Release Notes for Cisco Catalyst IE9300 Rugged Series Switches, Release 26.1.x

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Cisco Catalyst IE9300 Rugged Series Switches, Release 26.1.x

This document provides release information for the following Cisco 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 IE9310 GE mixed port switch

Cisco Catalyst IE9300 Rugged Series 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 fAccess (SDA) 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.

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

New software features

This section provides a brief description of the new software features introduced in Cisco IOS XE 26.1.x release.

IOS XE 26.1.2

There are no new software features in this release.

IOS XE 26.1.1

Table 1. New software features in Cisco IOS XE Release 26.1.1

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Product Impact	Feature	Description
Security	Resilient Infrastructure	As part of the ongoing commitment to network security, this Cisco IOS XE release introduces secure alternatives to legacy commands. These updates are designed to mitigate potential risks and assist in establishing a more robust and secure operational baseline. The identified insecure commands are categorized as: ▪ Line transport: Updates to secure remote access methods. ▪ Device server configuration: Hardening of server-side settings. ▪ File transfer protocols: Transitioning to encrypted transfer methods. ▪ SNMP: Enhancements to secure management traffic. ▪ Passwords: Strengthening authentication and credential management. ▪ Miscellaneous: General security improvements for various system functions. The **show system insecure configuration** command introduced in Cisco IOS XE release 17.18.2 lists all insecure commands configured on the device. For all detected insecure configurations during device boot or upgrade, error messages are displayed. In Cisco IOS XE release 26.1.1, all insecure CLI commands are blocked by default to strengthen your network infrastructure. If your environment requires the use of a legacy command, you must enable the **system mode insecure** command in global configuration mode. ▪ Recommendation: Do not use insecure mode. This mode is temporary and will be removed in a future Cisco IOS XE release. Identify and replace all insecure commands with their secure alternatives. ▪ Upgrade behavior: If you upgrade to Cisco IOS XE release 26.1.1 with insecure commands already present in the running configuration, the **system mode insecure** command is automatically added to your configuration to prevent service disruption. For more information, refer to Resilient Infrastructure IOS XE Security Warnings Reference
Upgrade	PTP over stack	This feature enables PTP for your stacked Cisco IE9300 Rugged Series switches so they function as a unified network entity. You receive consistent, synchronized timing across the stack, making network management simpler and ensuring precise timekeeping for your critical applications.
	Media Redundancy Client	This feature enables configuring Cisco switches as Media Redundancy Clients (MRC) within an MRP ring, acting as regular ring participants that forward traffic and continuously monitor link status, reporting any failures to the ring manager (MRM). This approach enhances network resiliency and simplifies deployment, supporting rapid failover and compliance with industrial certification requirements.
Ease of use and Ease of setup	REP Segment-ID auto discovery	REP Segment-ID Auto Discovery automates the configuration of Resilient Ethernet Protocol (REP) Segment IDs using CDP. This feature reduces manual effort and prevents mismatches for both standard REP and REP Fast protocols, making it easier to add switches to existing segments or create new daisy-chain segments.
Upgrade	PROFINET system redundancy	This feature enables Cisco Industrial Ethernet (IE) switches to interoperate with existing high-availability systems by providing robust controller failover using PROFINET S2 controller redundancy mode. It

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Product Impact	Feature	Description
		aims to minimize potential issues and downtime in the event of network or controller failures.
Software Reliability	Read-only PROFINET	This feature enhances device security and network flexibility by setting Discovery and Configuration Protocol (DCP) operations to read-only mode. It safeguards the IP address, gateway, and device name from modifications, protects essential network settings to prevent unexpected connectivity loss, and remains compatible with LLDP, SNMP, and CDP. Additionally, it enables devices to carry out identification and basic network discovery.

New hardware features

This section provides a brief description of the new hardware features introduced in Cisco IOS XE 26.1.x release.

IOS XE 26.1.2

There are no new hardware features in this release.

IOS XE 26.1.1

There are no new hardware features in this release.

Change in behavior

Syslog warning on reload for SSH Hostkeys

After a device reload, a syslog warning may appear indicating insufficient key length, even when a strong RSA or EC key is already configured.

Note:

- If the syslog warning message displays ***crypto key generate rsa modulus <modulus-size> label <label-name>***, then the *<modulus-size>* and *<label-name>* represent the actual modulus size and label configured on the device.
- The SSH keypair association configuration is done using the command: **ip ssh ec|rsa <**keypair-name**>**, where *<keypair-name>* corresponds to the keypair name configured on the device.

Example warnings:

RSA

Warning Observed: INSECURE DYNAMIC WARNING - Module: SSH.

Command: crypto key generate rsa modulus <modulus-size> label <label-name>.

Reason: An SSH hostkey has been provisioned on the device with insufficient key length.

Remediation: Provision an SSH RSA hostkey with minimum modulus size of 3072 bits for enhanced security.

Sub mode: exec.

Parent CLI: Not Applicable.

EC

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Warning Observed: INSECURE DYNAMIC WARNING - Module: SSH.

Command: crypto key generate ec keysize <modulus-size> label <label-name>.

Reason: An SSH hostkey has been provisioned on the device with insufficient key length.

Remediation: Provision an SSH hostkey with minimum modulus size of 256 bits for enhanced security.

Sub mode: exec.

Parent CLI: Not Applicable.

If you have already configured a strong key and associated it using **ip ssh ec|rsa <keypair-name>**, you can ignore this warning during boot. The configured SSH keypair association is applied after the boot process, and SSH then uses the correct key for secure connections once the configuration is active.

Alarm relay polarity changes

Starting with Cisco IOS XE Release 26.1.1, the **alarm relay-mode** command aligns the positive and negative relay states with the polarity of the physical alarm output pins. This behavior differs from earlier releases. After an upgrade, verify the alarm relay configuration and external wiring to ensure that alarm and no-alarm conditions operate as expected.

Example: Switch# **show alarm settings | in alarm relay mode**

Alarm relay mode: Positive

Resolved issues

This section lists resolved issues in Cisco IOS XE 26.1.x release.

Note: This software release may contain bug fixes first introduced in other releases. To see additional information, click the bug ID to access the Cisco Bug Search Tool.

IOS XE 26.1.2

Table 2. Resolved issues in release 26.1.2

Bug ID	Description
CSCwu78398	%ILPOWER-5-IEEE_DISCONNECT: Interface Gi1/0/23: PD removed
CSCwu29126	IE9300 - ALT port failing to block traffic, causing network loops in REP ring
CSCwt64311	IE9K/IE3505: Padding is not working correctly with vlan tag when PRP is enabled

IOS XE 26.1.1

Table 3. Resolved issues in release 26.1.1

Bug ID	Description
CSCwp22300	IE-9320-22S2C4X: show ptp lan clock is not updating with gnss time clock
CSCwp24892	IE9320 PTP BC invalid currentOffset

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Bug ID	Description
CSCwp65194	Incomplete SNMPWALK of entSensorValue data retrieval for SFP modules on IE-9320-26S2C-A switches
CSCwq85911	REP Interface broadcast unicast traffic to all the interface in the same vlan
CSCws05823	Port VlanID is missing from show ptp lan port on changing native vlan configuration
CSCws48556	Follow-up message stops transmitting from IE93xx
CSCwr60436	On IE9k switches, the Dying-Gasp SNMP trap is not sent over loopback interface after a reboot.
CSCwr72487	SFP status behavior change from SNMP_ADMIN_NOT_PRESENT to SNMP_ADMIN_DOWN when Profinet disable
CSCws18675	IE-9310-26S2C: Express setup LED glows amber
CSCwr77016	Cisco IOS XE Software for Cisco Catalyst and Rugged Series Switches Secure Boot Bypass Vulnerability
CSCwj74266	IE9K/IE3500: Alarm relay-mode states not consistent with output alarm pins' polarity

Open issues

This section lists open issues in Cisco IOS XE 26.1.x release.

Note: This software release may contain open bugs first identified in other releases. To see additional information, click the bug ID to access the Cisco Bug Search Tool.

IOS XE 26.1.2

No customer-impacting bugs were identified in this release.

IOS XE 26.1.1

Table 4. Open issues in release 26.1.1

Bug ID	Description
CSCwt94316	IE3505 L2NAT - inside/private communication failing
CSCwu29126	IE9300 - ALT port failing to block traffic, causing network loops in REP ring

Known issues

This section lists known issues in Cisco IOS XE Release 26.1.x

IOS XE 26.1.2

There are no known issues in this release.

