2 m (Twinax cable) ⁴	SFP-H10GB-CU2M ⁵	X	X	X
10GBASE-CU SFP+ cable 3 m (Twinax cable)	SFP-H10GB-CU3M	X	X	X
10GBASE-CU SFP+ cable 5 m (Twinax cable)	SFP-H10GB-CU5M	X	X	X

⁵ Supported on the Cisco Nexus 3048, Cisco Nexus 3064-X, Cisco Nexus 3064, and Cisco Nexus 3064-E switches.

System Requirements

Transceivers ²	Part Number	Supported Cisco NX-OS Release		
		U1 Series	U2 Series	U3 Series
10GBASE-CU SFP+ cable 2.5 m (Twinax cable) ⁴	SFP-H10GB-CU2-5M ⁴	X	X	X
Active optical cable 1 m	SFP-10G-AOC1M ⁵	X	X	X
Active optical cable 2 m	SFP-10G-AOC2M	X	X	X
Active optical cable 3 m	SFP-10G-AOC3M ⁵	X	X	X
Active optical cable 5 m	SFP-10G-AOC5M ⁵	X	X	X
Active optical cable 7 m	SFP-10G-AOC7M ⁵	X	X	X
Active optical cable 10 m	SFP-10G-AOC10M	X	X	X
1-Gigabit Ethernet				
Gigabit Ethernet SFP, LC connector SX transceiver (MMF)	GLC-SX-MMD Note: GLC-SX-MMD is supported on all Cisco Nexus 3000 Series Switches except for the Cisco Nexus 3064-T. Please refer to the comparability matrix for all the supported platforms.			X
Gigabit Ethernet SFP, LC connector LX/LH transceiver (SMF)	GLC-LH-SMD			X
Cisco QSFP to SFP/SFP+ Adapter (QSA) module with GLC-T	QSA w/ GLC-T			X
1000BASE-T SFP	GLC-TE			X
Cisco QSFP to SFP/SFP+ Adapter (QSA) module with GLC-TE	QSA w/ GLC-TE			X
Cisco QSFP to SFP/SFP+ Adapter (QSA) module with SFP-GE-T	QSA w/SFP-GE-T			X
1000Base-BX fiber transceiver	GLC-BX-D ⁵	X	X	X
1000Base-BX fiber transceiver	GLC-BX-U ⁵	X	X	X
1000BASE-EX fiber transceiver module, SMF	GLC-EX-SMD	X	X	X
Gigabit Ethernet SFP, LC connector LX/LH transceiver (SMF)	GLC-LH-SM ⁵	X	X	X
1000BASE-LX/LH SFP transceiver module for MMF and SMF	GLC-LH-SMD ⁵	X	X	X
Gigabit Ethernet SFP, LC connector SX transceiver (MMF)	GLC-SX-MM ⁴	X	X	X

Transceivers ²	Part Number	Supported Cisco NX-OS Release		
		U1 Series	U2 Series	U3 Series
Gigabit Ethernet SFP, LC connector SX transceiver (MMF)	GLC-SX-MMD Note: GLC-SX-MMD is supported on all Cisco Nexus 3000 Series Switches except for the Cisco Nexus 3064-T. Please refer to the comparability matrix for all the supported platforms.	X	X	X
1000BASE-T SFP ⁶	GLC-T ⁵	X	X	X
1000BASE-ZX fiber transceiver module, SMF, 1550 nm	GLC-ZX-SMD	X	X	X
1000BASE-T SFP transceiver module with extended operating temperature range	SFP-GE-T ⁵	X	X	X
100-Mbps Ethernet				
100BASE-FX SFP module for Gigabit Ethernet ports GLC-GE-100FX ⁶	10-2019-02 ⁷			100BASE-FX SFP module for Gigabit Ethernet ports GLC-GE-100FX

Note: The Cisco Nexus 3000 supports 1,000 and 10,000 speeds while using SFP+ with Cisco QSA [CVR-QSFP-SFP10G] (and a maximum of 6 QSAs). The 100 speed is not supported on the SFP+ along with QSA, but using any speed 100 is supported on the SFP+.

Table 5. Transceivers Supported by Cisco NX-OS Release 5.x Software.

