



Cisco Nexus 3000 Series NX-OS Release Notes, Release 6.0(2)U3(1)

Release Date: May 20, 2014
Part Number: OL-29565-09
Current Release: Cisco NX-OS Release 6.0(2)U3(1)

This document describes the features, caveats, 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 on page 26.



Note

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



Note

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

Table 1 Online History Change

| Part Number | Revision | Date | Description |
|-------------|----------|------------------|--|
| OL-29565-09 | A0 | May 20, 2014 | Created NX-OS Release 6.0(2)U3(1) release notes. |
| | B0 | May 11, 2015 | Added Known Behaviors in Cisco NX-OS Release 6.0(2)U3(1) , page 25. |
| | C0 | November 2, 2015 | Added the footnote: 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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- [New and Changed Features, page 19](#)
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- [Caveats, page 24](#)
- [Obtaining Documentation and Submitting a Service Request, page 26](#)

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.

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 x 10-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 3132 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, page 3](#)
- [Hardware Supported, page 4](#)
- [Twinax Cable Support on Cisco Nexus 3000 Switches, page 18](#)
- [Cisco QSFP 40-Gbps Bidirectional Short-Reach Transceiver, page 19](#)

Memory Requirements

The Cisco NX-OS Release 6.0(2)U3(1) software requires 135 MB of flash memory.

Hardware Supported

Cisco NX-OS Release 6.0(2)U3(1) 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 Release 6.x Software

| Hardware | Part Number | Supported Cisco NX-OS Release | Supported Cisco NX-OS Release | Supported Cisco NX-OS Release |
|---|-------------------|---|---|-------------------------------|
| | | 6.0(2)U1(3) 6.0(2)U1(2) 6.0(2)U1(1a) 6.0(2)U1(1) | 6.0(2)U2(5) 6.0(2)U2(4) 6.0(2)U2(3) 6.0(2)U2(2) 6.0(2)U2(1) | 6.0(2)U3(1) |
| 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 |

| Hardware | Part Number | Supported Cisco NX-OS Release | Supported Cisco NX-OS Release | Supported Cisco NX-OS Release |
|---|-------------------|---|---|-------------------------------|
| | | 6.0(2)U1(3) 6.0(2)U1(2) 6.0(2)U1(1a) 6.0(2)U1(1) | 6.0(2)U2(5) 6.0(2)U2(4) 6.0(2)U2(3) 6.0(2)U2(2) 6.0(2)U2(1) | 6.0(2)U3(1) |
| Cisco Nexus 3064-X forward airflow (port-side exhaust) DC power supply | N3K-C3064-X-FD-L3 | X | X | X |
| 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 | | | | | | |
|----------------------------|------------------|---|-------------|--|--|--------------|---|--------------|
| | | 5.0(3)U5(1f) 5.0(3)U5(1e) 5.0(3)U5(1d) 5.0(3)U5(1c) 5.0(3)U5(1b) 5.0(3)U5(1a) 5.0(3)U5(1) | 5.0(3)U4(1) | 5.0(3)U3(2b) 5.0(3)U3(2a) 5.0(3)U3(2) 5.0(3)U3(1) | 5.0(3)U2(2d) 5.0(3)U2(2c) 5.0(3)U2(2b) | 5.0(3)U2(2a) | 5.0(3)U2(2) 5.0(3)U2(1) 5.0(3)U1(2a) 5.0(3)U1(2) | 5.0(3)U1(1d) |
| Cisco Nexus 3016 switch | N3K-C3016Q-40GE | X | X | X | X | X | — | — |
| Cisco Nexus 3048 switch | N3K-C3048TP-1GE | X | X | X | X | — | — | — |
| Cisco Nexus 3064-TQ switch | N3K-C3064TQ-10GT | X ¹ | — | — | — | — | — | — |

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

| Hardware | Part Number | Supported Cisco NX-OS Release | | | | | | |
|---|------------------|---|-------------|--|--|--------------|---|--------------|
| | | 5.0(3)U5(1f) 5.0(3)U5(1e) 5.0(3)U5(1d) 5.0(3)U5(1c) 5.0(3)U5(1b) 5.0(3)U5(1a) 5.0(3)U5(1) | 5.0(3)U4(1) | 5.0(3)U3(2b) 5.0(3)U3(2a) 5.0(3)U3(2) 5.0(3)U3(1) | 5.0(3)U2(2d) 5.0(3)U2(2c) 5.0(3)U2(2b) | 5.0(3)U2(2a) | 5.0(3)U2(2) 5.0(3)U2(1) 5.0(3)U1(2a) 5.0(3)U1(2) | 5.0(3)U1(1d) |
| 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 | — | — | — |
| 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 | — | — | — | — | — |