IOS XE 26.1.1

There are no known issues in this release.

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Compatibility

Refer to the Cisco IOS XE Migration Guide for IIoT Switches for the latest information about upgrading and downgrading switch software for Cisco Catalyst IE9300 Rugged Series Switches.

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: 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.

Supported hardware

This section lists supported hardware information.

This table lists the supported hardware models for Cisco Catalyst IE9300 Rugged Series Switches 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	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-9310-16P8S4X-E	Network Essentials	No	• Total ports: 28 • PoE+ ports: 16 ports 10/100/1000M • SFP downlinks: 8 ports 100/1000M • SFP uplinks: 4 ports 1/10G • Power supplies: Support for field-replaceable, redundant AC or DC power supplies
IE-9310-16P8S4X-A	Network Advantage	No	• Total ports: 28 • PoE+ ports: 16 ports 10/100/1000M • SFP downlinks: 8 ports 100/1000M • SFP uplinks: 4 ports 1/10G

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Model Number	Default License Level	Stacking Support	Description
			• Power supplies: Support for field-replaceable, redundant AC or DC power supplies
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	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-9320-22S2C4X-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	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-9320-24T4X-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	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-9320-24P4X-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	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-9320-16P8U4X-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)

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Model Number	Default License Level	Stacking Support	Description
			• Power supplies: Support for field-replaceable, redundant AC or DC power supplies
IE-9320-16P8U4X-E	Network Essentials	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-9320-24P4S-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	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

Note: Documentation sometimes uses these 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
- IE9310 GE mixed port when referring to 9310-16P8S4x

Network Essentials and Network Advantage licenses are available for Cisco Catalyst IE9300 Rugged Series Switch starting with release 17.10.1. The features available in the two licenses follow the IE9300 series, except for MACsec-256.

Network advantage license	Description
Security	MACsec-256
Routing	Layer 3 routing support.

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Supported software packages

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 platform configuration.
- Use the **show version** privileged EXEC command to display the software version running on the switch. The model name displayed at the end of the output reflects the factory configuration and does not change after software license upgrades.
- Use the **dir filesystem:** privileged EXEC command to view the names and versions of software images stored in flash memory.

Software images for Cisco IOS XE 26.1.x

This table provides the filename for the Cisco IOS XE 26.1.x release software image for Cisco Catalyst IE9300 Rugged Series Switches.

Table 5. Software packages for Cisco IOS XE Release 26.1.x

Release	Image type	Filename	Switch Models
Cisco IOS XE 26.1.2	Universal	ie9k_iosxe.26.01.02.SPA.bin	Cisco Catalyst IE9300 Rugged Series Switches
Cisco IOS XE 26.1.1	Universal	ie9k_iosxe.26.01.01.SPA.bin	Cisco Catalyst IE9300 Rugged Series Switches

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

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

Table 6. Summary of software installation commands for install mode

Command	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.
auto-upgrade	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.

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Related resources

Table 7. Additional references for Cisco IOS XE IE9300 Rugged Series Switches

Document	Description
Cisco IOS XE	Provides information about Cisco IOS XE.
Cisco Validated Designs	Provides information about Cisco Validated Designs.
Cisco MIB Locator	Provides locating and downloading MIBs.
Cisco Profile Manager	Provides timely and relevant information from Cisco.
Cisco Services	Provides the business outcomes and technical support services needed to maximize the value of your Cisco technologies.
Cisco Support	You can submit a service request here.
Cisco DevNet	To discover and browse secure, validated enterprise-class apps, products, solutions, and services.
Cisco Press	Provides general networking, training, and certification titles.
Cisco Warranty Finder	Provides warranty information for a specific product or product family.
Cisco Support Community	You can ask and answer questions, share suggestions, and collaborate with your peers.
Cisco TAC	Provides most up-to-date, detailed troubleshooting information. 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.
Cisco Feature Navigator	Provides platform support details and license level information for features.
Documentation Feedback	To provide feedback about Cisco technical documentation, use the feedback form available in the right pane of every online document.
Licenses	Provides information about the licensing packages for features.

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