



# Cisco NX-OS Release 12.0(1) Release Notes for Cisco Nexus 9000 Series ACI-Mode Switches

This document describes the features, caveats, and limitations for Cisco NX-OS software that runs on Cisco Nexus 9000 Series Application Centric Infrastructure (ACI) switches.

**Note:** Use this document in combination with the *Cisco Application Policy Infrastructure Controller, Release 2.0(1), Release Notes*, which you can view at the following location:

<https://www.cisco.com/c/en/us/support/cloud-systems-management/application-policy-infrastructure-controller-apic/tsd-products-support-series-home.html>

Additional product documentation is listed in the “Related Documentation” section.

Release notes are sometimes updated with new information about restrictions and caveats. See the following website for the most recent version of the *Cisco NX-OS Release 12.0(1) Release Notes for Cisco Nexus 9000 Series ACI-Mode Switches*:

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

Table 1 shows the online change history for this document.

**Table 1. Online History Change**

Date	Description
July 2, 2016	Created the release notes for Release 12.0(1m).
July 5, 2016	12.0(1m): Removed the “Changes in Behavior” section. The information did not apply to this release.
July 9, 2016	12.0(1n): Added the content for release 12.0(1n). Added support for the N9K-C93108TC-EX switch.
July 25, 2016	12.0(1o): Added the content for release 12.0(1o).
August 1, 2016	In the Compatibility Information section, changed “You cannot connect the APIC directly to the N9332PQ ACI spine” to “You cannot connect the APIC directly to the N9332PQ ACI leaf switch.”
August 9, 2016	12.0(1p): Added the resolved caveats for release 12.0(1p).
August 26, 2016	12.0(1q): Added the resolved caveats for release 12.0(1q).
October 28, 2016	In the Supported FEX Models section, added N2K-B22HP-P.

Contents

Date	Description
December 6, 2016	In the "Usage Guidelines" section, removed the bullet that began with, "GARP flooding is enabled by default for the Cisco Nexus 9318oYC-EX switch..." GARP flooding is now disabled by default for 9318oYC-EX switches.
February 19, 2018	12.0(1m): In the Open Caveats section, added bug CSCvc18574.

## Contents

This document includes the following sections:

- [Cisco Nexus 9000 Series ACI-Mode](#)
- [Supported Hardware](#)
- [Supported FEX Models](#)
- [New and Changed Information](#)
- [Installation Notes](#)
- [Compatibility Information](#)
- [Usage Guidelines](#)
- [Caveats](#)
- [Related Documentation](#)

## Cisco Nexus 9000 Series ACI-Mode

Cisco NX-OS Software for the Cisco Nexus 9000 Series is a data center, purpose-built, operating system designed with performance, resiliency, scalability, manageability, and programmability at its foundation. It provides a robust and comprehensive feature set that meets the requirements of virtualization and automation in data centers

Cisco NX-OS Release 12.0 works only on Cisco Nexus 9000 Series switches in ACI Mode.

See [Table 2](#) for a list of modules that are supported on Cisco Nexus 9000 Series switches in ACI Mode.

## Supported Hardware

[Table 2](#) lists the hardware that the Cisco Nexus 9000 Series ACI Mode switches support.

**Table 2. Cisco Nexus 9000 Series Hardware.**

Hardware Type	Product ID	Description
Chassis	NgK-C9504	Cisco Nexus 9504 chassis with 4 I/O slots
Chassis	NgK-C9508	Cisco Nexus 9508 chassis with 8 I/O slots
Chassis component	NgK-C9508-FAN	Fan tray
Chassis component	Ngk-PAC-3000W-B	Cisco Nexus 9500 3000W AC power supply, port side intake
Pluggable module (GEM)	NgK-M6PQ	6-port
Pluggable module (GEM)	NgK-M6PQ-E	6-port, 40 Gigabit Ethernet expansion module
Pluggable module (GEM)	NgK-M12PQ	12-port or 8-port
Spine switch	NgK-C9336PQ	Cisco Nexus 9336PQ switch, 36-port 40 Gigabit Ethernet QSFP
Spine switch	NgK-C9508-B1	Cisco Nexus 9508 chassis bundle with 1 supervisor module, 3 power supplies, 2 system controllers, 3 fan trays, and 3 fabric modules
Spine switch	NgK-C9508-B2	Cisco Nexus 9508 chassis bundle with 1 supervisor module, 3 power supplies, 2 system controllers, 3 fan trays, and 6 fabric modules
Spine switch	NgK-C9516	Cisco Nexus 9516 switch with 16 line card slots  <b>Note:</b> This switch supports up to 10 line cards.