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

| Hardware | Part Number | Supported Cisco NX-OS Release | | | | | | |
|--|-------------------|---|-------------|--|--|--------------|---|--------------|
| | | 5.0(3)U5(1f) 5.0(3)U5(1e) 5.0(3)U5(1d) 5.0(3)U5(1c) 5.0(3)U5(1b) 5.0(3)U5(1a) 5.0(3)U5(1) | 5.0(3)U4(1) | 5.0(3)U3(2b) 5.0(3)U3(2a) 5.0(3)U3(2) 5.0(3)U3(1) | 5.0(3)U2(2d) 5.0(3)U2(2c) 5.0(3)U2(2b) | 5.0(3)U2(2a) | 5.0(3)U2(2) 5.0(3)U2(1) 5.0(3)U1(2a) 5.0(3)U1(2) | 5.0(3)U1(1d) |
| 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 | — | — | — | — |
| Cisco Nexus 3064-X forward airflow (port-side intake) DC power supply | N3K-C3064-X-BD-L3 | X | X | X | — | — | — | — |

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

| Hardware | Part Number | Supported Cisco NX-OS Release | | | | | | |
|---|------------------|---|-------------|--|--|--------------|---|--------------|
| | | 5.0(3)U5(1f) 5.0(3)U5(1e) 5.0(3)U5(1d) 5.0(3)U5(1c) 5.0(3)U5(1b) 5.0(3)U5(1a) 5.0(3)U5(1) | 5.0(3)U4(1) | 5.0(3)U3(2b) 5.0(3)U3(2a) 5.0(3)U3(2) 5.0(3)U3(1) | 5.0(3)U2(2d) 5.0(3)U2(2c) 5.0(3)U2(2b) | 5.0(3)U2(2a) | 5.0(3)U2(2) 5.0(3)U2(1) 5.0(3)U1(2a) 5.0(3)U1(2) | 5.0(3)U1(1d) |
| 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 |
| Cisco Nexus 3000 power supply with reverse airflow (port-side intake) | N2200-PAC-400W-B | X | X | X | X | X | X | X |

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

| Hardware | Part Number | Supported Cisco NX-OS Release | | | | | | |
|--|----------------|---|-------------|--|--|--------------|---|--------------|
| | | 5.0(3)U5(1f) 5.0(3)U5(1e) 5.0(3)U5(1d) 5.0(3)U5(1c) 5.0(3)U5(1b) 5.0(3)U5(1a) 5.0(3)U5(1) | 5.0(3)U4(1) | 5.0(3)U3(2b) 5.0(3)U3(2a) 5.0(3)U3(2) 5.0(3)U3(1) | 5.0(3)U2(2d) 5.0(3)U2(2c) 5.0(3)U2(2b) | 5.0(3)U2(2a) | 5.0(3)U2(2) 5.0(3)U2(1) 5.0(3)U1(2a) 5.0(3)U1(2) | 5.0(3)U1(1d) |
| 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 |

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

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

| Transceivers ¹ | Part Number | Supported Cisco NX-OS Release | |
|---|-----------------|---|---|
| | | 6.0(2)U1(3) 6.0(2)U1(2) 6.0(2)U1(1a) 6.0(2)U1(1) | 6.0(2)U2(5) 6.0(2)U2(4) 6.0(2)U2(3) 6.0(2)U2(2) 6.0(2)U2(1) |
| QSFP | | | 6.0(2)U3(1) |
| 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 |

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

| Transceivers ¹ | Part Number | Supported Cisco NX-OS Release | | |
|---|-------------------------------|---|---|-------------|
| | | 6.0(2)U1(3) 6.0(2)U1(2) 6.0(2)U1(1a) 6.0(2)U1(1) | 6.0(2)U2(5) 6.0(2)U2(4) 6.0(2)U2(3) 6.0(2)U2(2) 6.0(2)U2(1) | 6.0(2)U3(1) |
| 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 ² | X | X | X |
| Active copper splitter cable 10 m | QSFP-4x10G-AC10M ¹ | X | X | X |
| Active copper QSFP transceiver module 7 m | QSFP-H40G-ACU7M ¹ | X | X | X |
| Active copper QSFP transceiver module 10 m | QSFP-H40G-ACU10M ¹ | X | X | X |

