



# Cisco Nexus 9000 Series NX-OS IP Fabric for Media Release Notes, Release 9.2(3)

This document describes the Cisco IP fabric for media solution, new hardware and software features, upgrade instructions, and caveats for Cisco NX-OS Release 9.2(3) software for use on the following switches:

- Cisco Nexus 9236C switch
- Cisco Nexus 9272Q switch
- Cisco Nexus 92160YC-X switch
- Cisco Nexus 9364C switch
- Cisco Nexus 93108TC-EX, 93180LC-EX, and 93180YC-EX switches
- Cisco Nexus 93108TC-FX, 93180YC-FX, 9336C-FX2, 93240YC-FX2, and 9348GC-FXP switches
- Cisco Nexus 9504 and 9508 switches with the N9K-X9636C-R and N9K-X9636Q-R line cards

Use this document in combination with documents listed in **the “Related Documentation” section**.

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

Table 1 Online History Change

Date	Description
February 18, 2019	Created the release notes for Cisco Nexus 9000 Series NX-OS IP Fabric for Media Release 9.2(3).

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## IP Fabric for Media

Today, the broadcast industry uses a serial digital interface (SDI) router and SDI cables to transport video and audio traffic. The SDI cables can carry only a single unidirectional signal. As a result, many cables, frequently stretched over long distances, is required, making it difficult and time-consuming to expand or change an SDI-based infrastructure.

**Cisco's IP fabric for media solution helps transition from an SDI router to an IP-based infrastructure.** In an IP-based infrastructure, a single cable has the capacity to carry multiple bidirectional traffic flows and can support different flow sizes without requiring changes to the physical infrastructure. The solution uses Cisco Nexus 9000 Series switches in conjunction with the Cisco non-blocking multicast (NBM) algorithm (an intelligent traffic management algorithm) and with or without the Cisco DCNM Media Controller to provide a highly reliable (zero drop multicast), highly visible, highly secure, and highly available network.

Cisco Nexus 9000 Series NX-OS IP Fabric for Media Release 9.2(3) supports two deployment methods:

- Spine-leaf topology—A single or multi-spine deployment method with variable flow size that allows the NBM fabric to form a multicast flow.
- Single modular switch—An architecture suitable for fixed deployments, with the controller providing features such as flow visibility, security, and monitoring.

## Supported Device Hardware

Table 2 lists the hardware that the Cisco Nexus 9000 Series NX-OS IP Fabric for Media Release 9.2(3) supports. For additional information about the supported hardware, see the [Hardware Installation Guide](#) for your Cisco Nexus 9000 Series device.

Table 2 Cisco Nexus 9000 Series Hardware

Product ID	Hardware Description	Role in Topology
N9K-C9236C	Cisco Nexus 9236C 1-RU switch with 36 40/100-Gigabit QSFP28 ports (144 10/25-Gigabit ports when using breakout cables)	Spine or leaf switch in spine-leaf topology
N9K-C9272Q	Cisco Nexus 9272Q 2-RU switch with 72 40-Gigabit Ethernet QSFP+ ports (up to 35 of the ports [ports 37-71] also support breakout cables providing up to 140 10-Gigabit connections)	Spine or leaf switch in spine-leaf topology
N9K-C92160YC-X	Cisco Nexus 92160YC-X 1-RU switch with 48 10/25-Gigabit SFP+ downlink ports and 6 40-Gigabit QSFP+ uplink ports, with 4 of the uplink ports capable of supporting QSFP28 transceivers (100 Gigabits)	Leaf switch in spine-leaf topology
N9K-C9364C	Cisco Nexus 9364C 2-RU Top-of-Rack switch with 64 40/100-Gigabit QSFP28 ports and 2 1/10-Gigabit SFP+ ports	Spine switch in spine-leaf topology
N9K-C93108TC-EX	Cisco Nexus 93108TC-EX 1-RU switch with 48 10GBASE-T ports and 6 40/100-Gigabit QSFP28 ports	Leaf switch in spine-leaf topology

Product ID	Hardware Description	Role in Topology
N9K-C93180LC-EX	Cisco Nexus 93180LC-EX 1-RU switch with 32 40/50-Gigabit downlink QSFP+ ports or 18 fixed 100-Gigabit uplink QSFP28 ports	Leaf switch in spine-leaf topology
N9K-C93180YC-EX	Cisco Nexus 93180YC-EX 1-RU switch with 48 10/25-Gigabit Ethernet ports and 6 40/100-Gigabit QSFP28 ports	Leaf switch in spine-leaf topology
N9K-C93108TC-FX	Cisco Nexus 93108TC-FX 1-RU Top-of-Rack switch with 48 10GBASE-T (copper) ports and 6 40/100-Gigabit QSFP28 ports	Leaf switch in spine-leaf topology
N9K-C93180YC-FX	Cisco Nexus 93180YC-FX 1-RU Top-of-Rack switch with 48 10/25-Gigabit SFP28 ports and 6 40/100-Gigabit QSFP28 ports	Leaf switch in spine-leaf topology
N9K-C9336C-FX2	Cisco Nexus 9336C-FX2 1-RU switch with 36 40/100-Gigabit Ethernet QSFP28 ports	Spine or leaf switch in spine-leaf topology
N9K-C93240YC-FX2	Cisco Nexus 93240YC-FX2 1.2-RU Top-of-Rack switch with 48 10/25-Gigabit SFP28 fiber ports and 12 40/100-Gigabit Ethernet QSFP28 ports	Spine or leaf switch in spine-leaf topology
N9K-C9348GC-FXP	Cisco Nexus 9348GC-FXP switch with 48 100M/1GBASE-T (copper) ports, 4 10/25-Gigabit SFP28 ports, and 2 40/100-Gigabit QSFP ports	Leaf switch in spine-leaf topology
Cisco Nexus 9504 or 9508 switch with the following line cards: <ul style="list-style-type: none"> <li>• N9K-X9636C-R</li> <li>• N9K-X9636Q-R</li> </ul>	<p>Cisco Nexus 9504 4-slot or 9508 8-slot switch</p> <p>N9K-X9636C-R: 36-port 100-Gigabit Ethernet QSFP28 line card supporting 1 x 100 and 1 x 40 Gigabit Ethernet</p> <p>N9K-X9636Q-R: 36-port 40-Gigabit Ethernet QSFP+ line card supporting 1 x 40 Gigabit Ethernet</p>	Spine in spine-leaf topology or single modular switch

## New Software Features

This section lists the new software features in Cisco Nexus 9000 Series NX-OS IP Fabric for Media Release 9.2(3).

- Host policies-Added the ability to enter a wildcard (0.0.0.0) for the host IP address for sender and local receiver host policies. Using a wildcard allows you to detect all hosts that are sending or receiving multicast traffic on a particular group or mask using a single configuration.
- NBM flow definition-Added the ability to establish flows by defining an NBM flow, rather than by configuring IGMP static OIF. NBM exposes a CLI and an API to provision flows to receivers when they do not use IGMP to signal their interest in joining or leaving a flow. You can program a flow to go all the way to the receiver leaf, in order to pre-reserve the network bandwidth, or direct the leaf switch to send the traffic to the receiver by specifying the egress interface.

## Open Caveats

- NBM flow policies-Added the ability to disable the policer for NBM flow policies. By default, each source flow uses a policer on the source leaf (the first hop router). When the number of multicast source flows exceeds the number of policers, the flow is not accepted by the source leaf. To override this behavior, you can disable the policer under the flow policy.
- PIM-Removed the requirement to prebuild the shortest path tree (SPT) for known (S,G) routes using the ip pim pre-build-spt force command. This command is needed for Cisco NX-OS Releases 9.2(1) and 9.2(2) so the PIM rendezvous point (RP) can pull traffic from the source leaf. This command is not needed in Cisco NX-OS Release 9.2(3) because the functionality is implemented using another internal mechanism.

For more information, see the [Cisco Nexus 9000 Series IP Fabric for Media Solution Guide, Release 9.x](#).

## Open Caveats

Table 3 lists the open caveats in Cisco Nexus 9000 Series NX-OS IP Fabric for Media Release 9.2(3). Click the bug ID to access the Bug Search tool and see additional information about the bug.

Table 3 Open Caveats in Cisco Nexus 9000 Series NX-OS IP Fabric for Media Release 9.2(3)

Bug ID	Description
<a href="#">CSCvi52063</a>	[NBM] CR fails for host-policy cli
<a href="#">CSCvk17027</a>	[NBM] svc_ifc_policye/policyelem takes 10mins after "no fea nbm" and "fea nbm" with 19K hostpolicy
<a href="#">CSCvn80686</a>	[NBM] *,G join is dropped when RP config is not present
<a href="#">CSCvo30127</a>	Pending-delete/CC issues with static flows upon reload of spines

## Resolved Caveats

Table 4 lists the resolved caveats in Cisco Nexus 9000 Series NX-OS IP Fabric for Media Release 9.2(3). Click the bug ID to access the Bug Search tool and see additional information about the bug.

Table 4 Resolved Caveats in Cisco Nexus 9000 Series NX-OS IP Fabric for Media Release 9.2(3)

Bug ID	Description
<a href="#">CSCvk06735</a>	Delete the *, G policy, OIF is not removed immediately (removed after 3 IGMP joins)

## Limitations

When using ASM (IGMPv2), the bandwidth is reserved between the receiver leaf switch and the spine switch even when the sender is local to the receiver leaf switch.

## Upgrade Instructions

NBM static OIF can include an SVI; however, an IGMP snooping entry must be manually created to force the traffic out of the Layer 2 physical interface.

## Upgrade Instructions

Follow these steps to upgrade from a Cisco NX-OS 7.x or 9.x release to Cisco NX-OS Release 9.2(3) in an IP fabric for media deployment.

Note: For Cisco Nexus 9504 and 9508 switches with N9K-X9636C-R and N9K-X9636Q-R line cards, you must upgrade from Cisco NX-OS Release 7.0(3)F3(4) to a 9.x release.

1. Shut down the endpoint-facing ports on the switches.
2. Disable NBM (using the `no feature nbm` command).
3. Disable the `ip pim pre-build-spt force` command on the spine switches in your fabric.
4. Disable PIM passive mode (using the `no ip pim passive` command).
5. Upgrade the switch software from 7.x or 9.x to 9.2(3).
6. Upgrade DCNM.
7. Configure PIM and MSDP, if applicable.
8. Enable NBM (using the `feature nbm` command).
9. Configure NBM policies using the CLI or DCNM. (See the [Cisco Nexus 9000 Series IP Fabric for Media Solution Guide, Release 9.x.](#))
10. If you're not using DCNM, disable IGMP static OIF and create an NBM flow definition to establish a flow.
11. Re-enable all ports facing the endpoints.

## Related Documentation

- [Cisco Nexus 9000 Series IP Fabric for Media Solution Guide, Release 9.x](#)
- [Cisco Nexus 9000 Series NX-OS Release Notes, Release 9.2\(3\)](#)
- [Cisco Nexus 9000 Series NX-OS Verified Scalability Guide, Release 9.2\(3\)](#)
- [Cisco Nexus 3000 and 9000 Series NX-API REST SDK User Guide and API Reference](#)
- The entire Cisco Nexus 9000 Series NX-OS documentation set is available at the following URL:  
<http://www.cisco.com/c/en/us/support/switches/nexus-9000-series-switches/tsd-products-support-series-home.html>

## Documentation Feedback

To provide technical feedback on this document, or to report an error or omission, please send your comments to [nexus9k-docfeedback@cisco.com](mailto:nexus9k-docfeedback@cisco.com). We appreciate your feedback.

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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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