



Release Notes for Catalyst 3560-CX and 2960-CX Series Switches, Cisco IOS Release 15.2(3)E and Later

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This release note describes the features and caveats for the Cisco IOS Release 15.2(3)E software on the Catalyst 3560-CX and the Catalyst 2960-CX family of switches.

Verify that these release notes are correct for your switch:

- If you are installing a new switch, see the Cisco IOS release label on the rear panel of the switch.
- If your switch is on, use the **show version** privileged EXEC command. See the “[Upgrading the Switch Software](#)” section on page 5.
- If you are upgrading to a new release, see the software upgrade filename for the software version. See the “[Software Image](#)” section on page 6.

You can download the switch software from this site (registered Cisco.com users with a login password):

<http://www.cisco.com/download/navigator.html>

Contents

- [Introduction, page 2](#)
- [What’s New, page 2](#)
- [Supported Hardware, page 4](#)
- [Device Manager System Requirements, page 5](#)
- [Upgrading the Switch Software, page 5](#)
- [Features of the Switch, page 6](#)
- [Service and Support, page 7](#)
- [Limitations and Restrictions, page 8](#)



- [Caveats, page 8](#)
- [Related Documentation, page 9](#)

Introduction

The Catalyst 3560-CX and Catalyst 2960-CX switches are compact Gigabit Ethernet (GE) switches that have features comparable to high-end Cisco switches but in smaller form factors. Some of the key features are:

- Up to 10 Gigabit uplinks for high-bandwidth applications and business growth
- 6 Gigabit Ethernet plus 2 Multigigabit Ethernet (100 Mbps/1/2.5/5/10 Gbps) ports with line rate forwarding performance (Catalyst 3560CX-8XPD-S)
- Cisco Catalyst Instant Access mode (on Catalyst 3560CX-12PD-S and Catalyst 3560CX-8XPD-S) for management simplicity on switches with 10G uplink. See Instant Access FAQ [here](#).
- Support for Cisco Application Policy Infrastructure Controller Enterprise Module (APIC-EM) for software-defined networking (SDN) and programmability
- Integration with Cisco TrustSec® for identity, segmentation, and security
- Up to 240W of available power for PoE+ per switch — twice the available power of previous generation switches — for supporting more PoE devices
- Switch Hibernation Mode and Energy Efficient Ethernet (EEE) for lower energy costs
- NetFlow Lite for end-to-end visibility to the flows in the network
- Advanced Layer 2 (LAN Base) and Layer 3 (IP Base) support with an option to upgrade to IP services

What's New

- [What's New in Cisco IOS Release 15.2\(3\)E3, page 2](#)
- [What's New in Cisco IOS Release 15.2\(3\)E2, page 3](#)
- [What's New in Cisco IOS Release 15.2\(3\)E1, page 3](#)

What's New in Cisco IOS Release 15.2(3)E3

Feature	Description
Enhancement to Web-auth configuration	(IP Base) Commands under global parameter-map to enable non SVI and VRF aware Web-auth configuration.
Rapid PVST+	(All licenses) Rapid PVST+ is now the default spanning-tree mode used on all Ethernet port-based VLANs
Enhancement to Smart Install	(All licenses) PnP discovery process via various discovery mechanisms and security methods is supported
Named VLAN	(All licenses) Option to specify a VLAN name for access and voice VLAN.

What's New in Cisco IOS Release 15.2(3)E2

There are no new features to mention here.

What's New in Cisco IOS Release 15.2(3)E1

Software

Cisco Discovery Protocol Bypass—In Cisco Discovery Protocol Bypass mode Cisco Discovery Protocol packets are received and transmitted unchanged. Received packets are not processed. No packets are generated.

The Cisco Discovery Protocol Bypass feature support is available in Cisco IOS Release 15.2(3)E1 and later releases. This feature support was discontinued in Cisco IOS Release 15.2(1)E.

New Hardware Support

- Catalyst 3560CX-8XPD-S switch that supports SFP+ module slots and Catalyst 3560CX-8PT-S switch that provides support for Cisco Universal PoE (Cisco UPOE™). For more details about these switches, see the [Switch Models](#) section.
- Optional auxiliary AC-DC or DC-DC power adapter for powering up the Catalyst 3560CX-8PT-S switches.
- Optional power adapter bracket to secure the auxiliary power adapter.

