Release Notes for Cisco Catalyst IE9300 Rugged Series Switches, and Cisco Catalyst ESS9300 Embedded Series Switch, Cisco IOS XE 17.15.x

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Information about Cisco Catalyst IE9300 Rugged Series Switch

This document provides release information for the following Catalyst IE switches:

- Cisco Catalyst IE9310 GE Fiber switch
- Cisco Catalyst IE9320 GE Fiber switch
- Cisco Catalyst IE9320 Fiber switch with 10 GE uplinks
- Cisco Catalyst IE9320 10 GE Copper Data switch
- Cisco Catalyst IE9320 10 GE PoE switch
- Cisco Catalyst IE9320 10 G mGig 4PPoE switch
- Cisco Catalyst IE9320 GE PoE switch

Cisco Catalyst IE9300 Rugged Series Switches provide rugged and secure switching infrastructure for harsh environments. They are suitable for industrial Ethernet applications, including manufacturing, utility substations, intelligent transportation systems (ITSs), rail transportation, and other similar deployments.

The switch fulfills the need for a high-density SFP, RJ-45, and Power over Ethernet (PoE) rack- or wall-mounted switch that can function as a software-defined access (SD-Access) fabric edge. It provides end-to-end architectural uniformity in the Cisco Catalyst Center for Internet of Things (IoT) connected communities and extended enterprises.

In industrial environments, the switch can be connected to any Ethernet-enabled industrial communication devices. These devices include programmable logic controllers (PLCs), human-machine interfaces (HMIs), drives, sensors, and input and output (I/O) devices.

New Features in Release 17.15.x

There are no new features in Cisco IOS XE 17.15.6. It is a maintenance release.

There are no new features in Cisco IOS XE 17.15.5. It is a maintenance release.

There are no new features in Cisco IOS XE 17.15.4. It is a maintenance release.

There are no new features in Cisco IOS XE 17.15.3. It is a maintenance release.

There are no new features in Cisco IOS XE 17.15.2. It is a maintenance release.

There are no new features in Cisco IOS XE 17.15.1. It is a maintenance release.

Behaviour Changes

CSDL issue

From 17.15.1 release, application signature verification is performed by default for all applications during installation. Only Cisco-signed applications can be installed after verification. Unsigned applications will not be allowed to install.

Note: If unsigned applications were installed on your system before upgrading to version 17.15.1, they will continue to function after the upgrade. However, if you uninstall an unsigned application and try to reinstall it, the signature verification will fail.

To install unsigned applications, disable signature verification manually by using the **app-hosting verification disable** command, as shown in the example here:

```
Device# app-hosting verification disable
```

Use the **show app-hosting infra** command to verify Application signature verification, as shown in the example here:

```
Device# show app-hosting infra
IOX version: 2.11.0.2
App signature verification: disabled
CAF Health: Stable
```



Note Unsigned applications are third-party applications built by customers or users.

Important Notes

Cisco Catalyst ESS9300 Embedded Series Switch: Upgrade to Latest Boot Software

If you have a Cisco Catalyst ESS9300 Embedded Series Switch, you must upgrade it to the latest version of ROM monitor software (ROMMON).

The upgrade is to accommodate the larger size of Cisco Catalyst IOS XE 17.13.1 caused by enhancements. If you do not upgrade, the switch may fail to boot.

Switch Model Numbers

Cisco Catalyst IE9300 Rugged Series Switches

The following table lists the supported IE9300 series hardware models and the default license levels that they are delivered with.