Transceivers	Part Number	U5 Release	U4 Release	U3 Release	U2 Release	5.0(3)U2(1) Release	5.0(3)U1(2) 5.0(3)U1(2a) Releases	5.0(3)U1(1a) 5.0(3)U1(1b) 5.0(3)U1(1d) Releases
QSFP								
Active copper splitter cable 7 m	QSFP-4x10G-AC7M ⁸	X	—	—	—	—	—	—

⁶ Supported on the Cisco Nexus 3064, Cisco Nexus 3064-E, and Cisco Nexus 3064-X switches. For the GLC-GE-100FX, only part number 10-2019-02 is supported.

⁷ Supported on the Cisco Nexus 3048, Cisco Nexus 3064-E, and Cisco Nexus 3064-X switches. Not supported on Cisco Nexus 3132Q-X.

System Requirements

Transceivers	Part Number	U5 Release	U4 Release	U3 Release	U2 Release	5.0(3)U2(1) Release	5.0(3)U1(2) 5.0(3)U1(2a) Releases	5.0(3)U1(1a) 5.0(3)U1(1b) 5.0(3)U1(1d) Releases
Active copper splitter cable 10 m	QSFP-4x10G-AC10M ⁸	X	—	—	—	—	—	—
Active copper QSFP transceiver module 7 m	QSFP-H40G-ACU7M ⁸	X	—	—	—	—	—	—
Active copper QSFP transceiver module 10 m	QSFP-H40G-ACU10M ⁸	X	—	—	—	—	—	—
40GBASE-CSR4 QSFP transceiver module with MPO connector 300 m	QSFP-40G-CSR4 ⁸	X	X	—	—	—	—	—
40GBASE-CSR4 QSFP transceiver module with MPO connector 300 m (using fiber splitter cables)	QSFP-40G-CSR4 ⁸	X	X	—	—	—	—	—
40GBASE-SR4 QSFP transceiver module with MPO connector 100 m	QSFP-40G-SR4 ⁸	X	X	X	X	X	X	X

⁸ Supported on the Cisco Nexus 3016, Cisco Nexus 3064-X, Cisco Nexus 3064-TQ, Cisco Nexus 3064, and Cisco Nexus 3064-E switches.

System Requirements

Transceivers	Part Number	U5 Release	U4 Release	U3 Release	U2 Release	5.0(3)U2(1) Release	5.0(3)U1(2) 5.0(3)U1(2a) Releases	5.0(3)U1(1a) 5.0(3)U1(1b) 5.0(3)U1(1d) Releases
40GBASE-SR4 QSFP transceiver module with MPO connector 100 m (using fiber splitter cables)	QSFP-40G-SR4 ⁸	X	X	X	X	X	X	X
40GBASE-CR4 passive copper cable, 1 m	QSFP-H40G-CU1M	X	X	X	X	X	X	X
40GBASE-CR4 passive copper cable, 3 m	QSFP-H40G-CU3M	X	X	X	X	X	X	X
40GBASE-CR4 passive copper cable, 3 m	QSFP-H40G-CU3M	X	X	X	X	X	X	X
40GBASE-CR4 passive copper cable, 5 m	QSFP-H40G-CU5M	X	X	X	X	X	X	X
QSFP to 4xSFP10G passive copper splitter cable, 1 m	CU5M CU1M	X	X	X	X	X	X	X
QSFP to 4xSFP10G passive copper splitter cable, 3 m	QSFP-4SFP10G-CU3M	X	X	X	X	X	X	X

System Requirements

Transceivers	Part Number	U5 Release	U4 Release	U3 Release	U2 Release	5.0(3)U2(1) Release	5.0(3)U1(2) 5.0(3)U1(2a) Releases	5.0(3)U1(1a) 5.0(3)U1(1b) 5.0(3)U1(1d) Releases
QSFP to 4xSFP10G passive copper splitter cable, 5 m	QSFP-4SFP10G-CU5M	X	X	X	X	X	X	X
Revision 2 copper splitter cables 3 m	QSFP-4SFP10G-CU3 (Rev. 2)	X	—	—	—	—	—	—
Revision 2 copper splitter cables 5 m	QSFP-4SFP10G-CU5 (Rev. 2)	X	—	—	—	—	—	—
10-Gigabit								
10GBASE-SR SFP+ module (multimode fiber [MMF])	SFP-10G-SR	X	X	X	X	X	X	X
10GBASE-LR SFP+ module (single-mode fiber [SMF])	SFP-10G-LR	X	X	X	X	X	X	X
10GBASE-ER SFP+ module (single-mode fiber [SMF])	SFP-10G-ER	X	X	X	X	X	X	X
10GBASE-ZR SFP+ module (single-mode fiber [SMF]) ⁹	SFP-10G-ZR ⁹	X	X	X	—	—	—	—