Cisco Multigigabit Ethernet

Cisco's Multigigabit Ethernet technology allows you to leverage 802.11ac Wave 2 speeds on your device. You can configure the WS-C3560CX-8XPD-S module to auto-negotiate multiple speeds on switch ports, and support 100 Mbps, 1 Gbps, 2.5 Gbps, and 5 Gbps speeds on Category 5e cables, and up to 10 Gbps over Category 6 and Category 6A cables.

The WS-C3560CX-8XPD-S module has 8 ports, of which the 6 ports are 1 Gigabit Ethernet ports and 2 ports are Multigigabit ports.

PoE pass-through

The Cisco Catalyst 3560CX-8PT-S has eight downlink ports with two Cisco UPOE input ports that allows it to be powered by another switch. These switches receive power over the uplink from an upstream PoE or Cisco UPOE device. The switch can also receive power from an AC power source when you use the auxiliary power input.

Supported Hardware

Switch Models

Table 1 Catalyst 3560-CX Switch Models

Switch Model	Cisco IOS Image	Description
WS-C3560CX-8TC-S	IP Base IP Services	Non-PoE, 8 downlink ports, 8 access ports of 1G access ports, 2 SFP uplink ports of 1G, 2 uplink Cu ports of 1G ¹
WS-C3560CX-8PC-S	IP Base IP Services	240W PoE+, 8 downlink ports, 8 access ports of 1G access ports, 2 SFP uplink ports of 1G, 2 uplink Cu ports of 1G ¹
WS-C3560CX-12TC-S	IP Base IP Services	Non-PoE, 12 downlink ports, 12 access ports of 1G, 2 SFP uplink ports of 1G, 2 uplink Cu ports of 1G ¹
WS-C3560CX-12PC-S	IP Base IP Services	240W PoE+, 12 downlink ports, 12 access ports of 1G, 2 SFP uplink ports of 1G, 2 uplink Cu ports of 1G ¹
WS-C3560CX-12PD-S	IP Base IP Services	240W PoE+, 12 downlink ports, 12 access ports of 1G, 2 SFP+ uplink ports of 10G, 2 uplink Cu ports of 1G ¹
WS-C3560CX-8PT-S	IP Base IP Services	8 10/100/1000 PoE+ downlink ports, 2 Cisco UPOE uplink ports, 146W power supply
WS-C3560CX-8XPD-S	IP Base IP Services	6 10/100/1000 PoE+ downlink ports, 2 multigigabit 100/1000/2500/5000/10000 PoE+ ports, 2 10G SFP+ uplink ports ¹ , 240W power supply

1. For all switch models, the SFP ports and Cu ports are usable concurrently.

Table 2 Catalyst 2960-CX Switch Models

Switch Model	Cisco IOS Image	Description
WS-C2960CX-8TC-L	LAN Base	Non-PoE, 8 downlink ports, 8 access ports of 1G, 2 SFP uplink ports of 1G, 2 uplink Cu ports of 1G ¹
WS-C2960CX-8PC-L	LAN Base	124W PoE+, 8 downlink ports, 8 access ports of 1G, 2 SFP uplink ports of 1G, 2 uplink Cu ports of 1G

1. For all switch models, the SFP ports and Cu ports are usable concurrently.

Optics Modules

The Catalyst 3560-CX and 2960-CX switches support a wide range of optics. Because the list of supported optics is updated on a regular basis, consult the tables at this URL for the latest SFP+ and SFP module compatibility information:

http://www.cisco.com/en/US/products/hw/modules/ps5455/products_device_support_tables_list.html

Device Manager System Requirements

Hardware Requirements

Table 3 Minimum Hardware Requirements

Processor Speed	DRAM	Number of Colors	Resolution	Font Size
233 MHz minimum ¹	512 MB ²	256	1024 x 768	Small

1. We recommend 1 GHz.
2. We recommend 1 GB DRAM.

Software Requirements

- Windows 2000, XP, Vista, Windows 7, and Windows Server 2003.
- Internet Explorer 6.0, 7.0, Firefox up to version 26.0 with JavaScript enabled.

CNA Compatibility

For Cisco IOS Release 15.2(3)E, CNA support is available on release version 5.8.9 and later.