## Supported Hardware

Hardware Type	Product ID	Description
Spine switch fan	NgK-C9300-FAN3	Port side intake fan
Spine switch fan	NgK-C9300-FAN3-B	Port side exhaust fan
Spine switch module	NgK-C9504-FM	Cisco Nexus 9504 fabric module supporting 40 Gigabit line cards
Spine switch module	NgK-C9504-FM-E	Cisco Nexus 9504 fabric module supporting 100 Gigabit line cards
Spine switch module	NgK-C9508-FM	Cisco Nexus 9508 fabric module supporting 40 Gigabit line cards
Spine switch module	NgK-C9508-FM-E	Cisco Nexus 9508 Fabric module supporting 100 Gigabit line cards
Spine switch module	NgK-X9732C-EX	Cisco Nexus 9500 32-port, 40/100 Gigabit Ethernet QSFP28 aggregation module
Spine switch module	NgK-X9736PQ	Cisco Nexus 9500 36-port, 40 Gigabit Ethernet QSFP aggregation module
Switch module	NgK-SC-A	Cisco Nexus 9500 Series system controller
Switch module	NgK-SUP-A	Cisco Nexus 9500 Series supervisor module
Switch module	NgK-SUP-B	Cisco Nexus 9500 Series supervisor module
Top-of-rack (ToR) leaf switch	NgK-C93108TC-EX	Cisco Nexus 9300 with 48-port 1/10 Gigabit-T and 6-port 100 Gigabit Ethernet QSFP28 switch
Top-of-rack (ToR) leaf switch	NgK-C93120TX	Cisco Nexus 9300 with 96-port 1/10 Gigabit-T and 6-port 40 Gigabit Ethernet QSFP switch
Top-of-rack (ToR) leaf switch	NgK-C93128TX	Cisco Nexus 9300 96-port, 1-/10-Gbps BASE-T and 6-port or 8-port, 40 Gigabit Ethernet QSFP switch
Top-of-rack (ToR) leaf switch	NgK-C93180YC-EX	Cisco Nexus 9300 Fixed with 48-port 10/25 Gigabit and 6-port 40/100 Gigabit QSFP28
Top-of-rack (ToR) leaf switch	NgK-C9332PQ	Cisco Nexus 9332PQ 32-port 40 Gigabit Ethernet QSFP+ Top-of-rack (ToR) Layer 3 switch
Top-of-rack (ToR) leaf switch	NgK-C9372PX	Cisco Nexus 9372PX 48-port, 10 Gigabit Ethernet SFP+ and 6-port 40 Gigabit Ethernet QSFP+ Top-of-rack (ToR) Layer 3 switch  <b>Note:</b> Only the downlink ports 1-16 and 33-48 are capable of supporting SFP1-10G-ZR SFP+.

## Supported Hardware

Hardware Type	Product ID	Description
Top-of-rack (ToR) leaf switch	NgK-C9372PX-E	Cisco Nexus 9372PX-E 48-port, 10 Gigabit Ethernet SFP+ and 6-port 40 Gigabit Ethernet QSFP+ Top-of-rack (ToR) Layer 3 switch  <b>Note:</b> Only the downlink ports 1-16 and 33-48 are capable of supporting SFP1-10G-ZR SFP+.
Top-of-rack (ToR) leaf switch	NgK-C9372TX	Cisco Nexus 9372TX 48-port, 1/10 Gbps Base-T and 6-port, 40 Gigabit Ethernet QSFP Top-of-rack (ToR) Layer 3 switch
Top-of-rack (ToR) leaf switch	NgK-C9372TX-E	Cisco Nexus 9372TX-E 48-port 1/10 Gbps Base-T and 6-port 40 Gbps Ethernet QSFP+ Top-of-rack (ToR) Layer 3 switch
Top-of-rack (ToR) leaf switch	NgK-C9396PX	Cisco Nexus 9300 48-port, 1/10 Gigabit Ethernet SFP+ and 6-port or 12-port, 40 Gigabit Ethernet QSFP switch
Top-of-rack (ToR) leaf switch	NgK-C9396TX	Cisco Nexus 9300 48-port, 1/10 Gbps Base-T and 6-port or 12-port, 40 Gigabit Ethernet QSFP switch
Top-of-rack (ToR) leaf switch power supply unit	NgK-PAC-650W-B	650W AC Power supply, port side exhaust pluggable
Top-of-rack (ToR) leaf switch power supply unit	NgK-PAC-650W	650W AC Power supply, port side intake pluggable
Top-of-rack (ToR) leaf switch power supply unit	NgK-PAC-1200W-B	1200W AC Power supply, port side exhaust pluggable  <b>Note:</b> This power supply is supported only by the Cisco Nexus 93120TX, 93128TX, and 9336PQ ACI-mode switches
Top-of-rack (ToR) leaf switch power supply unit	NgK-PAC-1200W	1200W AC Power supply, port side intake pluggable  <b>Note:</b> This power supply is supported only by the Cisco Nexus 93120TX, 93128TX, and 9336PQ ACI-mode switches
Top-of-rack (ToR) leaf switch power supply unit	NgK-PUV-1200W	1200W HVAC/HVDC dual-direction airflow power supply  <b>Note:</b> This power supply is supported only by the Cisco Nexus 93120TX, 93128TX, and 9336PQ ACI-mode switches