Model Number	Default License Level	Stacking Support	Description
IE-9310-26S2C-A	Network Advantage	No	• *Total ports*: 28 • *SFP uplinks*: 4x 1 Gb SFP *SFP downlinks*: 22x 100M/1000M SFP, 2x 100M/1000M dual-media • *Power supplies*: Support for field-replaceable, redundant AC or DC power supplies
IE-9310-26S2C-E	Network Essentials		
IE-9320-26S2C-A	Network Advantage	Yes	• *Total ports*: 28 • *SFP uplinks*: 4x 1 Gb SFP *SFP downlinks*: 22x 100M/1000M SFP, 2x 100M/1000M dual-media • *Power supplies*: Support for field-replaceable, redundant AC or DC power supplies
IE-9320-26S2C-E	Network Essentials		
IE-9320-22S2C4X-A	Network Advantage	Yes	• *Total ports*: 28 • *SFP uplinks*: 4x 10 Gb SFP+ • *SFP downlinks*: 22x 1 Gb SFP, 2x 1-Gb Dual-media ports • *Power supplies*: Support for field-replaceable, redundant AC or DC power supplies
IE-9320-22S2C4X-E	Network Essentials		

Model Number	Default License Level	Stacking Support	Description
IE-9320-24T4X-A	Network Advantage	Yes	• *Total ports*: 28 • *SFP uplinks*: 4x 10 Gb SFP+ • *Copper downlinks*: 24x 1 Gb RJ45 • *Power supplies*: Support for field-replaceable, redundant AC or DC power supplies.
IE-9320-24T4X-E	Network Essentials		
IE-9320-24P4X-A	Network Advantage	Yes	• *Total ports*: 28 • *SFP uplinks*: 4x 10 Gb SFP+ • *Copper downlinks*: 24x 1 Gb RJ45 PoE+ • *Power supplies*: Support for field-replaceable, redundant AC or DC power supplies
IE-9320-24P4X-E	Network Essentials		
IE-9320-16P8U4X-A	Network Advantage	Yes	• *Total ports*: 28 • *SFP uplinks*: 4x 10 Gb SFP • *Copper downlinks*: 16 ports 1 Gb RJ45 PoE+, 8 ports 2.5 Gb RJ45 4PPoE (90W/port) • *Power supplies*: Support for field-replaceable, redundant AC or DC power supplies
IE-9320-16P8U4X-E	Network Essentials		

Model Number	Default License Level	Stacking Support	Description
IE-9320-24P4S-A	Network Advantage	Yes	• *Total ports*: 28 • *SFP uplinks*: 4x 1Gb SFP • *Copper downlinks*: 24 ports 1 Gb RJ45 PoE+ • *Power supplies*: Support for field-replaceable, redundant AC or DC power supplies
IE-9320-24P4S-E	Network Essentials		

All Cisco Catalyst IE9300 Rugged Series Switches have 4 GB of DRAM, four alarm inputs, and one alarm output. Other I/O interfaces include the following:

- SD cards slot
- Power input
- RJ-45 (RS-232) console
- Micro-USB console
- USB-A host port



Note Documentation sometimes uses the following terms:

- IE9310 GE Fiber switch when referring to both IE-9310-26S2C-A and IE-9310-26S2C-E switches
- IE9320 GE Fiber switch when referring to both IE-9320-26S2C-A and IE-9320-26S2C-E switches
- IE9320 Fiber switch with 10 GE uplinks when referring to both IE-9320-22S2C4X-A and IE-9320-22S2C4X-E switches
- IE9320 10 GE Copper Data switch when referring to both IE-9320-24T4X-A and IE-9320-24T4X-E switches
- IE9320 10 GE PoE switch when referring to both IE-9320-24P4X-A and IE-9320-24P4X-E
- IE9320 10 G mGig 4PPoE switch when referring to both IE-9320-16P8U4X-A and IE-9320-16P8U4X-E
- IE9320 GE PoE switch when referring to both IE-9320-24P4S-A and IE-9320-24P4S-E

Starting with release 17.10.1, both the Network Essentials license and the Network Advantage license are available. The features available in the two licenses follow the IE9300 series, with the exception of MACsec-256.

Network Advantage License	Description
Security	MACsec-256
Routing	Layer 3 routing support

Upgrading the Switch Software

This section covers the various aspects of upgrading or downgrading the device software.



Note See the Cisco IOS XE Migration Guide for IIoT Switches for the latest information about upgrading and downgrading switch software.