⁹ Supported on the Cisco Nexus 3064-E and Cisco Nexus 3064-X switches.

System Requirements

Transceivers	Part Number	U5 Release	U4 Release	U3 Release	U2 Release	5.0(3)U2(1) Release	5.0(3)U1(2) 5.0(3)U1(2a) Releases	5.0(3)U1(1a) 5.0(3)U1(1b) 5.0(3)U1(1d) Releases
10GBASE-DWDM SFP+ module (single-mode fiber [SMF]) ⁹	10-2767-01 ⁹	X	X	X	—	—	—	—
10GBASE-CU SFP+ cable 1 m (Twinax cable)	SFP-H10GB-CU1M	X	X	X	X	X	X	X
10GBASE-CU SFP+ cable 3 m (Twinax cable)	SFP-H10GB-CU3M	X	X	X	X	X	X	X
10GBASE-CU SFP+ cable 5 m (Twinax cable)	SFP-H10GB-CU5M	X	X	X	X	X	X	X
10GBASE-CU SFP+ cable 2 m (Twinax cable) ³ ¹⁰	SFP-H10GB-CU2M ¹⁰	X	X	—	—	—	—	—
10GBASE-CU SFP+ cable 2.5 m (Twinax cable) ¹⁰	SFP-H10GB-CU2-5M ³ ¹⁰	X	X	—	—	—	—	—
Active optical cable 1 m	SFP-10G-AOC1M ¹¹	X	—	—	—	—	—	—

¹⁰ Supported on the Cisco Nexus 3048, Cisco Nexus 3064-X, Cisco Nexus 3064, and Cisco Nexus 3064-E switches.

¹¹ Supported on the Cisco Nexus 3048, Cisco Nexus 3064-E, and Cisco Nexus 3064-X switches.

System Requirements

Transceivers	Part Number	U5 Release	U4 Release	U3 Release	U2 Release	5.0(3)U2(1) Release	5.0(3)U1(2) 5.0(3)U1(2a) Releases	5.0(3)U1(1a) 5.0(3)U1(1b) 5.0(3)U1(1d) Releases
Active optical cable 3 m	SFP-10G-AOC3M ¹¹	X	—	—	—	—	—	—
Active optical cable 5 m	SFP-10G-AOC5M ¹¹	X	—	—	—	—	—	—
Active optical cable 7 m	SFP-10G-AOC7M ¹¹	X	—	—	—	—	—	—
1-Gigabit Ethernet								
1000BASE-T SFP ¹¹	GLC-T ¹¹	X	X	X	X	X	X	X
Gigabit Ethernet SFP, LC connector SX transceiver (MMF)	GLC-SX-MM ¹⁰	X	X	X	X	X	X	X
Gigabit Ethernet SFP, LC connector SX transceiver (MMF)	GLC-SX-MMD Note: GLC-SX-MMD is supported on all Cisco Nexus 3000 Series Switches except for the Cisco Nexus 3064-T. Please refer to the comparability matrix for all the supported platforms.	X	X	—	—	—	—	—