Hardware Type	Product ID	Description
Top-of-rack (ToR) leaf switch power supply unit	NgK-PUV-3000W-B	3000W AC Power supply, port side exhaust pluggable
Top-of-rack (ToR) leaf switch power supply unit	NXA-PAC-1200W-PE	1200W AC Power supply, port side exhaust pluggable, with higher fan speeds for NEBS compliance  <b>Note:</b> This power supply is supported only by the Cisco Nexus 93120TX, 93128TX, and 9336PQ ACI-mode switches.
Top-of-rack (ToR) leaf switch power supply unit	NXA-PAC-1200W-PI	1200W AC Power supply, port side intake pluggable, with higher fan speeds for NEBS compliance  <b>Note:</b> This power supply is supported only by the Cisco Nexus 93120TX, 93128TX, and 9336PQ ACI-mode switches.
Top-of-rack (ToR) leaf switch power supply unit	UCS-PSU-6332-DC	930W DC power supply, reversed airflow (port side exhaust)
Top-of-rack (ToR) leaf switch power supply unit	UCSC-PSU-930WDC V01	Port side exhaust DC power supply compatible with all ToR leaf switches
Top-of-rack (ToR) leaf switch fan	NXA-FAN-30CFM-F	Port side exhaust fan
Top-of-rack (ToR) leaf switch fan	NXA-FAN-30CFM-B	Port side intake fan

## Supported FEX Models

Table 3 lists the FEX models that the Cisco Nexus 9000 Series ACI Mode switches support. For more information on the FEX models, see the *Cisco Nexus 2000 Series Fabric Extenders Data Sheet* at the following location:

<https://www.cisco.com/c/en/us/products/switches/nexus-2000-series-fabric-extenders/datasheet-listing.html>

**Table 3. Supported FEX Models.**

Product ID	Description
N2K-B22DELL-P	B22 FEX for Dell
N2K-B22HP-P	B22 FEX for HP
N2K-B22IBM-P	B22 FEX for IBM

Product ID	Description
N2K-C2248PQ-10GE	Cisco Nexus 2248PQ 10GE Fabric Extender, 2PS, 4 Fan Module, 48x1/10GE (req SFP/SFP+) + 4x40G QSFP+(req QSFP+), choice of airflow and power supply
N2K-C2248TP-1GE	Cisco Nexus 2248TP Series 1GE Fabric Extender, 2 AC PS, 1 Fan Module (Standard Airflow/port side exhaust), 48x100/1000Base-T + 4x10GE (req SFP+), same as N2K-C2248TP
N2K-C2248TP-E-1GE	Cisco Nexus 2248TP-E Series 1GE Fabric Extender, 2PS, 1 Fan Module, 48x100/1000Base-T + 4x10GE (req SFP+), 32MB buffer, choice of airflow and power supply
N2K-C2332TQ	Cisco Nexus 2332TQ 10G BASE T Fabric Extender, 2PS, 3 Fan Module, 48x100M/1/10GE + 4x40G QSFP+(req QSFP+), choice of airflow and power supply
N2K-C2348TQ	Cisco Nexus 2348TQ 10G BASE T Fabric Extender, 2PS, 3 Fan Module, 48x100M/1/10GE + 6x40G QSFP+(req QSFP+), choice of airflow and power supply
N2K-C2348UPQ	48 100M/1/10 Gigabit Ethernet and Unified Port host interfaces (SFP+) and up to 6 QSFP+ 10/40 Gigabit Ethernet fabric interfaces
N2K-C2232PP-10GE	Cisco Nexus 2232PP Series 10GE Fabric Extender, 2 AC PS, 1 Fan Module (Standard Airflow/port side exhaust), 32x1/10GE (req SFP/SFP+) + 8x10GE (req SFP+), same as N2K-C2232PP
N2K-C2232TM-E-10GE	Cisco Nexus 2232TM-E Series 10GBASE-T Fabric Extender, 2PS, 1 Fan Module, 32x1/10GBase-T + 8x10GE Module (req SFP+), choice of airflow and power supply

## New and Changed Information

This section lists the new and changed features in this release.

- New Hardware Features
- New Software Features

### New Hardware Features

Cisco NX-OS release 12.0(1) supports the following new hardware features:

- The Cisco Nexus 9504, 9508, and 9516 ACI-Mode switches support 3000W DC power supplies in addition to 3000W AC power supplies and 3000W Universal AC/DC power supplies.
- The Cisco Nexus 93180YC-EX switch supports 1200-W HVAC/HVDC and 930-W DC power supplies in addition to 650-W AC power supplies.
- The Cisco Nexus 9332PQ switch supports QSFP-to-SFP+ adapters so that you can use 10-Gigabit transceivers in its 40-Gigabit downlink ports.
- In the 12.0(1n) release, the Cisco Nexus 93108TC-EX switch became supported.

### New Software Features

For new software features, see the *Cisco APIC 2.0(1) Release Notes* at the following location:



<https://www.cisco.com/c/en/us/support/cloud-systems-management/application-policy-infrastructure-controller-apic/tsd-products-support-series-home.html>

## Installation Notes

The following procedure installs a Gigabit Ethernet module (GEM) in a top-of-rack switch:

1. Clear the switch's current configuration by using the **setup-clean-config** command.
2. Power off the switch by disconnecting the power.
3. Replace the current GEM card with the new GEM card.
4. Power on the switch.

For other installation instructions, see the *Cisco ACI Fabric Hardware Installation Guide* at the following location:

<https://www.cisco.com/c/en/us/support/cloud-systems-management/application-policy-infrastructure-controller-apic/tsd-products-support-series-home.html>

## Compatibility Information

- This release supports the hardware and software listed on the ACI Ecosystem Compatibility List and the Cisco AVS, Release 5.2(1)SV3(2.1).
- The breakout of 40G ports to 4x10G on the N9332PQ switch is not supported in ACI-Mode.
- To connect the N2348UPO to ACI leaf switches, the following options are available:
  - Directly connect the 40G FEX ports on the N2348UPO to the 40G switch ports on the ACI leaf switches
  - Break out the 40G FEX ports on the N2348UPO to 4x10G ports and connect to the N9396PX, N9372PX, or N9372PX-E switches
- To connect the APIC (the controller cluster) to the ACI fabric, it is required to have a 10G interface on the ACI leaf. You cannot connect the APIC directly to the N9332PQ ACI leaf switch.

## Usage Guidelines

- The current list of protocols that are allowed (and cannot be blocked through contracts) include the following. Some of the protocols have SrcPort/DstPort distinction.

**Note:** See the APIC release notes for policy information: <https://www.cisco.com/c/en/us/support/cloud-systems-management/application-policy-infrastructure-controller-apic/tsd-products-support-series-home.html>

- UDP DstPort 161: SNMP. These cannot be blocked through contracts. Creating an SNMP ClientGroup with a list of Client-IP Addresses restricts SNMP access to only those configured Client-IP Addresses. If no Client-IP address is configured, SNMP packets are allowed from anywhere.
- TCP SrcPort 179: BGP
- TCP DstPort 179: BGP
- OSPF
- UDP DstPort 67: BOOTP/DHCP
- UDP DstPort 68: BOOTP/DHCP

## Caveats

- IGMP
- PIM
- UDP SrcPort 53: DNS replies
- TCP SrcPort 25: SMTP replies
- TCP DstPort 443: HTTPS
- UDP SrcPort 123: NTP
- UDP DstPort 123: NTP

- Leafs and spines from two different fabrics cannot be connected regardless of whether the links are administratively kept down.

## Caveats

This section contains lists of open and resolved caveats and known behaviors.

- [Known Limitations](#)
- [Open Caveats](#)
- [Resolved Caveats](#)
- [Known Behaviors](#)

## Known Limitations

The following list describes IpEpg (IpCkt) known limitations in this release:

- An IP/MAC Ckt endpoint configuration is not supported in combination with static endpoint configurations.
- An IP/MAC Ckt endpoint configuration is not supported with Layer 2-only bridge domains. Such a configuration will not be blocked, but the configuration will not take effect as there is no Layer 3 learning in these bridge domains.
- An IP/MAC Ckt endpoint configuration is not supported with external and Infra bridge domains because there is no Layer 3 learning in these bridge domains.
- An IP/MAC Ckt endpoint configuration is not supported with a shared services provider configuration. The same or overlapping prefix cannot be used for a shared services provider and IP Ckt endpoint. However, this configuration can be applied in bridge domains having shared services consumer endpoint groups.
- An IP/MAC Ckt endpoint configuration is not supported with dynamic endpoint groups. Only static endpoint groups are supported.
- No fault will be raised if the IP/MAC Ckt endpoint prefix configured is outside of the bridge domain subnet range. This is because a user can configure bridge domain subnet and IP/MAC Ckt endpoint in any order and so this is not error condition. If the final configuration is such that a configured IP/MAC Ckt endpoint prefix is outside all bridge domain subnets, the configuration has no impact and is not an error condition.
- Dynamic deployment of contracts based on instrImmedcy set to onDemand/lazy not supported; only immediate mode is supported.

The following list describes direct server return (DSR) known limitations in this release:

- When a server and load balancer are on the same endpoint group, make sure that the Server does not generate ARP/GARP/ND request/response/solicits. This will lead to learning of LB virtual IP (VIP) towards the Server and defeat the purpose of DSR support

## Caveats

- Load balancers and servers must be Layer 2 adjacent. Layer 3 direct server return is not supported. If a load balancer and servers are Layer 3 adjacent, then they have to be placed behind the Layer 3 out, which works without a specific direct server return virtual IP address configuration.
- Direct server return is not supported for shared services. Direct server return endpoints cannot be spread around different virtual routing and forwarding (VRF) contexts.
- Configurations for a virtual IP address can only be /32 or /128 prefix.
- Client to virtual IP address (load balancer) traffic always will go through proxy-spine because fabric data-path learning of a virtual IP address does not occur.
- GARP learning of a virtual IP address must be explicitly enabled. A load balancer can send GARP when it switches over from active-to-standby (MAC changes).
- Learning through GARP will work only in ARP Flood Mode.

## Open Caveats

This section lists the open caveats. Click the bug ID to access the Bug Search tool and see additional information about the bug. If a caveat is fixed in a patch of this release, the "Fixed In" column of the tables specifies the release.

## Open Caveats in the 12.0(1m) Release

The following table lists the open caveats in the 12.0(1m) release:

Table 4. Open Caveats in the 12.0(1m) Release

Bug ID	Description	Fixed In
<a href="#">CSCun35596</a>	FEX logs are missing in the output of the <b>show fex detail</b> command.	
<a href="#">CSCun96495</a>	The events and faults for interfaces are not updated under Ports in the GUI.	
<a href="#">CSCup05629</a>	The output of some CLI commands display very slowly.	
<a href="#">CSCup86130</a>	Because <b>ibash</b> is implemented on top of <b>bash</b> , when using <b>ibash</b> for the CLI, the <b>bash</b> behavior is inherited. For example, the <b>sh mod</b> command works in traditional Cisco switches. But when executed on NgK switches in <b>ibash</b> , because <b>bash</b> interprets <b>sh</b> differently, <b>sh mod</b> will not work. Similarly, if there is a clash in the next available options, the TAB key must be pressed twice to get the options rather than once as in other Cisco switches.  In short, the CLI infra for <b>ibash</b> is not exactly the same as the CLI infra for the traditional Cisco switches because NgK <b>ibash</b> is built on top of <b>bash</b> .	
<a href="#">CSCur32247</a>	FEX-related diagnostic results are missing.	
<a href="#">CSCuy40089</a>	Shared L3out and spine L3out in-band management do not work together.	
<a href="#">CSCva11574</a>	When a port is applied with speed 100M and is configured with <b>Autoneg-off</b> , the link does not come up. For 100M speed, <b>Autoneg-OFF</b> is not supported.	
<a href="#">CSCva17432</a>	If the PIM and multicast source is behind a Layer 3 out or is internal, receivers on the inside stop receiving multicast traffic. When vtep moves from one FI (FI-A) to the other FI (FI-B) VPC, multicast traffic stops.	

## Caveats

Bug ID	Description	Fixed In
<a href="#">CSCva27324</a>	The virtual Fibre Channel (VFC) NP port enters the flogi-fail-retry state followed by the down state if there is a user-configured mismatch of the VSAN and VLAN mapping between the leaf switch and the Fibre Channel Forwarder (FCF). To recover the VFC NP port, delete the wrong VLAN-VSAN mapping on the leaf switch, delete and recreate the VLAN pool/encapsulation block if needed, and then create the correct VLAN-VSAN mapping.	
<a href="#">CSCva29021</a>	Layer 3 multicast with IGMP dumps a core when deleting or adding a tenant.	12/0(10)
<a href="#">CSCvc14588</a>	The endpoint manager (EPM) and endpoint manager client (EPMC) continuously have high CPU usage due to rapid R2R XR moves, which results in traffic loss.	
<a href="#">CSCvc18574</a>	Local endpoints are installed without a "Bounce" flag and point to a remote tunnel instead of a local interface.	

## Open Caveats in the 12.0(1n) Release

The following table lists the open caveats in the 12.0(1n) release:

Table 5. Open Caveats in the 12.0(1n) Release

Bug ID	Description	Fixed In
<a href="#">CSCva11574</a>	If a port on a Cisco Nexus 93108TC-EX switch is configured to use 100M speed or the remote peer connected to this switch is configured as 100M, the link will not come up.	

## Open Caveats in the 12.0(1o) Release

There are no new open caveats in the 12.0(1o) release:

## Open Caveats in the 12.0(1p) Release

There are no new open caveats in the 12.0(1p) release:

## Open Caveats in the 12.0(1q) Release

There are no new open caveats in the 12.0(1q) release:

## Resolved Caveats

This section lists the resolved caveats. Click the bug ID to access the Bug Search tool and see additional information about the bug.

## Resolved Caveats in the 12.0(1m) Release

The following table lists the resolved caveats in the 12.0(1m) release:

Table 6 Resolved Caveats in the 12.0(1m) Release

Bug ID	Description

## Caveats

Bug ID	Description
<a href="#">CSCux25207</a>	After upgrading TORs from the 1.1(4e) release to the 1.2(1k) release, when the maint-grp-1 set of the TORs are rebooted, there is traffic loss on the virtual machines.

## Resolved Caveats in the 12.0(1n) Release

There are no new resolved caveats in the 12.0(1n) release:

## Resolved Caveats in the 12.0(1o) Release

The following table lists the resolved caveats in the 12.0(1o) release:

**Table 7 Resolved Caveats in the 12.0(1o) Release**

Bug ID	Description
<a href="#">CSCva29021</a>	Layer 3 multicast with IGMP dumps a core when deleting or adding a tenant.

## Resolved Caveats in the 12.0(1p) Release

The following table lists the resolved caveats in the 12.0(1p) release:

**Table 8 Resolved Caveats in the 12.0(1p) Release**

Bug ID	Description
<a href="#">CSCva17082</a>	SNMP dumps a core after reloading the switches if there are 12,000 or more LPM routes.
<a href="#">CSCva22586</a>	A non-border leaf switch with static route becomes inactive after fabric flap.
<a href="#">CSCva61926</a>	Multi-destination frames are not being flooded in the fabric. If there is a source on a leaf and a destination on another leaf, then the frame that gets sent from the source never makes it to the destination when you have the bridge domain settings set to flood.

## Resolved Caveats in the 12.0(1q) Release

The following table lists the resolved caveats in the 12.0(1q) release:

**Table 9 Resolved Caveats in the 12.0(1q) Release**

Bug ID	Description
<a href="#">CSCva84657</a>	DHCP is not working for servers that are plugged into an ACI fabric in which the DHCP messages are relayed from a bridge domain to an external server.
<a href="#">CSCva87046</a>	A TCP packet with the SYN flag and ACK flag is not permitted by the TCP EST filter.

## Known Behaviors

This section lists caveats that describe known behaviors. Click the Bug ID to access the Bug Search Tool and see additional information about the bug.

## Known Behaviors in the 12.0(1m) Release

The following table lists caveats that describe known behaviors in the 12.0(1m) release:

**Table 10. Known Behaviors in the 12.0(1m) Release**

Bug ID	Description
<a href="#">CSCu037016</a>	When configuring the output span on a FEX Hif interface, all the layer 3 switched packets going out of that FEX Hif interface are not spanned. Only layer 2 switched packets going out of that FEX Hif are spanned.
<a href="#">CSCu050533</a>	When output span is enabled on a port where the filter is VLAN, multicast traffic in the VLAN that goes out of that port is not spanned.
<a href="#">CSCup65586</a>	The <b>show interface</b> command shows the tunnel's Rx/Tx counters as 0.
<a href="#">CSCup82908</a>	The <b>show vpc brief</b> command displays the wire-encap VLAN Ids and the <b>show interface .. trunk</b> command displays the internal/hardware VLAN IDs. Both VLAN IDs are allocated and used differently, so there is no correlation between them.
<a href="#">CSCup92534</a>	Continuous "threshold exceeded" messages are generated from the fabric.
<a href="#">CSCuq39829</a>	Switch rescue user ("admin") can log into fabric switches even when TACACS is selected as the default login realm.
<a href="#">CSCuq46369</a>	An extra 4 bytes is added to the untagged packet with Egress local and remote SPAN.
<a href="#">CSCuq77095</a>	When the command <b>show ip ospf vrf &lt;vrf_name&gt;</b> is run from bash on the border leaf, the checksum field in the output always shows a zero value.
<a href="#">CSCuq83910</a>	When an IP address moves from one MAC behind one ToR to another MAC behind another ToR, even though the VM sends a GARP packet, in ARP unicast mode, this GARP packet is not flooded. As a result, any other host with the original MAC to IP binding sending an L2 packet will send to the original ToR where the IP was in the beginning (based on MAC lookup), and the packet will be sent out on the old port (location). Without flooding the GARP packet in the network, all hosts will not update the MAC-to-IP binding.
<a href="#">CSCuq92447</a>	When modifying the L2Unknown Unicast parameter on a Bridge Domain (BD), interfaces on externally connected devices may bounce. Additionally, the endpoint cache for the BD is flushed and all endpoints will have to be re-learned.
<a href="#">CSCuq93389</a>	If an endpoint has multiple IPs, the endpoint will not be aged until all IPs go silent. If one of the IP addresses is reassigned to another server/host, the fabric detects it as an IP address move and forwarding will work as expected.
<a href="#">CSCur01336</a>	The PSU does not get detected after an OIR device with power input is connected.
<a href="#">CSCur81822</a>	The access-port operational status is always "trunk".
<a href="#">CSCus18541</a>	An MSTP topology change notification (TCN) on a flood domain (FD) VLAN may not flush endpoints learned as remote where the FD is not deployed.
<a href="#">CSCus29623</a>	The transceiver type for some Cisco AOC (active optical) cables is displayed as ACU (active copper).
<a href="#">CSCus43167</a>	Any TCAM that is full, or nearly full, will raise the usage threshold fault. Because the faults for all TCAMs on leaf switches are grouped together, the fault will appear even on those with low usage.  Workaround: Review the leaf switch scale and reduce the TCAM usage. Contact TAC to isolate further which TCAM is full.
<a href="#">CSCus54135</a>	The default route is not leaked by BGP when the scope is set to context. The scope should be set to <b>Outside</b> for default route leaking.

## Caveats

Bug ID	Description
<a href="#">CSCus61748</a>	<p>If the TOR 1RU system is configured with the RED fan (the reverse airflow), the air will flow from back to front. The temperature sensor in the back will be defined as an Inlet temperature sensor, and the temperature sensor in the front will be defined as an outlet temperature sensor.</p> <p>If the TOR 1RU system is configured with the BLUE fan (normal airflow), the air will flow from front to back. The temperature sensor in the front will be defined as an Inlet temperature sensor, and the temperature sensor in the back will be defined as outlet temperature sensor.</p> <p>From the airflow perspective, the Inlet sensor reading should always be less than the outlet sensor reading. However, in the TOR 1RU family, the front panel temperature sensor has some inaccurate readings due to the front panel utilization and configuration, which causes the Inlet temperature sensor reading to be very close, equal, or even greater than the outlet temperature reading.</p>
<a href="#">CSCut59020</a>	If Backbone and NSSA areas are on the same leaf, and default route leak is enabled, Type-5 LSAs cannot be redistributed to the Backbone area.
<a href="#">CSCuu11347</a>	Traffic from the orphan port to the vPC pair is not recorded against the tunnel stats. Traffic from the vPC pair to the orphan port is recorded against the tunnel stats.
<a href="#">CSCuu11351</a>	Traffic from the orphan port to the vPC pair is only updated on the destination node, so the traffic count shows as excess.
<a href="#">CSCuu66310</a>	If a bridge domain "Multi Destination Flood" mode is configured as "Drop", the ISIS PDU from the tenant space will get dropped in the fabric.
<a href="#">CSCuv57302</a>	Atomic counters on the border leaf do not increment for traffic from an endpoint group going to the Layer 3 out interface.
<a href="#">CSCuv57315</a>	Atomic counters on the border leaf do not increment for traffic from the Layer 3 out interface to an internal remote endpoint group.
<a href="#">CSCuv57316</a>	TEP counters from the border leaf to remote leaf nodes do not increment.
<a href="#">CSCuw09389</a>	For direct server return operations, if the client is behind the Layer 3 out, the server-to-client response will not be forwarded through the fabric.
<a href="#">CSCux97329</a>	With the common pervasive gateway, only the packet destination to the virtual MAC is being properly Layer 3 forwarded. The packet destination to the bridge domain custom MAC fails to be forwarded. This is causing issues with certain appliances that rely on the incoming packets' source MAC to set the return packet destination MAC.
<a href="#">CSCuy00084</a>	BCM does not have a stats option for yellow packets/bytes, and so BCM does not show in the switch or APIC GUI stats/observer.
<a href="#">CSCuy02543</a>	Bidirectional Forwarding Detection (BFD) echo mode is not supported on IPv6 BFD sessions carrying link-local as the source and destination IP address. BFD echo mode also is not supported on IPv4 BFD sessions over multihop or VPC peer links.
<a href="#">CSCuy06749</a>	Traffic is dropped between two isolated EPGs.
<a href="#">CSCuy22288</a>	The iping command's replies get dropped by the QOS ingress policer.
<a href="#">CSCuy25780</a>	An overlapping or duplicate prefix/subnet could cause the valid prefixes not to be installed because of batching behavior on a switch. This can happen during an upgrade to the 1.2(2) release.
<a href="#">CSCuy47634</a>	EPG statistics only count total bytes and packets. The breakdown of statistics into multicast/unicast/broadcast is not available on new hardware.

## Caveats

Bug ID	Description
<a href="#">CSCuy56975</a>	You must configure different router MACs for SVI on each border leaf if L3out is deployed over port-channels/ports with STP and OSPF/OSPFv3/eBGP protocols are used. There is no need to configure different router MACs if you use VPC.
<a href="#">CSCuy61018</a>	The default minimum bandwidth is used if the BW parameter is set to "0", and so traffic will still flow.
<a href="#">CSCuy77579</a>	For NgK-9318oYC-EX switches, the unicast reachability of a multicast source is required for forwarding on Shortest-Path-Tree (SPT). However, if unicast reachability is not present for a multicast source that is outside of the fabric, receivers inside of the fabric in certain cases can still get the packets on the shared tree even after the border leaf switches have switched over to the SPT in the control plane. In other words, the PIM protocol might have switched over to SPT by installing a <S,G> route with NULL-RPF, but in the data plane, packets might still get forwarded on the shared <*,G> tree.
<a href="#">CSCuy96912</a>	The debounce timer is not supported on 25G links.
<a href="#">CSCuz13529</a>	With the NgK-C9318oYC-EX switch, drop packets, such as MTU or storm control drops, are not accounted for in the input rate calculation.
<a href="#">CSCuz13614</a>	For traffic coming out of an L3out to an internal EPG, stats for the actrlRule will not increment.
<a href="#">CSCuz13810</a>	When subnet check is enabled, a ToR does not learn IP addresses locally that are outside of the bridge domain subnets. However, the packet itself is not dropped and will be forwarded to the fabric. This will result in such IP addresses getting learned as remote endpoints on other ToRs.
<a href="#">CSCuz47058</a>	SAN boot over a virtual Port Channel or traditional Port Channel does not work.
<a href="#">CSCuz65221</a>	A policy-based redirect (PBR) policy to redirect IP traffic also redirects IPv6 neighbor solicitation and neighbor advertisement packets.
<a href="#">CSCva21406</a>	When nodes in the pod are running with mixed releases of the 12.0(x) release and pre-11.2(2) release, this can lead ISIS to core on the pre-11.2(2) release nodes.

- IPN should preserve the CoS and DSCP values of a packet that enters IPN from the ACI spine switches. If there is a default policy on these nodes that change the CoS value based on the DSCP value or by any other mechanism, you must apply a policy to prevent the CoS value from being changed. At the minimum, the remarked CoS value should not be 4, 5, 6 or 7. If CoS is changed in the IPN, you must configure a multipod QoS policy in the ACI for the multipod that translates queuing class information of the packet into the DSCP value in the outer header of the iVXLAN packet.
- The following properties within a QoS class under "Global QoS Class policies," should not be changed from its default value and is only used for debugging purposes:
  - MTU (default – 9216 bytes)
  - Queue Control Method (default – Dynamic)
  - Queue Limit (default – 1522 bytes)
  - Minimum Buffers (default – 0)
- The Cisco Nexus 9508 ACI-mode switch supports warm (stateless) standby where the state is not synched between the active and the standby supervisor modules. For an online insertion and removal (OIR) or reload of the active supervisor module, the standby supervisor module becomes active, but all modules in the switch are reset because the switchover is stateless. In the output of the **show system redundancy status** command, warm standby indicates stateless mode.
- When a recommissioned APIC controller rejoins the cluster, GUI and CLI commands can time out while the cluster expands to include the recommissioned APIC controller.
- If connectivity to the APIC cluster is lost while a switch is being decommissioned, the decommissioned switch may not complete a clean reboot. In this case, the fabric administrator should manually complete a clean reboot of the decommissioned switch.



## Related Documentation

- Before expanding the APIC cluster with a recommissioned controller, remove any decommissioned switches from the fabric by powering down and disconnecting them. Doing so will ensure that the recommissioned APIC controller will not attempt to discover and recommission the switch.

IGMP Snooping Known Behaviors:

- Multicast router functionality is not supported when IGMP queries are received with VxLAN encapsulation.
- IGMP Querier election across multiple Endpoint Groups (EPGs) or Layer 2 outsiders (External Bridged Network) in a given bridge domain is not supported. Only one EPG or Layer 2 outside for a given bridge domain should be extended to multiple multicast routers if any.
- The rate of the number of IGMP reports sent to a leaf switch should be limited to 1000 reports per second.
- Unknown IP multicast packets are flooded on ingress leaf switches and border leaf switches, unless "unknown multicast flooding" is set to "Optimized Flood" in a bridge domain. This knob can be set to "Optimized Flood" only for a maximum of 50 bridge domains per leaf.

If "Optimized Flood" is enabled for more than the supported number of bridge domains on a leaf, follow these configuration steps to recover:

- Set "unknown multicast flooding" to "Flood" for all bridge domains mapped to a leaf.
- Set "unknown multicast flooding" to "Optimized Flood" on needed bridge domains.

## Known Behaviors in the 12.0(1n) Release

There are no new known behaviors in the 12.0(1n) release.

## Known Behaviors in the 12.0(1o) Release

There are no new known behaviors in the 12.0(1o) release.

## Known Behaviors in the 12.0(1p) Release

There are no new known behaviors in the 12.0(1p) release.

## Known Behaviors in the 12.0(1q) Release

There are no new known behaviors in the 12.0(1q) release.

## Related Documentation

The Cisco Application Policy Infrastructure Controller (APIC) documentation can be accessed from the following website:

<https://www.cisco.com/c/en/us/support/cloud-systems-management/application-policy-infrastructure-controller-apic/tsd-products-support-series-home.html>

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