You can download Cisco Network Assistant from this URL:

<http://www.cisco.com/cgi-bin/tablebuild.pl/NetworkAssistant>

For more information about Cisco Network Assistant, see the *Release Notes for Cisco Network Assistant* on Cisco.com.

Upgrading the Switch Software

Finding the Software Version and Feature Set

The Cisco IOS image is stored as a bin file in a directory that is named with the Cisco IOS release number. The files necessary for web management are contained in a subdirectory. The image is stored on the system board flash device (flash:).

You can use the **show version** privileged EXEC command to see the software version that is running on your switch.



Note

Although the **show version** output always shows the software image running on the switch, the model name shown at the end of this display is the factory configuration and does not change if you upgrade the software license.

You can also use the **dir filesystem:** privileged EXEC command to see the directory names of other software images that you might have stored in flash memory.

Software Image

If you have a service support contract and order a software license or if you order a switch, you receive the universal software image and a specific software license.

Table 4 Software Image for Cisco Catalyst 3560-CX

Image	Filename	Description
Universal image	c3560cx-universalk9-mz.152-3.E1	IP Base and IP Services images.
Universal image	c3560cx-universalk9-tar.152-3.E1	IP Base and IP Services cryptographic images with Device Manager.

Table 5 Software Images for Cisco Catalyst 2960-CX

Image	Filename	Description
Universal image	c2960cx-universalk9-mz.152-3.E1	LAN Base image.
Universal image	c2960cx-universalk9-tar.152-3.E1	LAN Base cryptographic image with Device Manager.

Features of the Switch

Cisco Catalyst 3560-CX switches features:

- PoE+ and non-PoE, 8 and 12 downlink ports, 1G SFP and 10G SFP+ uplink port models
- Two Multigigabit PoE+ (100 Mbps/1/2.5/5/10 Gbps) ports (on Catalyst 3560CX-8XPD-S) with line rate forwarding performance
- IPv4 and IPv6 routing, Multicast routing, advanced quality of service (QoS), and security features in hardware
- PoE pass-through functionality that enables the switch (Catalyst 3560CX-8PT-S) to draw Cisco UPOE power from the wiring closet and power the PoE end devices
- Cisco Catalyst Instant Access mode (on Catalyst 3560CX-12PD-S and Catalyst 3560CX-8XPD-S) for management simplicity on switches with 10G uplink
- Up to 240W of available power for PoE+ per switch
- Switch Hibernation Mode and Energy Efficient Ethernet (EEE) for lower energy costs

- Enhanced Limited Lifetime Warranty (E-LLW) with next business day (NBD) advance hardware replacement and 90 day access to Cisco Technical Assistance Center (TAC) support
- Enhanced Cisco EnergyWise for operational cost optimization by measuring actual power consumption of the PoE devices, reporting, and reducing energy consumption across the network
- USB Type-A and Type-B ports for storage and console respectively
- Application visibility and capacity planning with integrated NetFlow Lite
- Hardware support for Secure Group Tagging (SGT), Secure Group Access Control lists (SGACL) and IEEE 802.1AE MACsec

Cisco Catalyst 2960-CX switches features:

- PoE+ and non-PoE models, 8 downlink ports, 1G SFP uplink port models
- Reduced power consumption and advanced energy management features
- USB Type-A and Type-B ports for storage and console respectively
- Application visibility and capacity planning with integrated NetFlow Lite
- Switch Hibernation Mode and Energy Efficient Ethernet (EEE) for lower energy costs
- Enhanced Limited Lifetime Warranty (E-LLW) with next business day (NBD) advance hardware replacement and 90 day access to Cisco Technical Assistance Center (TAC) support
- Enhanced Cisco EnergyWise for operational cost optimization by measuring actual power consumption of the PoE devices, reporting, and reducing energy consumption across the network

Service and Support

Information About Caveats

If you need information about a specific caveat that does not appear in these release notes, you can use the Cisco Bug Toolkit to find caveats of any severity. Click this URL to browse to the Bug Toolkit:

<http://tools.cisco.com/Support/BugToolKit/>

If you request a defect that cannot be displayed, the defect number might not exist, the defect might not yet have a customer-visible description, or the defect might be marked Cisco Confidential.

Troubleshooting

For the most up-to-date, detailed troubleshooting information, see the Cisco TAC website at this URL:

<http://www.cisco.com/en/US/support/index.html>

Click **Product Support** > **Switches**. Choose your product and click **Troubleshooting** to find information on the problem you are experiencing.

Limitations and Restrictions

- When a logging discriminator is configured and applied to a device, memory leak is seen under heavy syslog or debug output. The rate of the leak is dependent on the quantity of logs produced. In extreme cases, the device may crash. As a workaround, disable the logging discriminator on the device.
- Standalone web-based authentication fails if the switch port is configured without any port ACL. (CSCuu91975)

Caveats

- [Cisco Bug Search Tool, page 8](#)
- [Open Caveats, page 8](#)
- [Caveats Resolved in Cisco IOS Release 15.2\(3\)E3, page 9](#)
- [Caveats Resolved in Cisco IOS Release 15.2\(3\)E3, page 9](#)
- [Caveats Resolved in Cisco IOS Release 15.2\(3\)E1, page 9](#)

Cisco Bug Search Tool

The Bug Search Tool (BST), which is the online successor to Bug Toolkit, is designed to improve the effectiveness in network risk management and device troubleshooting. The BST allows partners and customers to search for software bugs based on product, release, and keyword, and aggregates key data such as bug details, product, and version. The tool has a provision to filter bugs based on credentials to provide external and internal bug views for the search input.

To view the details of a caveat listed in this document:

1. Access the BST (use your Cisco user ID and password) at <https://tools.cisco.com/bugsearch/>.
2. Enter the bug ID in the **Search For:** field.

Open Caveats

Bug ID	Headline
CSCur64922	TDR shows impedance mismatch for link between Gigabit and Multigigabit ports
CSCus80592	TDR fault detection is not working for Multigigabit ports on Catalyst 3560CX-8XPD-S

Caveats Resolved in Cisco IOS Release 15.2(3)E3

Bug ID	Headline
CSCut21950	3560 / RBAC / Unable to exclude enable command.
CSCuu16044	3750 - Not Processing LACP PDUs if Native VLAN is not created
CSCuu50798	"%Invalid input detected" display when system booting up on 15.2(3)E1
CSCuu92224	2960X - EPM vlan plugin crash
CSCuu97550	4500X - SNMP dot1dTpFdbPort retuning incorrect value
CSCuv05123	c3560e/v151_sy_throttle platform doesn't store NTP drift values properly
CSCuv32909	3560X crash occurred with %BIT-4-OUTOFRANGE message after doing show run
CSCuv50743	MAC stuck on 'PRE Event Handling' - needs reload for recover
CSCuw17699	Switch crashes with Data TLB Miss Exception
CSCuw28638	3650 Rebooting during EAP-TLS authentication
CSCuw39020	access-session vlan-assignment ignore-errors breaks dynamic vlan assign
CSCuw44957	Cat3560X:some fragmented packets drop
CSCuw71607	Switch crashed at HLFM aging process
CSCuw71809	There is no warning message when the C3K configures "ip tcp adjust-mss"

Caveats Resolved in Cisco IOS Release 15.2(3)E2

There are no caveats to list here.

Caveats Resolved in Cisco IOS Release 15.2(3)E1

Bug ID	Headline
CSCup85197	TDR not supported at 10 and 100Mbps

Related Documentation

- Catalyst 3560-CX and Catalyst 2960-CX switch documentation at these URLs:
<http://www.cisco.com/c/en/us/support/switches/catalyst-2960-cx-series-switches/tsd-products-support-series-home.html>
<http://www.cisco.com/c/en/us/support/switches/catalyst-3560-cx-series-switches/tsd-products-support-series-home.html>
- Cisco SFP and SFP+ modules documentation, including compatibility matrices at this URL:

http://www.cisco.com/en/US/products/hw/modules/ps5455/tsd_products_support_series_home.html

- Cisco Validated Designs documents at this URL:

<http://www.cisco.com/go/designzone>

Obtain Documentation and Submit a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation*.

To receive new and revised Cisco technical content directly to your desktop, you can subscribe to the [What's New in Cisco Product Documentation RSS feed](#). The RSS feeds are a free service.

This document is to be used in conjunction with the documents listed in the “[Related Documentation](#)” section.

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