System Requirements

Transceivers	Part Number	U5 Release	U4 Release	U3 Release	U2 Release	5.0(3)U2(1) Release	5.0(3)U1(2) 5.0(3)U1(2a) Releases	5.0(3)U1(1a) 5.0(3)U1(1b) 5.0(3)U1(1d) Releases
Gigabit Ethernet SFP, LC connector LX/LH transceiver (SMF)	GLC-LH-SM ¹¹	X	X	X	X	X	X	X
1000BASE-LX/LH SFP transceiver module for MMF and SMF	GLC-LH-SMD ¹¹	X	—	—	—	—	—	—
1000Base-BX fiber transceiver	GLC-BX-U ¹¹	X	—	—	—	—	—	—
1000Base-BX fiber transceiver	GLC-BX-D ¹¹	X	—	—	—	—	—	—
1000BASE-T SFP transceiver module with extended operating temperature range	SFP-GE-T ¹¹	X	—	—	—	—	—	—
100-Mbps Ethernet								
100BASE-FX SFP module for Gigabit Ethernet ports GLC-GE-100FX ¹²	10-2019-02 ¹² GLC-GE-100FX	X	X	X	X	X	X	X

¹² Supported on the Cisco Nexus 3064, Cisco Nexus 3064-E, and Cisco Nexus 3064-X switches. For the GLC-GE-100FX, only part number 10-2019-02 is supported.

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 features and includes the following topics:

- [New Supported Hardware](#)
- [New Software Features](#)

New Supported Hardware

Cisco NX-OS Release 6.0(2)U3(9) does not include new hardware.

New Software Features

All Cisco Nexus 3000 Series switches are supported by Cisco NX-OS Release 6.0(2)U3(9). Cisco NX-OS interoperates with any networking operating system, including Cisco IOS software, that conforms to the networking standards listed in the product data sheet. This release does not include any new software features.

Upgrade and Downgrade Guidelines

- Ensure that you use the **install all** command to upgrade the switch software from one Cisco NX-OS release to another.
- 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 6.0(2)U3(9) by using Cisco NX-OS install procedures.

- In Cisco NX-OS Release 5.0(3)U3(1), support for IPv6 has been added in Control Plane Policing (CoPP). To enable redirection of IPv6 control packets to the CPU, you must configure IPv6 CoPP on the system. Entering the **write erase** command on a device that runs Release 5.0(3)U3(1) automatically applies CoPP on the device and ensures that all IPv4 and IPv6-related CoPP configuration is set up correctly.
- If you upgrade from a Cisco NX-OS release that does not support the CoPP feature to a release that does support the CoPP feature, you must run the setup utility after the upgrade to enable CoPP on the device.
- If you upgrade from Cisco NX-OS Release 5.0(3)U2(2), which supports the CoPP feature, to Cisco NX-OS Release 5.0(3)U3(1), which adds CoPP classes for IPv6 support, you must run the setup script to enable the IPv6 CoPP feature on the device.
- 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.

Limitations

The following are the known limitations for Cisco NX-OS Release 6.0(2)U3(9):

- The **lldp tlv-set vlan** command must be run on Layer 2 ports only. If you run this command on Layer 3 ports, this configuration will be ignored while determining the mgmt IP address for LLDP mgmt TLV. However, the configuration will not be removed. When the port layer mode is changed to Layer 2 again, this configuration will be considered again (See [CSCuo03279](#)).

- During congestion, when traffic for priority levels 1 and 2 takes up all the available port bandwidth, all priority level 3 traffic is dropped even though the priority level 3 queue is configured with a shaper that has minimum guarantee.

To provide the priority level 3 queue with some bandwidth, apply max shaper values, which are less than the total port bandwidth on priority level 1 and priority level 2 queues. (See [CSCum99198](#)).

- When configuring breakout or breakin on a range of ports, the following behavior is always observed (See [CSCun44231](#)):
 - Breakout or breakin takes 2-3 minutes if it is done on all QSFP ports simultaneously using the interface range command.

Caveats

This does not have a workaround.

- Running the **speed 40000** command on an interface range of ports to breakin to 40G mode displays an error message:

```
switch(config)# interface Ethernet 1/49-54
```

```
switch(config-if-range)# speed 40000
```

```
ERROR: Ethernet1/49-13, Ethernet1/50-14, Ethernet1/51-15, Ethernet1/52-16, Ethernet1/53-17,
Ethernet1/54-18: Configuration does not match the port capability
```

Interface ranges such as **interface ethernet1/49-54** are not supported on QSFP ports with breakout mode. It will behave inconsistently if used. This is applicable for Cisco Nexus 3132, 3172PQ and 3172TQ switches.