SSH Algorithms for Common Criteria Certification Limitation

Starting with Cisco IOS XE Release 17.10, the following Key Exchange and MAC algorithms are removed from the default list:

- Key Exchange algorithm:
  - diffie-hellman-group14-sha1
- MAC algorithms:
  - hmac-sha1
  - hmac-sha2-256
  - hmac-sha2-512



Note You can use the **ip ssh server algorithm kex** command to configure the Key Exchange algorithm and the **ip ssh server algorithm mac** command to configure the MAC algorithms.

Finding the Software Version

The package files for Cisco IOS XE software can be found on the system board's internal flash memory device (flash:) or an external USB, depending on the device configuration.

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 names and versions of other software images that you might have stored in flash memory.

Software Images for Cisco IOS XE 17.15.x

The following table provides the filename for the IOS XE 17.15.x software image for Cisco Catalyst IE9300 Rugged Series Switches.

Release	Image Type	Filename	Switch Models
Cisco IOS XE 17.15.6	Universal	ie9k_iosxe.17.15.06.SPA.bin	Cisco Catalyst IE9300 Rugged Series Switches
Cisco IOS XE 17.15.5	Universal	ie9k_iosxe.17.15.05.SPA.bin	Cisco Catalyst IE9300 Rugged Series Switches
Cisco IOS XE 17.15.4	Universal	ie9k_iosxe.17.15.04.SPA.bin	Cisco Catalyst IE9300 Rugged Series Switches
Cisco IOS XE 17.15.3	Universal	ie9k_iosxe.17.15.03.SPA.bin	Cisco Catalyst IE9300 Rugged Series Switches
Cisco IOS XE 17.15.2	Universal	ie9k_iosxe.17.15.02.SPA.bin	Cisco Catalyst IE9300 Rugged Series Switches
Cisco IOS XE 17.15.1	Universal	ie9k_iosxe.17.15.01.SPA.bin	Cisco Catalyst IE9300 Rugged Series Switches

The following table provides the filename for the IOS XE 17.15.x software image for the Cisco Catalyst ESS9300 Embedded Series Switch.

Release	Image Type	Filename	Switch Models
Cisco IOS XE 17.15.6	Universal	ie9k_iosxe.17.15.06.SPA.bin	Cisco Catalyst ESS9300 Embedded Series Switch
Cisco IOS XE 17.15.5	Universal	ie9k_iosxe.17.15.05.SPA.bin	Cisco Catalyst ESS9300 Embedded Series Switch
Cisco IOS XE 17.15.4	Universal	ie9k_iosxe.17.15.04.SPA.bin	Cisco Catalyst ESS9300 Embedded Series Switch
Cisco IOS XE 17.15.3	Universal	ie9k_iosxe.17.15.03.SPA.bin	Cisco Catalyst ESS9300 Embedded Series Switch
Cisco IOS XE 17.15.2	Universal	ie9k_iosxe.17.15.02.SPA.bin	Cisco Catalyst ESS9300 Embedded Series Switch
Cisco IOS XE 17.15.1	Universal	ie9k_iosxe.17.15.01.SPA.bin	Cisco Catalyst ESS9300 Embedded Series Switch

Software Installation Options

The following table lists the options for the **install** command for Cisco Catalyst IE9300 Rugged Series Switches.

To install and activate the specified file, and to commit changes to be persistent across reloads, enter the following command: **install add file** *filename* [**activate commit**]

Option	Description
abort	Abort the current install operation.
activate	Activate an installed package.
add	Install a package file to the system.
auto-abort-timer	Install auto-abort-timer.
autoupgrade	Initiate software auto-upgrade on all incompatible switches.
commit	Commit the changes to the load path.
deactivate	Deactivate an install package.
label	Add a label name to any installation point.
remove	Remove installed packages.
rollback	Rollback to a previous installation point.

Licensing

For information about the licensing packages for features available on Cisco Catalyst IE9300 Rugged Series Switches and Cisco Catalyst ESS9300 Embedded Series Switch, see Licensing on the Cisco Catalyst IE9300 Series Switches.