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

| Transceivers ¹ | Part Number | Supported Cisco NX-OS Release | | |
|---|----------------------------|---|---|-------------|
| | | 6.0(2)U1(3) 6.0(2)U1(2) 6.0(2)U1(1a) 6.0(2)U1(1) | 6.0(2)U2(5) 6.0(2)U2(4) 6.0(2)U2(3) 6.0(2)U2(2) 6.0(2)U2(1) | 6.0(2)U3(1) |
| 40GBASE-CSR4 QSFP transceiver module with multifiber push-on (MPO) connector 300 m | QSFP-40G-CSR4 ¹ | X | X | X |
| 40GBASE-CSR4 QSFP transceiver module with MPO connector 300 m (using fiber splitter cables) | QSFP-40G-CSR4 ¹ | X | X | X |
| 40GBASE-SR4 QSFP transceiver module with MPO connector 100 m | QSFP-40G-SR4 ¹ | X | X | X |
| 40GBASE-SR4 QSFP transceiver module with MPO connector 100 m (using fiber splitter cables) | QSFP-40G-SR4 ¹ | 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]) | SFP-10G-ZR | | | X |
| Cisco QSFP to SFP/SFP+ Adapter (QSA) module | CVR-QSFP-SFP10G | | | X |

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

| Transceivers ¹ | Part Number | Supported Cisco NX-OS Release | | |
|--|-------------------------|---|---|-------------|
| | | 6.0(2)U1(3) 6.0(2)U1(2) 6.0(2)U1(1a) 6.0(2)U1(1) | 6.0(2)U2(5) 6.0(2)U2(4) 6.0(2)U2(3) 6.0(2)U2(2) 6.0(2)U2(1) | 6.0(2)U3(1) |
| 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 |
| 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]) ³ | SFP-10G-ZR ² | X | X | X |
| 10GBASE-DWDM SFP+ module (single-mode fiber [SMF]) ² | 10-2767-01 ² | X | X | X |

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

| Transceivers ¹ | Part Number | Supported Cisco NX-OS Release | | |
|--|-------------------------------|---|---|-------------|
| | | 6.0(2)U1(3) 6.0(2)U1(2) 6.0(2)U1(1a) 6.0(2)U1(1) | 6.0(2)U2(5) 6.0(2)U2(4) 6.0(2)U2(3) 6.0(2)U2(2) 6.0(2)U2(1) | 6.0(2)U3(1) |
| 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) ³ | SFP-H10GB-CU2M ⁴ | 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 |
| 10GBASE-CU SFP+ cable 2.5 m (Twinax cable) ³ | SFP-H10GB-CU2-5M ³ | X | X | X |
| Active optical cable 1 m | SFP-10G-AOC1M ⁴ | X | X | X |
| Active optical cable 2 m | SFP-10G-AOC2M | X | X | X |
| Active optical cable 3 m | SFP-10G-AOC3M ⁴ | X | X | X |
| Active optical cable 5 m | SFP-10G-AOC5M ⁴ | X | X | X |
| Active optical cable 7 m | SFP-10G-AOC7M ⁴ | 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 ⁵ | | | 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 ⁴ | X | X | X |
| 1000Base-BX fiber transceiver | GLC-BX-U ⁴ | X | X | X |

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

| Transceivers ¹ | Part Number | Supported Cisco NX-OS Release | | |
|---|---|---|---|-------------|
| | | 6.0(2)U1(3) 6.0(2)U1(2) 6.0(2)U1(1a) 6.0(2)U1(1) | 6.0(2)U2(5) 6.0(2)U2(4) 6.0(2)U2(3) 6.0(2)U2(2) 6.0(2)U2(1) | 6.0(2)U3(1) |
| 1000BASE-EX fiber transceiver module, SMF | GLC-EX-SMD | X | X | X |
| Gigabit Ethernet SFP, LC connector LX/LH transceiver (SMF) | GLC-LH-SM ⁴ | X | X | X |
| 1000BASE-LX/LH SFP transceiver module for MMF and SMF | GLC-LH-SMD ⁴ | X | X | X |
| Gigabit Ethernet SFP, LC connector SX transceiver (MMF) | GLC-SX-MM ³ | X | X | X |
| Gigabit Ethernet SFP, LC connector SX transceiver (MMF) | GLC-SX-MMD ⁵ | X | X | X |
| 1000BASE-T SFP ⁶ | GLC-T ⁴ | 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 ⁴ | X | X | X |
| 100-Mbps Ethernet | | | | |
| 100BASE-FX SFP module for Gigabit Ethernet ports GLC-GE-100FX ⁷ | 10-2019-02 ⁵ GLC-GE-100FX | X | X | X |

- OIR is supported for all optical modules and transceivers in Cisco NX-OS Release 6.02 and later releases.
- Supported on the Cisco Nexus 3016, Cisco Nexus 3064-X, Cisco Nexus 3064-TQ, Cisco Nexus 3064, and Cisco Nexus 3064-E switches.
- Supported on the Cisco Nexus 3064-E and Cisco Nexus 3064-X switches.
- Supported on the Cisco Nexus 3048, Cisco Nexus 3064-X, Cisco Nexus 3064, and Cisco Nexus 3064-E switches.
- 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.
- Supported on the Cisco Nexus 3048, Cisco Nexus 3064-E, and Cisco Nexus 3064-X switches.
- 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.



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 | Supported Cisco NX-OS Release | | | | | | |
|---|-------------------------------|---|-------------|-------------|--|--|-----------------------------|--|
| | | 5.0(3)U5(1f) 5.0(3)U5(1e) 5.0(3)U5(1d) 5.0(3)U5(1c) 5.0(3)U5(1b) 5.0(3)U5(1a) 5.0(3)U5(1) | 5.0(3)U4(1) | 5.0(3)U3(1) | 5.0(3)U3(2b) 5.0(3)U3(2a) 5.0(3)U3(2) 5.0(3)U3(1) | 5.0(3)U2(2c) 5.0(3)U2(2b) 5.0(3)U2(2a) 5.0(3)U2(2) 5.0(3)U2(1) | 5.0(3)U1(2) 5.0(3)U1(2a) | 5.0(3)U1(1a) 5.0(3)U1(1b) 5.0(3)U1(1d) |
| QSFP | | | | | | | | |
| Active copper splitter cable 7 m | QSFP-4x10G-AC7M ¹ | X | — | — | — | — | — | — |
| Active copper splitter cable 10 m | QSFP-4x10G-AC10M ¹ | X | — | — | — | — | — | — |
| Active copper QSFP transceiver module 7 m | QSFP-H40G-ACU7M ¹ | X | — | — | — | — | — | — |
| Active copper QSFP transceiver module 10 m | QSFP-H40G-ACU10M ¹ | X | — | — | — | — | — | — |
| 40GBASE-CSR4 QSFP transceiver module with MPO connector 300 m | QSFP-40G-CSR4 ¹ | X | X | — | — | — | — | — |
| 40GBASE-CSR4 QSFP transceiver module with MPO connector 300 m (using fiber splitter cables) | QSFP-40G-CSR4 ¹ | X | X | — | — | — | — | — |
| 40GBASE-SR4 QSFP transceiver module with MPO connector 100 m | QSFP-40G-SR4 ¹ | X | X | X | X | X | X | X |
| 40GBASE-SR4 QSFP transceiver module with MPO connector 100 m (using fiber splitter cables) | QSFP-40G-SR4 ¹ | 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 |

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

| Transceivers | Part Number | Supported Cisco NX-OS Release | | | | | | | |
|---|---------------------------|---|-------------|--|---|-----------------|-----------------------------|--|--|
| | | 5.0(3)U5(1f) 5.0(3)U5(1e) 5.0(3)U5(1d) 5.0(3)U5(1c) 5.0(3)U5(1b) 5.0(3)U5(1a) 5.0(3)U5(1) | 5.0(3)U4(1) | 5.0(3)U3(2b) 5.0(3)U3(2a) 5.0(3)U3(2) 5.0(3)U3(1) | 5.0(3)U2(2c) 5.0(3)U2(2b) 5.0(3)U2(2a) 5.0(3)U2(2) | 5.0(3) U2(1) | 5.0(3)U1(2) 5.0(3)U1(2a) | 5.0(3)U1(1a) 5.0(3)U1(1b) 5.0(3)U1(1d) | |
| 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 | QSFP-4SFP10G-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 | |
| 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]) ² | SFP-10G-ZR ² | X | X | X | — | — | — | — | |

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

| Transceivers | Part Number | Supported Cisco NX-OS Release | | | | | | |
|---|-------------------------------|---|-------------|-------------|---|---|-------------|-----------------------------|
| | | 5.0(3)U5(1f) 5.0(3)U5(1e) 5.0(3)U5(1d) 5.0(3)U5(1c) 5.0(3)U5(1b) 5.0(3)U5(1a) 5.0(3)U5(1) | 5.0(3)U4(1) | 5.0(3)U3(1) | 5.0(3)U3(2b) 5.0(3)U3(2a) 5.0(3)U3(2) | 5.0(3)U2(2c) 5.0(3)U2(2b) 5.0(3)U2(2a) 5.0(3)U2(2) | 5.0(3)U2(1) | 5.0(3)U1(2) 5.0(3)U1(2a) |
| 10GBASE-DWDM SFP+ module (single-mode fiber [SMF]) ² | 10-2767-01 ² | 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 | SFP-H10GB-CU2M ³ | X | X | — | — | — | — | — |
| 10GBASE-CU SFP+ cable 2.5 m (Twinax cable) ³ | SFP-H10GB-CU2-5M ³ | X | X | — | — | — | — | — |
| Active optical cable 1 m | SFP-10G-AOC1M ⁴ | X | — | — | — | — | — | — |
| Active optical cable 3 m | SFP-10G-AOC3M ⁴ | X | — | — | — | — | — | — |
| Active optical cable 5 m | SFP-10G-AOC5M ⁴ | X | — | — | — | — | — | — |
| Active optical cable 7 m | SFP-10G-AOC7M ⁴ | X | — | — | — | — | — | — |
| 1-Gigabit Ethernet | | | | | | | | |
| 1000BASE-T SFP ⁴ | GLC-T ⁴ | X | X | X | X | X | X | X |
| Gigabit Ethernet SFP, LC connector SX transceiver (MMF) | GLC-SX-MM ³ | X | X | X | X | X | X | X |

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

| Transceivers | Part Number | Supported Cisco NX-OS Release | | | | | | | |
|---|---|---|-------------|--|---|-----------------|-----------------------------|--|--|
| | | 5.0(3)U5(1f) 5.0(3)U5(1e) 5.0(3)U5(1d) 5.0(3)U5(1c) 5.0(3)U5(1b) 5.0(3)U5(1a) 5.0(3)U5(1) | 5.0(3)U4(1) | 5.0(3)U3(2b) 5.0(3)U3(2a) 5.0(3)U3(2) 5.0(3)U3(1) | 5.0(3)U2(2c) 5.0(3)U2(2b) 5.0(3)U2(2a) 5.0(3)U2(2) | 5.0(3) U2(1) | 5.0(3)U1(2) 5.0(3)U1(2a) | 5.0(3)U1(1a) 5.0(3)U1(1b) 5.0(3)U1(1d) | |
| Gigabit Ethernet SFP, LC connector SX transceiver (MMF) | GLC-SX-MMD ⁵ | X | X | — | — | — | — | — | |
| Gigabit Ethernet SFP, LC connector LX/LH transceiver (SMF) | GLC-LH-SM ⁴ | X | X | X | X | X | X | X | |
| 1000BASE-LX/LH SFP transceiver module for MMF and SMF | GLC-LH-SMD ⁴ | X | — | — | — | — | — | — | |
| 1000Base-BX fiber transceiver | GLC-BX-U ⁴ | X | — | — | — | — | — | — | |
| 1000Base-BX fiber transceiver | GLC-BX-D ⁴ | X | — | — | — | — | — | — | |
| 1000BASE-T SFP transceiver module with extended operating temperature range | SFP-GE-T ⁴ | X | — | — | — | — | — | — | |
| 100-Mbps Ethernet | | | | | | | | | |
| 100BASE-FX SFP module for Gigabit Ethernet ports GLC-GE-100FX ⁵ | 10-2019-02 ⁵ GLC-GE-100FX | X | X | X | X | X | X | X | |

- Supported on the Cisco Nexus 3016, Cisco Nexus 3064-X, Cisco Nexus 3064-TQ, Cisco Nexus 3064, and Cisco Nexus 3064-E switches.
- Supported on the Cisco Nexus 3064-E and Cisco Nexus 3064-X switches.
- Supported on the Cisco Nexus 3048, Cisco Nexus 3064-X, Cisco Nexus 3064, and Cisco Nexus 3064-E switches.
- Supported on the Cisco Nexus 3048, Cisco Nexus 3064-E, and Cisco Nexus 3064-X switches.
- 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 Features

This section describes the new features introduced in Cisco NX-OS Release 6.0(2)U3(1). This section includes the following topics:

- [New Supported Hardware, page 19](#)
- [New Software Features, page 20](#)

New Supported Hardware

Cisco NX-OS Release 6.0(2)U3(1) supports the following new hardware:

Cisco Nexus 3172TQ Switch

The Cisco Nexus 3172TQ switch has the following hardware specifications:

- 48 fixed 10GBASE-T ports (can operate at 100-Mbps, 1-Gbps, and 10-Gbps speeds)
- 6 fixed QSFP+ ports (each QSFP+ port can support 4 x 10 Gigabit Ethernet or 40 Gigabit Ethernet)
- Locator LED
- Dual redundant power supplies
- Redundant (3+1) and hot-swappable fans
- One 10/100/1000-Mbps management port
- One RS-232 serial console port
- One USB port

New Software Features

All Cisco Nexus 3000 Series switches are supported by Cisco NX-OS Release 6.0(2)U3(1). 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.

Cisco NX-OS Release 6.0(2)U3(1) includes the following new software features:

Prefix Matching

Cisco NX-OS Release 6.0(2)U3(1) introduces masks for prefix lists. You can use a prefix list to match the IP address in a route-map, which in turn is used in routing protocols during redistribution.

LLDP TLV Management Assignment

You can now explicitly specify the management IP address to be sent in the LLDP management TLV. This address can be one of the following:

- IP address of a port
- IP address of a VLAN (SVI)

MAC Move Threshold Action

When the number of MAC address moves between two ports exceeds a threshold, it forms a loop. Until Cisco NX-OS Release 6.0(2)U3(1), when a loop was detected between two ports, MAC learning was disabled for 180 seconds. You can now configure the action of bringing down the port with the lower interface index when such a loop is detected.

Storm Control Enhancements

You can configure traffic storm control to perform the following optional corrective actions when traffic exceeds the configured level:

- Shut down—When ingress traffic exceeds the traffic storm control level that is configured on a port, traffic storm control puts the port into the error-disabled state.

- **Trap**—You can configure traffic storm control to generate an SNMP trap when ingress traffic exceeds the configured traffic storm control level.

DHCP Client for Switch Provisioning

Cisco NX-OS Release 6.0(2)U3(1) introduces DHCP discovery on SVIs. You can configure the IP address of a DHCP client by using the **ip address dhcp** command. This command sends a request from the DHCP client to the DHCP server soliciting an IP address from the DHCP server. The DHCP client on the Cisco Nexus switch uses the SVI identifier to identify itself to the DHCP server. The DHCP server uses this identifier to send the IP address back to the DHCP client.

ECMP Recovery

The ECMP Recovery feature enables the FIB to automatically recover and reinstall partially installed ECMP routes when resources in the ECMP table become available. A threshold value can be configured for ECMP table resources to ensure that ECMP recovery is performed only when the configured percentage of ECMP table becomes free.

Downlink Delay

You can operationally enable uplink SFP+ ports before downlink RJ-45 ports after a reload on a Cisco Nexus 3048 switch. To do this, you must delay enabling the RJ-45 ports in the hardware until the SFP+ ports are enabled. You can configure a timer, which, during reload, enables the downlink RJ-45 ports in hardware only after the specified timeout. This allows the uplink SFP+ ports to be operational first. The timer is enabled in the hardware for only those ports that are admin-enable.

VM Tracker

To provide seamless movement of VMs from one physical server to another, the servers need to be reachable via the same Layer 2 domain so that the VMs can retain their IP addresses and network connectivity even after moving. With a static pre-defined configuration, this requires provisioning of all possible VLANs that can be used by VMs in a server management domain, on each port of switch. This can result in attempting to configure more logical port-based VLANs than the switch supports. Alternatively, you can dynamically provision VLANs on a Nexus 3000 Layer 2 Ethernet or Layer 2 Port Channel interface (attached to server) based on the tracking of the VMs that are connected to the port and the VLAN requirements of these VMs.

The Virtual Machine Tracker (VM Tracker) enables you to dynamically perform these tasks.

Fast Reboot

During fast reboot, the system image that runs on the CPU reloads the new image and runs it without a CPU or firmware reset. Although there is a brief disruption in traffic during fast reboot, it enables a switch to reload faster than during cold reboot. Cisco NX-OS Release 6.0(2)U3(1) provides fast reboot support for Cisco Nexus 3172.

Resilient Hashing

The resilient hashing system for Cisco Nexus 3100 Series switches maps traffic flows to physical ports. In case a link fails, the flows assigned to the failed link are redistributed uniformly among the working links. The existing flows through the working links are not rehashed and their packets are not delivered out of order. Cisco NX-OS Release 6.0(2)U3(1) provides resilient hashing support for Cisco Nexus 3172.

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.

Upgrade Path to Release 6.0(2)U3(1)

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(1) 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(1):

- 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.

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(1).
- In Cisco NX-OS Release 6.0(2)U3(1), 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

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

This section includes the following topics:

- [Resolved Caveats in Cisco NX-OS Release 6.0\(2\)U3\(1\), page 24](#)
- [Open Caveats in Cisco NX-OS Release 6.0\(2\)U3\(1\), page 24](#)
- [Known Behaviors in Cisco NX-OS Release 6.0\(2\)U3\(1\), page 25](#)

Resolved Caveats in Cisco NX-OS Release 6.0(2)U3(1)

Table 6 lists descriptions of resolved caveats in Cisco NX-OS Release 6.0(2)U3(1). The record ID links to the Cisco Bug Search page where you can find details about the caveat.

Table 6 *Cisco NX-OS Release 6.0(2)U3(1) – Resolved Caveats*

| Record Number | Resolved Caveat Headline |
|----------------------------|--|
| CSCui25370 | CLI will not unregister if onep feature status is not enabled. |
| CSCun57958 | BGP session flapping when shut Layer 3 upstream interface with IPv6 traffic. |
| CSCuo40109 | S,G OIFL corruption on link flap in peer and traffic stops. |
| CSCul84300 | Resilient Hashing does not work for IPv6 traffic for ECMP path. |

Open Caveats in Cisco NX-OS Release 6.0(2)U3(1)

Table 7 lists descriptions of open caveats in Cisco NX-OS Release 6.0(2)U3(1). The record ID links to the Cisco Bug Search page where you can find details about the caveat.

Table 7 *Cisco NX-OS Release 6.0(2)U3(1) – Open Caveats*

| Record Number | Open Caveat Headline |
|----------------------------|--|
| CSCuo98060 | The ECN keyword is lost while performing an image downgrade from Cisco NX-OS Release 6.0(2)U3(1) to Cisco NX-OS Release 6.0(2)U1(x). |
| CSCuo95375 | Downgrade from Cisco NX-OS Release 6.0(2)U3(1) to Cisco NX-OS Release 6.0(2)U1(x) leads to ipqosmgr hap reset while bootup. |
| 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). |
| CSCun57579 | Storm Control counters and action not working for ARP packets. |
| CSCuo45967 | Layer 3 PO port should not be allowed to become an OF-PORT. |
| CSCun19114 | Port channel members flapping on peer reload in VPC on Nexus 3000. |
| CSCun84984 | Cisco Nexus 3172TQ: After access switch reload, VPCs take long time to stabilize. |
| CSCun87600 | On vPC failover on access, traffic disruption for approx 17 sec is seen. |
| CSCun98182 | Overwrite should not happen when mode OpenFlow/tap given to interface. |
| CSCuo57361 | 5m AOC transceiver type unknown after hotswap and OIR. |

| Record Number | Open Caveat Headline |
|----------------------------|---|
| CSCun74653 | RIP neighbor is coming up even after shut on RIP process after system reboot. |
| CSCuj10855 | show tunnel int # is not showing in/out tunnel traffic statistics. |
| CSCuo64647 | Input type queuing policy errors out on configuration replay from file. |
| CSCuo69188 | LLDP multicast flooding on OF ports due to STM loop. |
| CSCuo53061 | ECMP path: Port once flapped is not used in hashing new flows. |
| CSCuj66918 | Punt to controller drops some packets. |

Known Behaviors in Cisco NX-OS Release 6.0(2)U3(1)

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 as demonstrated below:

```
$ 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

The documentation set is divided into the following categories:

Release Notes

The release notes are available at the following URL:

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

Installation and Upgrade Guides

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

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

Command References

The command references are available at the following URL:

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

Technical References

The technical references are available at the following URL:

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

Configuration Guides

The configuration guides are available at the following URL:

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

Error and System Messages

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

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

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

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