However, interface range can be used as follows:

When in 40G mode,

```
switch(config)# int e1/49,e1/50,e1/51,e1/52,e1/53,e1/54
```

```
switch(config-if-range)
```

When in 10G mode,

```
switch(config)#
```

```
switch(config)# int eth1/49/1-4,eth1/50/1-4
```

- On Nexus 3172, whenever you change the portmode from 72x10G to 48x10G+breakout6x40G mode, all QSFP ports get converted to 4x10G breakout mode automatically (See [CSCun46788](#)).

To get back to the 40G breakin mode, run the **speed 40000** command on the QSFP ports.

- Flows are created for VLANs that do not exist on the OVA via the controller. The OVA accepts these flows instead of rejecting them (See [CSCul69881](#)).
- OSPF over vPC and BFD with OSPF are supported on Cisco Nexus 3000 and 3100 Series switches. However, BFD with OSPF over vPC peer links is not currently supported (See [CSCtu87075](#)).
- MPLS stripping is not supported on Cisco NX-OS Release 6.0(2)U3(9).
- In Cisco NX-OS Release 6.0(2)U3(9), Cisco Nexus 3100 Series switches do not support PTP.
- Link Level Flow Control (LLFC) is not supported on Cisco Nexus 3000 series and Cisco Nexus 3100 series switches.

Caveats

The open and resolved bugs 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](#).

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

- [Resolved Bugs in this Release](#)

Caveats

- [Open Bugs for this Release](#)
- [Known Behaviors for this Release](#)

Resolved Bugs in this Release

Table 6 lists descriptions of resolved bugs in Cisco NX-OS Release 6.0(2)U3(9). You can use the record ID to search [Cisco Bug Search Tool](#) for details about the bug.

Table 6 Cisco NX-OS Release 6.0(2)U3(9) – Resolved Bugs

Record Number	Resolved Bug Headline
CSCuu84112	Flows getting dropped because next hop information is incorrect in the hardware.
CSCuv29193	In certain conditions, a prefix that is ECMP is installed with single NH.
CSCuv36919	ECMP table counters show negative values.
CSCuv89746	ECMP Auto-Recovery does not complete, and IPv4 or IPv6 routes are out of sync between hardware and software leading to traffic drop. Also, MTS messages can build up and not be processed by the IPFIB process.

Open Bugs for this Release

Table 7 lists descriptions of open bugs in Cisco NX-OS Release 6.0(2)U3(9). You can use the record ID to search the [Cisco Bug Search Tool](#) for details about the bug.

Table 7 Cisco NX-OS Release 6.0(2)U3(9) —Open Bugs

Record Number	Resolved Bug Headline
CSCuj10855	show tunnel int # is not showing in/out tunnel traffic statistics.
CSCun19114	Port channel members flapping on peer reload in VPC on Cisco Nexus 3000 Series switches.
CSCun74653	RIP neighbor is coming up even after shut on RIP process after system reboot.
CSCun98182	Overwrite should not happen when mode OpenFlow or tap is given to interface.
CSCuo64647	Input type queuing policy errors out on configuration replay from file.
CSCuo98834	VTY ACLs are not shown in startup after upgrade from Cisco NX-OS Release 6.0(2)U1(x) to Cisco NX-OS Release 6.0(2)U3(1).

Known Behaviors for this Release

Table 8 lists descriptions of known behaviors in Cisco NX-OS Release 6.0(2)U3(9). You can use the record ID to search the [Cisco Bug Search Tool](#) for details about the bug.

Table 8 Cisco NX-OS Release 6.0(2)U3(9) —Open Bugs

Record Number	Resolved Bug Headline
CSCun19114	Port channel members flapping on peer reload in VPC on Cisco Nexus 3000 Series switches.
CSCun74653	RIP neighbor is coming up even after shut on RIP process after system reboot.

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

- 1405964207_0x101_fwm_log.3679.tar.gzaa
- 1405964207_0x101_fwm_log.3679.tar.gzab
- 1405964207_0x101_fwm_log.3679.tar.gzac

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

```
$ cat 1405964207_0x101_fwm_log.3679.tar.gz* > 1405964207_0x101_fwm_log.3679.tar.gz
```

MIB Support

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

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

Related Documentation

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

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

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