Caveats

Caveats describe unexpected behavior in Cisco IOS XE releases.

Open Caveats in Cisco IOS XE 17.15.x

Identifier	Description
CSCwp65194	Incomplete SNMPWALK of entSensorValue data retrieval for SFP modules on IE-9320-26S2C-A switches
CSCwu29126	IE9300 - ALT port failing to block traffic, causing network loops in REP ring
CSCwt45804	Mem leaks in timingd, followed by crash with unsupported PTP over Port channel configured on ie9k
CSCws96537	IE9300: poe not working on member switch reload when non-poe is Active

Resolved Caveats in Cisco IOS XE 17.15.6

No customer-impacting bugs were fixed in this release.

Resolved Caveats in Cisco IOS XE 17.15.5

Identifier	Description
CSCwr60436	On IE9k switches, the Dying-Gasp SNMP trap is not sent over loopback interface after a reboot.
CSCws48556	Follow-up meessage stops transmitting from IE93xx
CSCwr72487	SFP status behaviour change from SNMP_ADMIN_NOT_PRESENT to SNMP_ADMIN_DOWN when Profinet disabl.
CSCws18675	IE-9310-26S2C: Express setup LED glows amber
CSCwq85911	REP Interface broadcast unicast traffic to all the interface in the same vlan
CSCwr78633	100mb SFP not in sync with 1g SFP.
CSCwp22300	IE-9320-22S2C4X: show ptp lan clock is not updating with gnss time clock.
CSCws05823	Port VlanID is missing from show ptp lan port on changing native vlan configuration.

Resolved Caveats in Cisco IOS XE 17.15.4

Identifier	Description
CSCwo25497	Two GM follow_up messages is not sending properly from IE9300
CSCwp24892	IE9320 PTP BC invalid currentOffset

Resolved Caveats in Cisco IOS XE 17.15.3

Identifier	Description
CSCwm64394	IE9K cisco-ie-global macro contains commands which are not compatible with the switch

Resolved Caveats in Cisco IOS XE 17.15.2

Identifier	Description
CSCwk80517	IE9300: TC stops forwarding PTP sync or followup messages during BMCA.
CSCwm50612	IE9300/IE3100: SNMP ifOperStatus MIB incorrectly reporting port-channel interface down.
CSCwk53164	IE9300: Express setup LED glows amber.

Identifier	Description
CSCwm63597	IE9320:Port LED color changed to AMBER with PRP channel shutdown or no shutdown.
CSCwm73744	Packet priority incorrect in TC mode.
CSCwm73805	Two GM switching is not working for announce packets with 2packets/sec and 4packets/seconds.
CSCwk78071	Autoinstall via dhcp option 125 install mode not working on IE9300 device.

Resolved Caveats in Cisco IOS XE 17.15.1

Identifier	Description
CSCwi45987	Wrong data in origintimestamp field of the sync packet when Power TC is enabled with GM is 1-step.
CSCwi36189	IE9300 - Parent change PTP alarm is being observed in transparent clock mode.
CSCwj07119	IE9300 DATACORRUPTION-DATAINCONSISTENCY Logs and Crashes with SNMPv3 Dying-gasp Configuration.

Troubleshooting

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

https://www.cisco.com/en/US/support/index.html

Go to **Product Support** and select your product from the list or enter the name of your product. Look under Troubleshoot and Alerts to find information for the problem that you are experiencing.

Related Documentation

For more information about Cisco IOS XE, see the https://www.cisco.com/c/en/us/products/ios-nx-os-software/ios-xe/index.html.

For more information about Cisco Catalyst IE9300 Rugged Series Switches, see the https://www.cisco.com/c/en/us/support/switches/catalyst-ie9300-rugged-series/series.html

For more information on Cisco Validated Designs, see the https://www.cisco.com/go/designzone

To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: https://www.cisco.com/go/mibs.

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