

# Cisco Catalyst IE9300 Rugged Series

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# Contents

|                                    |    |
|------------------------------------|----|
| Product overview                   | 3  |
| Features and benefits              | 5  |
| Product specifications             | 6  |
| Ordering information               | 21 |
| Warranty                           | 23 |
| Cisco environmental sustainability | 23 |
| Cisco Services                     | 24 |
| Cisco Capital                      | 24 |
| For more information               | 24 |
| Document history                   | 25 |

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The Cisco Catalyst™ IE9300 Rugged Series ushers in mainstream adoption of Gigabit / 10 Gigabit Ethernet connectivity in compact 1RU, rack-mount switches that are purpose-built for a wide variety of industrial and extended enterprise applications.

## Product overview

Cisco Catalyst IE9300 Rugged Series switches with 28 ports of Gigabit and 10 Gigabit Ethernet interfaces deliver high-speed Ethernet connectivity in a compact form factor and are designed for a wide range of industrial applications for which hardened products are required. The platform is built to withstand harsh environments in manufacturing, energy, transportation, mining, smart cities, and oil and gas. The switches are ideal for outdoor enclosures or harsh environments while adhering to overall IT network design, compliance, and performance requirements.

These switches run Cisco IOS® XE, an operating system with built-in security and trust, featuring Secure Boot, image signing, and the Cisco® Trust Anchor module. Cisco IOS XE also provides API-driven configuration with open APIs and data models.

The Cisco Catalyst IE9300 Rugged Series can be managed with a powerful management tool, Cisco Catalyst Center, and can easily be set up with a completely redesigned user-friendly modern GUI tool called WebUI. The platform supports Full Flexible NetFlow (FNF) for real-time visibility into traffic patterns and threat analysis with support for Cisco Cyber Vision and Cisco Secure Network Analytics.

The Cisco IE9300 Rugged Series, by building a high-performance, reliable, and secure industrial network, provides the foundational infrastructure that transports and protects the massive amounts of data required for software-defined automation and Industrial AI applications to function effectively and deliver actionable insights for operations.

The IE9300 Rugged Series switches offer:

- Robust resiliency enabled by features such as dual ring design, Resilient Ethernet Protocol (REP), Parallel Redundancy Protocol (PRP)<sup>1</sup>, PROFINET, Media Redundancy Protocol (MRP) ring, High Availability Seamless Redundancy (HSR)<sup>1</sup> ring, EtherChannel, integrated redundant power supplies, dying gasp, etc.
- True zero-touch replacement for middle-of-the-night or middle-of-nowhere failures
- Line-rate, low-latency forwarding
- Simplified software management
- Support for industrial automation protocols EtherNet/IP (CIP) and PROFINET

<sup>1</sup> Supported on IE-9320-26S2C, IE-9320-22S2C4X and IE-9310-16P8S4X only.



**Figure 1.**  
IE-9310-26S2C switch



**Figure 2.**  
IE-9320-26S2C switch with advanced feature set



**Figure 3.**  
IE-9320-22S2C4X Switch with conformal coating and advanced feature set, including support for GPS/IRIG-B input



**Figure 4.**  
IE-9320-24P4S Switch



**Figure 5.**  
IE-9320-24T4X Switch



**Figure 6.**  
IE-9320-24P4X Switch



**Figure 7.**  
IE-9320-16P8U4X Switch with multi-gigabit and 4PPoE



**Figure 8.**  
IE-9310-16P8S4X Switch with GE SFP and GE RJ-45 downlinks and 4x 1/10G SFP+ uplinks

## Features and benefits

**Table 1.** Features and benefits

| Feature  | Benefits   |
|--|--|
| <b>Robust industrial design</b>                                  | <ul style="list-style-type: none"><li>• A utility-grade, fully managed 1-Rack-Unit (1RU) rack-mount Ethernet switch</li><li>• Built for harsh environments and temperature ranges (-40° to 75° C / -40° to 167° F)</li><li>• Fanless, convection-cooled with no moving parts for extended durability</li><li>• Hardened for vibration, shock and surge, and electrical noise immunity</li><li>• Complies with multi-industry specifications for automation, Intelligent Transport Systems (ITS), and substation environments</li><li>• Improves the uptime, performance, and safety of industrial systems and equipment</li><li>• IEEE 1588v2 Precision Timing Protocol (PTP) (both power profile for utility and default profile for manufacturing are supported)</li><li>• Alarm I/O for monitoring and signaling to external equipment</li></ul>  |
| <b>High density Ethernet switch with GE / mGig / 10G options</b> | <ul style="list-style-type: none"><li>• Total of 28 Ethernet ports provide multiple resilient design options</li><li>• Provides secure access for new high-speed applications in the industrial space</li><li>• Enables new UHD IP cameras, Wi-Fi access points, and future-ready Gigabit speed automation devices</li><li>• Allows IP-based Supervisory Control And Data Acquisition (SCADA) connectivity</li><li>• Delivers multiple rings, redundant ring topology for new network configurations</li><li>• Extends geographical scalability where connectivity over longer distances is required</li></ul>   |
| <b>High-density industrial Power over Ethernet (PoE)</b>         | <ul style="list-style-type: none"><li>• Support for up to 24 Ports of Power over Ethernet with 802.3af, 802.3at and 802.3bt options</li><li>• Controls costs by limiting wiring, distribution panels, and circuit breakers</li><li>• Reduces equipment needs, thus requiring less space and reducing heat dissipation.</li><li>• Enables ready-to-use high-power PoE devices, such as IP phones, next-generation PTZ cameras, and Wi-Fi 6 wireless access points.</li><li>• PoE Power budget of up to 720W with two 400W power supplies on PoE variants with 10G uplinks</li><li>• Perpetual PoE Support: With Perpetual PoE, the PoE power is maintained during a switch reload. This is important for IoT endpoints such as PoE-powered lights, so that there is no disruption during switch reboot.</li><li>• Fast PoE Support: When power is restored to a switch, PoE starts delivering power to endpoints without waiting for the operating system to fully load, thereby speeding up the time for the endpoint to start up.</li></ul> |
| <b>User-friendly WebUI</b>                                       | <ul style="list-style-type: none"><li>• Allows for easy configuration and monitoring, even by nonspecialist personnel</li><li>• Eliminates the need for more complex terminal emulation programs</li><li>• Reduces the cost of deployment</li></ul>  |
| <b>Full Flexible NetFlow (FNF)</b>                               | <ul style="list-style-type: none"><li>• Provides enhanced flow and threat visibility</li><li>• Enables optimization of the network infrastructure, reduces operating costs, and improves capacity planning and security incident detection</li></ul>   |

**Table 2.** Product feature sets

| Product family | Platforms supported  | Cisco IOS Software image (feature sets) supported |
|----------------|----------------------|---|
| IE9300         | IE-9310-26S2C-E/-A   | Network Essentials, Network Advantage             |
|                | IE-9320-26S2C-E/-A   | Network Essentials, Network Advantage             |
|                | IE-9320-22S2C4X-E/-A | Network Essentials, Network Advantage             |
|                | IE-9320-24P4S-E/-A   | Network Essentials, Network Advantage             |
|                | IE-9320-24T4X-E/-A   | Network Essentials, Network Advantage             |
|                | IE-9320-24P4X-E/-A   | Network Essentials, Network Advantage             |
|                | IE-9320-16P8U4X-E/-A | Network Essentials, Network Advantage             |
|                | IE-9310-16P8S4X-E/-A | Network Essentials, Network Advantage             |

## Product specifications

Table 3 highlights the hardware configuration for Cisco Catalyst IE9300 Rugged Series switches.

**Table 3.** Hardware configurations

| Product number    | Total ports | Downlinks  | Uplinks (SFP/SFP+) | Software license (default) |
|-------------------|-------------|--|--------------------|----------------------------|
| IE-9310-26S2C-E   | 28          | 22 ports 100/1000M SFP and 2 ports Dual-Media (100/1000M SFP or 10/100/1000M RJ45) | 4 ports 1000M      | Network Essentials         |
| IE-9310-26S2C-A   | 28          | 22 ports 100/1000M SFP and 2 ports Dual-Media (100/1000M SFP or 10/100/1000M RJ45) | 4 ports 1000M      | Network Advantage          |
| IE-9320-26S2C-E   | 28          | 22 ports 100/1000M SFP and 2 ports Dual-Media (100/1000M SFP or 10/100/1000M RJ45) | 4 ports 100/1000M  | Network Essentials         |
| IE-9320-26S2C-A   | 28          | 22 ports 100/1000M SFP and 2 ports Dual-Media (100/1000M SFP or 10/100/1000M RJ45) | 4 ports 100/1000M  | Network Advantage          |
| IE-9320-22S2C4X-E | 28          | 22 ports 100/1000M SFP and 2 ports Dual-Media (100/1000M SFP or 10/100/1000M RJ45) | 4 ports 1/10G      | Network Essentials         |
| IE-9320-22S2C4X-A | 28          | 22 ports 100/1000M SFP and 2 ports Dual-Media (100/1000M SFP or 10/100/1000M RJ45) | 4 ports 1/10G      | Network Advantage          |
| IE-9320-24P4S-E   | 28          | 24 ports 10/100/1000M RJ45 PoE+  | 4 ports 1000M      | Network Essentials         |
| IE-9320-24P4S-A   | 28          | 24 ports 10/100/1000M RJ45 PoE+  | 4 ports 1000M      | Network Advantage          |
| IE-9320-24T4X-E   | 28          | 24 ports 10/100/1000M RJ45   | 4 ports            | Network                    |

| Product number    | Total ports | Downlinks  | Uplinks (SFP/SFP+) | Software license (default) |
|-------------------|-------------|--|--------------------|----------------------------|
|                   |             |  | 1/10G              | Essentials                 |
| IE-9320-24T4X-A   | 28          | 24 ports 10/100/1000M RJ45   | 4 ports 1/10G      | Network Advantage          |
| IE-9320-24P4X-E   | 28          | 24 ports 10/100/1000M RJ45 PoE+  | 4 ports 1/10G      | Network Essentials         |
| IE-9320-24P4X-A   | 28          | 24 ports 10/100/1000M RJ45 PoE+  | 4 ports 1/10G      | Network Advantage          |
| IE-9320-16P8U4X-E | 28          | 16 ports 10/100/1000M PoE+ and 8 ports 100/1000/2500M 4PPoE (up to 90W/port) | 4 ports 1/10G      | Network Essentials         |
| IE-9320-16P8U4X-A | 28          | 16 ports 10/100/1000M PoE+ and 8 ports 100/1000/2500M 4PPoE (up to 90W/port) | 4 ports 1/10G      | Network Advantage          |
| IE-9310-16P8S4X-E | 28          | 16 ports 10/100/1000M PoE+ and 8 ports 100/1000M SFP                         | 4 ports 1/10G      | Network Essentials         |
| IE-9310-16P8S4X-A | 28          | 16 ports 10/100/1000M PoE+ and 8 ports 100/1000M SFP                         | 4 ports 1/10G      | Network Advantage          |

Tables 4 and 5 highlight the hardware specifications for the Cisco Catalyst IE9300 Rugged Series switches.

**Table 4.** Hardware specifications

| Hardware specification        | IE-9310-26S2C -E/-A   | IE-9320-26S2C -E/-A<br>IE-9320-22S2C4X-E/-A<br>IE-9320-24P4S-E/-A<br>IE-9320-24T4X-E/-A<br>IE-9320-24P4X-E/-A<br>IE-9320-16P8U4X-E/-A | IE-9310-16P8S4X -E/-A   |
|-------------------------------|---|---|---|
| <b>Hardware</b>               | 4-GB DRAM<br>8-GB onboard flash memory <sup>1</sup>                   | 4-GB DRAM<br>8-GB onboard flash memory <sup>1</sup>   | 8-GB DRAM<br>8-GB onboard flash memory <sup>1</sup>                   |
| <b>Removable storage</b>      | USB <sup>2,3</sup> , SD card <sup>2</sup>                             | USB <sup>2,3</sup> , SD card <sup>2</sup>   | USB <sup>2,3</sup> , SD card <sup>2</sup>                             |
| <b>Alarms</b>                 | 4 dry-contact alarm inputs<br>1 dry-contact Form-C relay alarm output | 4 dry-contact alarm inputs<br>1 dry-contact Form-C relay alarm output   | 4 dry-contact alarm inputs<br>1 dry-contact Form-C relay alarm output |
| <b>Console ports</b>          | 1 RS-232 (via RJ-45), 1 Micro USB                                     | 1 RS-232 (via RJ-45), 1 Micro USB   | 1 RS-232 (via RJ-45), 1 Micro USB                                     |
| <b>Power inputs</b>           | Dual AC/DC power inputs   | Dual AC/DC power inputs   | Dual AC/DC power inputs   |
| <b>Cisco StackWise® ports</b> | –   | 2 stacking ports  | –   |

<sup>1</sup> User-accessible flash memory is approximately 2.5 GB.

<sup>2</sup> The SD card and USB are optional and are not shipped by default with the switch.

<sup>3</sup> USB 2.0 to load system images and set configurations.

**Table 5.** Physical configurations

| Product number              | Dimensions (H x W x D)   | Weight <sup>1</sup>  | Mounting   | Power consumption <sup>2</sup> |
|-----------------------------|--|----------------------|------------|--------------------------------|
| <b>IE-9310-26S2C-E/-A</b>   | <ul style="list-style-type: none"><li>1.72 x 17.5 x 14.0 in. with PWR-RGD-AC-DC-H / PWR-RGD-LOW-DC-H</li></ul>   | 12.2 lb<br>(5.53 kg) | Rack mount | 61W                            |
| <b>IE-9320-26S2C-E/-A</b>   | <ul style="list-style-type: none"><li>1.72 x 17.5 x 14.0 in. with PWR-RGD-AC-DC-H / PWR-RGD-LOW-DC-H</li></ul>   | 12.2 lb<br>(5.53 kg) | Rack mount | 64W                            |
| <b>IE-9320-22S2C4X-E/-A</b> | <ul style="list-style-type: none"><li>1.72 x 17.5 x 14.0 in. with PWR-RGD-AC-DC-H / PWR-RGD-LOW-DC-H</li></ul>   | 12.7 lb<br>(5.76 kg) | Rack mount | 73W                            |
| <b>IE-9320-24P4S-E/-A</b>   | <ul style="list-style-type: none"><li>1.72 x 17.5 x 14.0 in. with PWR-RGD-AC-DC-H / PWR-RGD-LOW-DC-H</li><li>1.72 x 17.5 x 15.18 in. with PWR-RGD-AC-DC-250</li><li>1.72 x 17.5 x 15.57 in. with PWR-RGD-AC-DC-400</li></ul> | 9.7 lb<br>(4.4 kg)   | Rack mount | 37W                            |
| <b>IE-9320-24T4X-E/-A</b>   | <ul style="list-style-type: none"><li>1.72 x 17.5 x 14.0 in. with PWR-RGD-AC-DC-H / PWR-RGD-LOW-DC-H</li></ul>   | 9.5 lb<br>(4.3 kg)   | Rack mount | 35W                            |
| <b>IE-9320-24P4X-E/-A</b>   | <ul style="list-style-type: none"><li>1.72 x 17.5 x 14.0 in. with PWR-RGD-AC-DC-H / PWR-RGD-LOW-DC-H</li><li>1.72 x 17.5 x 15.18 in. with PWR-RGD-AC-DC-250</li><li>1.72 x 17.5 x 15.57 in. with PWR-RGD-AC-DC-400</li></ul> | 9.7 lb<br>(4.4 kg)   | Rack mount | 39W                            |



| Product number              | Dimensions (H x W x D)   | Weight <sup>1</sup>  | Mounting   | Power consumption <sup>2</sup> |
|-----------------------------|--|----------------------|------------|--------------------------------|
| <b>IE-9320-16P8U4X-E/-A</b> | <ul style="list-style-type: none"> <li>1.72 x 17.5 x 14.0 in. with PWR-RGD-AC-DC-H / PWR-RGD-LOW-DC-H</li> <li>1.72 x 17.5 x 15.18 in. with PWR-RGD-AC-DC-250</li> <li>1.72 x 17.5 x 15.57 in. with PWR-RGD-AC-DC-400</li> </ul> | 9.9 lb<br>(4.5 kg)   | Rack mount | 45W                            |
| <b>IE-9310-16P8S4X-E/-A</b> | <ul style="list-style-type: none"> <li>1.72 x 17.5 x 14.0 in. with PWR-RGD-AC-DC-H / PWR-RGD-LOW-DC-H</li> <li>1.72 x 17.5 x 15.18 in. with PWR-RGD-AC-DC-250</li> <li>1.72 x 17.5 x 15.57 in. with PWR-RGD-AC-DC-400</li> </ul> | 10.6 lb<br>(4.81 kg) | Rack mount | 105W                           |

<sup>1</sup> Chassis only (does not include power supplies or blank cover).

<sup>2</sup> System power consumption is indicative only and will depend on multiple factors:

- The type and number of Small Form-Factor Pluggable (SFP) modules used.
- The type and efficiency of the power supply used.
- The number of power supplies: One power supply versus two power supplies used in the system.

Table 6 highlights the performance and scalability features of the Cisco Catalyst IE9300 Rugged Series switches.

**Table 6.** Performance and scalability features

| Feature   | <b>IE-9310-26S2C - E/-A</b>                              | <b>IE-9320-26S2C - E/-A</b><br><b>IE-9320-24P4S-E/-A</b> | <b>IE-9320-22S2C4X-E/-A</b><br><b>IE-9320-24T4X-E/-A</b><br><b>IE-9320-24P4X-E/-A</b> | <b>IE-9320-16P8U4X-E/-A</b>                               | <b>IE-9310-16P8S4X-E/-A</b>                               |
|---|--|--|---|---|---|
| <b>Forwarding rate<sup>1</sup></b>                                | 41.66 Mpps   | 41.66 Mpps   | 95.23 Mpps  | 113.09 Mpps   | 95.23 Mpps  |
| <b>Forwarding Bandwidth</b>                                       | 28 Gbps  | 28 Gbps  | 64 Gbps   | 76 Gbps   | 64 Gbps   |
| <b>Switching bandwidth</b>  | 56 Gbps<br>(switching bandwidth is full-duplex capacity) | 56 Gbps<br>(switching bandwidth is full-duplex capacity) | 128 Gbps<br>(switching bandwidth is full-duplex capacity)                             | 152 Gbps<br>(switching bandwidth is full-duplex capacity) | 128 Gbps<br>(switching bandwidth is full-duplex capacity) |
| <b>Number of queues / port</b>                                    | 8 egress   | 8 egress   | 8 egress  | 8 egress  | 8 egress  |
| <b>Unicast MAC addresses</b>                                      | 24000  | 24000  | 24000   | 24000   | 24000   |
| <b>Internet Group Management Protocol (IGMP) multicast groups</b> | 1000   | 1000   | 1000  | 1000  | 1000  |

| Feature  | IE-9310-26S2C - E/-A | IE-9320-26S2C - E/-A<br>IE-9320-24P4S-E/-A | IE-9320-22S2C4X-E/-A<br>IE-9320-24T4X-E/-A<br>IE-9320-24P4X-E/-A | IE-9320-16P8U4X-E/-A | IE-9310-16P8S4X-E/-A |
|--|----------------------|--|--|----------------------|----------------------|
| <b>VLAN IDs</b>  | 4096                 | 4096                                       | 4096   | 4096                 | 4096                 |
| <b>Active VLANs</b>  | 1024                 | 1024                                       | 1024   | 1024                 | 1024                 |
| <b>IPv4 indirect routes</b>  | 7000                 | 7000                                       | 7000   | 7000                 | 7000                 |
| <b>IPv4 direct routes</b>  | 8192                 | 8192                                       | 8192   | 8192                 | 8192                 |
| <b>IPv6 indirect routes</b>  | 1522                 | 1522                                       | 1522   | 1522                 | 1522                 |
| <b>Spanning Tree Protocol (STP) instances</b>  | 128                  | 128  | 128  | 128                  | 128                  |
| <b>Access Control List (ACL) entries (port ACL [PACL], VLAN ACL [VACL], router ACL [RACL])</b> | 1536                 | 1536                                       | 1536   | 1536                 | 1536                 |
| <b>DRAM</b>  | 4 GB                 | 4 GB                                       | 4 GB   | 4 GB                 | 8 GB                 |
| <b>Flash (user accessible)</b>   | 2.5 GB               | 2.5 GB                                     | 2.5 GB   | 2.5 GB               | 2.5 GB               |
| <b>SD card capacity<sup>2</sup></b>  | 16 GB                | 16 GB                                      | 16 GB  | 16 GB                | 16 GB                |
| <b>SD Access Fabric Edge Support</b>   | Yes (32 VNs)         | Yes (32 VNs)                               | Yes (32 VNs)   | Yes (32 VNs)         | Yes (32 VNs)         |
| <b>SGT/DGT policies</b>  | 2000                 | 2000                                       | 2000   | 2000                 | 2000                 |
| <b>IPv4 to SGT binding</b>   | 10000                | 10000                                      | 10000  | 10000                | 10000                |
| <b>Maximum SVIs</b>  | 984                  | 984  | 984  | 984                  | 984                  |
| <b>SXP Sessions</b>  | 200                  | 200  | 200  | 200                  | 200                  |
| <b>GRE Tunnels</b>   | 10                   | 10   | 10   | 10                   | 10                   |
| <b>Number of Stack Members supported</b>   | -                    | 4  | 4  | 4                    | -                    |

<sup>1</sup> Measured with 64 byte packets

<sup>2</sup> The SD card is optional and is not shipped by default with the switch.

Table 7 highlights the power supply options for the Cisco Catalyst IE9300 Rugged Series switches.

**Table 7.** Power supply options<sup>1</sup>

| Product number           | Wattage | Rated nominal input operating range                    | Supported input voltage operating range | Use case scenario   |
|--------------------------|---------|--|---|---|
| <b>PWR-RGD-LOW-DC-H</b>  | 150W    | DC 24-60V/10A  | DC 18-75V                               | Low-voltage DC power source<br><br>Compliant for use in hazardous locations         |
| <b>PWR-RGD-AC-DC-H</b>   | 150Ws   | AC 100-240V/2.0A<br>50-60 Hz<br>or<br>DC 100-250V/2.0A | AC 85-264V<br>or<br>DC 88-300V          | High-voltage AC or DC power source.<br><br>Compliant for use in hazardous locations |
| <b>PWR-RGD-AC-DC-250</b> | 250W    | AC 100-240V 3.3A<br>50-60 Hz<br>or<br>DC 100-250V 3.3A | AC 85-264V<br>or<br>DC 88-300V          | High-voltage AC or DC power source<br><br>Compliant for use in hazardous locations  |
| <b>PWR-RGD-AC-DC-400</b> | 400W    | AC 100-240V 3.3A<br>50-60 Hz<br>or<br>DC 100-250V 3.3A | AC 85-264V<br>or<br>DC 88-300V          | High-voltage AC or DC power source<br><br>Compliant for use in hazardous locations  |

<sup>1</sup> All power supplies have their power output galvanically isolated from the power input.

Table 8 highlights the PoE capability of the Cisco Catalyst IE9300 Rugged Series switches.

**Table 8.** Available power<sup>1</sup> budget for PoE/PoE+ with different power supply wattage

| Product number                          | 150W | 150W (dual) | 250W | 250W + 150W | 250W (dual) | 400W | 400W (dual) |
|---|------|-------------|------|-------------|-------------|------|-------------|
| <b>IE-9320-24P4S-E/-A</b>               | 70W  | 190W        | 170W | 280W        | 370W        | 320W | 385W        |
| <b>IE-9320-24P4X-E/-A</b>               | 70W  | 190W        | 170W | 280W        | 370W        | 320W | 720W        |
| <b>IE-9320-16P8U4X-E/-A<sup>2</sup></b> | 70W  | 190W        | 170W | 280W        | 370W        | 320W | 720W        |
| <b>IE-9310-16P8S4X-E/-A</b>             | 50W  | 170W        | 150W | 260W        | 350W        | 300W | 480W        |

<sup>1</sup> 150W and 250W Power Supplies cannot be used with the 400W Power Supply in a load sharing configuration.

<sup>2</sup> 400W power supplies are required to support 4PPoE Type 4 (PoE Class 7 and 8, PDs requiring greater than 60W). Any of the supported power supplies can be used for PoE+ and 4PPoE Type 3 (PoE Class 1 through 6) up to 60W.

Tables 9 and 10 highlight the software features supported by the Cisco Catalyst IE9300 Rugged Series switches.

**Table 9.** Key supported software features (Network Essentials license)

| Network Essentials license (perpetual) | Features  |
|--|---|
| <b>Layer 2 switching</b>               | 802.1Q, 802.1w, 802.1ab, 802.1s, 802.3ad, 802.3x, Per-VLAN Rapid Spanning Tree (PVRST+), Per-VLAN Spanning Tree (PVST+), Rapid PVST (RPVST), Remote Switched Port Analyzer (RSPAN), Switched Port Analyzer (SPAN), STP, Storm Control, VLAN Trunk Protocol (VTP) v2/v3, 802.1Q Tunneling, Layer 2 Protocol Tunneling (L2PT), Q-in-Q, Selective Q-in-Q, EtherChannel, VLAN Mapping, Loop Detection Guard   |
| <b>Multicast</b>                       | IGMP v1/v2/v3, IGMP snooping, Multicast Listener Discovery (MLD) snooping   |
| <b>Management</b>                      | WebUI, MIB, Simple Network Management Protocol (SNMP), syslog, Dynamic Host Configuration Protocol (DHCP) server, NETCONF, Embedded Event Manager (EEM), Cisco Plug and Play (PnP), Express Setup, Resilient Ethernet Protocol (REP) Zero Touch Provisioning (ZTP)  |
| <b>Security</b>                        | DHCPv6 Guard, IP Source Guard, IPv6 Destination Guard, IPv6 Neighbor Discovery Multicast Suppress, IPv6 Router Advertisement (RA) Guard, IPv6 Snooping, IPv6 Source/Prefix Guard, IPv6 Neighbor Discovery Duplicate Address Detection, Full Flexible NetFlow, PACL, VACL, Network Edge Authentication Topology (NEAT), HTTPS, RADIUS, TACACS+, X.509v3, Secure Shell (SSH), DHCP Snooping, 802.1X, Client Information Signaling Protocol (CISP), Dynamic ARP Inspection (DAI), authentication, authorization, and accounting (AAA), Secure Copy Protocol (SCP), IEEE 802.1AE MACsec-128, TLS 1.3  |
| <b>Quality of Service (QoS)</b>        | 802.1p, priority queuing, Modular QoS command-line interface (MQC), class-based shaping and marking, egress policing, egress queuing and shaping, Auto-QoS, Differentiated Services Code Point (DSCP) mapping and filtering, low-latency queuing  |
| <b>Layer 3 routing</b>                 | Static routing, Open Shortest Path First (OSPF – 1000 routes), OSPFv3, Routing Information Protocol (RIP), Policy-Based Routing (PBR)   |
| <b>Industrial Ethernet</b>             | Locate Switch, Swap Drive, Generic Object-Oriented Substation Events (GOOSE) messaging, SCADA Protocol Classification, PTP1 (Default Profile, Power Profile 2011, Power Profile 2017), Network Time Protocol (NTP) to PTP, Bidirectional Forwarding Detection (BFD), PTP as refclock for NTP, PROFINET support, Common Industrial Protocol (CIP) Support, Cisco IOx support, Layer 2 Network Address Translation (L2 NAT), ModBus TCP, ERSPAN, Inter-Range Instrumentation Group (IRIG-B) Input and Output interface (B002, B003, B006, B007, B122, B123, B126, B127 timecode) <sup>2</sup> , Global Navigation Satellite System (GNSS)/Global Positioning System (GPS) <sup>2</sup> , dying gasp |
| <b>Redundancy</b>                      | REP rings, REP Fast, HSR <sup>3</sup> , PRP <sup>3</sup> , MRP, PTP over PRP <sup>3</sup> , MRP over Stacking <sup>4</sup> , Fast MRP   |
| <b>Automation</b>                      | YANG, NETCONF, RESTCONF   |

<sup>1</sup> PTP is not supported on 2.5G ports of the IE-9320-16P8U4X-E/A

<sup>2</sup> Supported on IE-9320-22S2C4X-E/-A only

<sup>3</sup> Supported on the IE-9320-26S2C-E/-A, IE-9320-22S2C4X-E/-A and IE-9310-16P8S4X-E/-A only

<sup>4</sup> Available on Stackable, IE-9320 variants only

**Table 10.** Key supported software features (Network Advantage license)

| Network Advantage license (perpetual) <sup>1</sup> | