



# Cisco Nexus 9000 Series NX-OS Release Notes, Release 7.0(3)F2(1)

This document describes the features, caveats, and limitations for Cisco NX-OS Release 7.0(3)F2(1) software for use on the Cisco Nexus 9508 switch with N9K-X9636C-R and N9K-X9636Q-R line cards, and N9K-C9508-FM-R fabric modules. Use this document in combination with documents listed in [Related Documentation](#).

Note: Cisco NX-OS Release 7.0(3)F2(1) cannot be used with other Cisco Nexus 9000 Series switches or with a Cisco Nexus 9508 switch that does not contain N9K-X9636C-R or N9K-X9636Q-R line cards or N9K-C9508-FM-R fabric modules.

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

Table 1. Online History Change

Date	Description
April 23, 2019	Updated <a href="#">Supported Optics</a> links.
May 19, 2017	Added IP Fabric for Media Features to New and Changed Information.
May 4, 2017	Created the release notes for Release 7.0(3)F2(1).

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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 NX-OS 7.0(3)F2(1) image is specifically designed to support and bring up the N9K-X9636C-R and N9K-X9636Q-R line cards and the N9K-C9508-FM-R fabric modules of the Cisco Nexus 9508 switch.

## System Requirements

This section includes the following sections:

- Supported Device Hardware
- Supported Optics

## Supported Device Hardware

Table 2 lists the Cisco Nexus 9508 switch hardware that Cisco NX-OS Release 7.0(3)F2(1) supports. For additional information about the supported hardware, see the [Cisco Nexus 9508 NX-OS Mode Switch Hardware Installation Guide](#).

Table 2. Cisco Nexus 9508 Switch Hardware

Product ID	Hardware	Quantity
N9K-C9508	Cisco Nexus 9508 8-slot chassis  The N95-LAN-XL1K9 licensing agreement is required.	1
N9K-X9636C-R	36-port 100-Gigabit Ethernet QSFP28 line card supporting 1 x 100 and 1 x 40 Gigabit Ethernet	Up to 8 (can mix with N9K-X9636Q-R)
N9K-X9636Q-R	36-port 40-Gigabit Ethernet QSFP+ line card supporting 1 x 40 Gigabit Ethernet	Up to 8 (can mix with N9K-X9636C-R)
N9K-C9508-FM-R	Cisco Nexus 9508 fabric module	6 (5 plus 1 for redundancy)
N9K-C9508-FAN	Cisco Nexus 9508 fan trays	3
N9K-SC-A	Cisco Nexus 9500 Series system controller module	2
N9K-SUP-B	Cisco Nexus 9500 Series supervisor B module	2
N9K-PAC-3000W-B	Cisco Nexus 9500 Series 3000 W AC power supply	Up to 8

## Supported Optics

To determine which transceivers and cables are supported by this switch, see the [Transceiver Module \(TMG\) Compatibility Matrix](#).

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

## New and Changed Information

This section lists the following topics:

- New Hardware Features in Cisco NX-OS Release 7.0(3)F2(1)
- New Software Features in Cisco NX-OS Release 7.0(3)F2(1)

### New Hardware Features in Cisco NX-OS Release 7.0(3)F2(1)

Cisco NX-OS Release 7.0(3)F2(1) support the following new hardware feature:

#### Breakout Support

- Breakout support—the 36-port 100-Gigabit Ethernet QSFP28 line card (N9K-X9636C-R) and 36-port 40-Gigabit Ethernet QSFP+ line card (N9K-X9636Q-R) both provide 4x10-Gigabit support.

### New Software Features in Cisco NX-OS Release 7.0(3)F2(1)

Cisco NX-OS Release 7.0(3)F2(1) supports the following new software features:

NOTE: Cisco NX-OS Release 7.0(3)F2(1) supports these features and the features introduced in Cisco NX-OS Release 7.0(3)F1(1). Any other features are not supported in Cisco NX-OS Release 7.0(3)F2(1).

#### Interfaces Features

- UniDirectional Link Detection (UDLD)— The Cisco-proprietary Unidirectional Link Detection (UDLD) protocol allows devices that are connected through fiber-optic or copper (for example, Category 5 cabling) Ethernet cables to monitor the physical configuration of the cables and detect when a unidirectional link exists. When a device detects a unidirectional link, UDLD shuts down the affected LAN port and alerts the user. Unidirectional links can cause a variety of problems.

For more information, see the [Cisco Nexus 9000 Series NX-OS Interfaces Configuration Guide, Release 7.x](#)

#### IP Fabric for Media Features

- Introduces support for the IP fabric for media solution, which helps transition SDI-based broadcasting networks to an IP-based infrastructure. The solution features the Cisco non-blocking multicast (NBM) algorithm (an intelligent traffic management algorithm) and may use the Cisco DCNM Media Controller. It provides a highly reliable (zero-drop multicast), highly visible, highly secure, and highly available network. The Cisco Nexus 9508 switch with the N9K-X9636C-R and N9K-X9636Q-R line cards supports two deployment methods:
  - A spine-leaf topology with the DCNM Media Controller—A flexible architecture for large-scale deployments typically seen in an IP studio.

## New and Changed Information

- A single modular switch without the DCNM Media Controller—A simple deployment method for environments such as outside broadcasting (OB) vans; for Layer 3 only.

For more information, see the [Cisco Nexus 9000 Series IP Fabric for Media Solution Guide, Releases 7.0\(3\)I4\(5\), 7.0\(3\)I6\(1\), and 7.0\(3\)F2\(1\)](#) and the [Cisco Nexus 9000 Series NX-OS IP Fabric for Media Release Notes, Release 7.0\(3\)F2\(1\)](#).

## Multicast Routing Features

- IGMP Snooping—IGMP snooping software examines Layer 2 IP multicast traffic within a VLAN to discover the ports where interested receivers reside. Using the port information, IGMP snooping can reduce bandwidth consumption in a multi-access LAN environment to avoid flooding the entire VLAN. IGMP snooping tracks which ports are attached to multicast-capable routers to help the routers forward IGMP membership reports. The IGMP snooping software responds to topology change notifications. By default, IGMP snooping is enabled on the device.
- PIM SSM IPv4—Source-Specific Multicast (SSM) builds a source tree originating at the designated router on the LAN segment that receives a request to join a multicast source. SSM mode does not require you to configure RPs. Source discovery must be accomplished through other means.

For more information, see the [Cisco Nexus 9000 Series NX-OS Multicast Routing Configuration Guide, Release 7.x](#).

## Security Features

- Unicast RPF (uRPF) – Prevents malformed or spoofed source addresses from entering the network by discarding IPv4 or IPv6 packets that lack a verifiable IP source address.

For more information, see the [Cisco Nexus 9000 Series NX-OS Security Configuration Guide, Release 7.x](#).

## System Management Features

- sFlow—Sampled flow (sFlow) allows you to monitor real-time traffic in data networks that contain switches and routers. It uses the sampling mechanism in the sFlow agent software on switches and routers to monitor traffic and to forward the sample data to the central data collector. Ingress sFlow is supported. Egress sFlow is not supported.
- SPAN Sources—The interfaces from which traffic can be monitored are called SPAN sources. Sources designate the traffic to monitor and whether to copy ingress, egress, or both directions of traffic. SPAN sources include the following:
  - Ethernet ports (but not subinterfaces)
  - Port channels
  - The inband interface to the control plane CPU

For more information, see the [Cisco Nexus 9000 Series NX-OS System Management Configuration Guide, Release 7.x](#).

## Unicast Routing Features

- EIGRP V4/V6—EIGRP combines the benefits of distance vector protocols with the features of link-state protocols. EIGRP sends out periodic Hello messages for neighbor discovery. Once EIGRP learns a new neighbor, it sends a one-time update of all the local EIGRP routes and route metrics. The receiving EIGRP router calculates the route distance based on the received metrics and the locally assigned cost of the link to that neighbor. After this initial full route table update, EIGRP sends incremental updates to only those neighbors affected by the route change. This process speeds convergence and minimizes the bandwidth used by EIGRP.

- IS-IS—The IS-IS is an Interior Gateway Protocol (IGP) based on Standardization (ISO)/International Engineering Consortium (IEC) 10589. Cisco NX-OS supports Internet Protocol version 4 (IPv4) and IPv6. IS-IS is a dynamic link-state routing protocol that can detect changes in the network topology and calculate loop-free routes to other nodes in the network. Each router maintains a link-state database that describes the state of the network and sends packets on every configured link to discover neighbors. IS-IS floods the link-state information across the network to each neighbor. The router also sends advertisements and updates on the link-state database through all the existing neighbors.
- RIP v2—RIP uses User Datagram Protocol (UDP) data packets to exchange routing information in small internetworks. RIPv2 supports IPv4. RIPv2 uses an optional authentication feature supported by the RIPv2 protocol.

For more information, see the [Cisco Nexus 9000 Series NX-OS Unicast Routing Configuration Guide, Release 7.x](#).

## Caveats

This section includes the following topics:

- Resolved Caveats—Cisco NX-OS Release 7.0(3)F2(1)
- Open Caveats—Cisco NX-OS Release 7.0(3)F2(1)

## Resolved Caveats—Cisco NX-OS Release 7.0(3)F2(1)

[Table 3](#) lists the Resolved Caveats in Cisco NX-OS Release 7.0(3)F2(1). Click the bug ID to access the Bug Search tool and see additional information about the bug.

Table 3 Resolved Caveats in Cisco NX-OS Release 7.0(3)F2(1)

Bug ID	Description
<a href="#">CSCuy64960</a>	31k (S,G) are taking around 1 hour to populate all the routes.
<a href="#">CSCuz05719</a>	Traffic drop seen upon shutting one of the receiver.
<a href="#">CSCvc32357</a>	Incorrect port-channel member add behavior when the number of members greater than 32.
<a href="#">CSCvc34392</a>	P40-snake : mac-aging of 62k macs takes more than 4 times of configured value.
<a href="#">CSCvc39782</a>	Hardware rate-limiter exception. CLI not getting applied on SOC 0 ports.
<a href="#">CSCvc43443</a>	(* G) not created after doing the VRFs shut/ no shut.
<a href="#">CSCvd80547</a>	OSPFv3 neighbors down after kill OSPFv3 process.
<a href="#">CSCvd87053</a>	default information originate always configured on C9508 does not originate default route
<a href="#">CSCvd94595</a>	BGP neighbor table not stable after add/remove VRF

## Open Caveats—Cisco NX-OS Release 7.0(3)F2(1)

Table 4 lists the open caveats in Cisco NX-OS Release 7.0(3)F2(1). Click the bug ID to access the Bug Search tool and see additional information about the bug.

Table 4 Open Caveats in Cisco NX-OS Release 7.0(3)F2(1)

Bug ID	Description
<a href="#">CSCuz63650</a>	Duplicated packets were seen during (*,G) to (s, g) converge.
<a href="#">CSCva00700</a>	Traffic is flowing when source IP address is removed.
<a href="#">CSCva22452</a>	OoS policy support on L2 int for routed packet.
<a href="#">CSCvb57577</a>	Shaping on priority queuing is not working for uncredited traffic
<a href="#">CSCvc04860</a>	On SVI interfaces, post routed packets may be dropped momentarily (till MAC is learnt)
<a href="#">CSCvc08951</a>	ACL log on an interface may impact multicast traffic.
<a href="#">CSCvc16800</a>	Sometimes, System Controller gets rebooted twice during bootup on write erase reload.
<a href="#">CSCvc18748</a>	Traffic drops with BFD flap when OSPF is cleared.
<a href="#">CSCvc22177</a>	ARP storm to be contained at port level for the SVIs.
<a href="#">CSCvc27054</a>	Queue-limit supports more than 100%
<a href="#">CSCvd47812</a>	breakout priority drops when 3 streams comes from same soc
<a href="#">CSCvd62360</a>	breakout fairness between IPv4 and IPv6 traffic is not equal
<a href="#">CSCve03319</a>	multicast traffic is flooded to non members in the VLAN
<a href="#">CSCve04797</a>	100gig port w/ 100G XCVR, done breakout to no breakout does not come up with ixia
<a href="#">CSCve15562</a>	Diag Failures in FabricConnectivityTest, FabricReachabilityTest, BootupPortLoopback for bkout ports
<a href="#">CSCve16153</a>	Egress erspan is not working if the outgoing interface is an SVI
<a href="#">CSCve25514</a>	C9508 needs to have default copp class map for http & https

## Limitations

This section lists limitations related to Cisco NX-OS Release 7.0(3)F2(1).

- **IPv4 traffic might drop when only IPv6 uRPF is enabled on the interface.**
- CoPP (Control Plane Policing) cannot be disabled. If you attempt to disable it, an error message appears.
- The skip CoPP policy option has been removed from the Cisco NX-OS initial setup utility because using it can impact the control plane of the network.

## Related Documentation

The entire Cisco Nexus 9000 Series NX-OS documentation set is available at the following URL:

<https://www.cisco.com/c/en/us/support/switches/nexus-9000-series-switches/tsd-products-support-series-home.html>

The *Cisco Nexus 9000 Series NX-OS Release Notes, Release 7.0(3)F1(1)* is available at the following URL:

[https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus9000/sw/7-x/release/notes/703F11\\_nxos\\_rn.html](https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus9000/sw/7-x/release/notes/703F11_nxos_rn.html)

The *Cisco Nexus 9508 NX-OS Mode Switch Hardware Installation Guide* is available at the following URL:

[https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus9000/hw/n9508\\_hig/guide/b\\_n9508\\_nxos-mode\\_hardware\\_install\\_guide.html](https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus9000/hw/n9508_hig/guide/b_n9508_nxos-mode_hardware_install_guide.html)

The *NX-API DME Model Documentation* is available at the following URL:

<https://developer.cisco.com/media/dme/index.html>

The *Cisco Nexus 9000 Series NX-OS Programmability Guide, Release 7.x* is available at the following URL:

[https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus9000/sw/7-x/programmability/guide/b\\_Cisco\\_Nexus\\_9000\\_Series\\_NX-OS\\_Programmability\\_Guide\\_7x.html](https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus9000/sw/7-x/programmability/guide/b_Cisco_Nexus_9000_Series_NX-OS_Programmability_Guide_7x.html)

## New Documentation

The *Cisco Nexus 9000 Series NX-OS Verified Scalability Guide, Release 7.0(3)F2(1)* is available at the following URL:

[https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus9000/sw/7-x/scalability/guide\\_703F11/b\\_Cisco\\_Nexus\\_9000\\_Series\\_NX-OS\\_Verified\\_Scalability\\_Guide\\_703F11.html](https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus9000/sw/7-x/scalability/guide_703F11/b_Cisco_Nexus_9000_Series_NX-OS_Verified_Scalability_Guide_703F11.html)

## Documentation Feedback

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

Open a service request online at:

<https://tools.cisco.com/ServiceRequestTool/create/launch.do>

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This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (<http://www.openssl.org/>). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

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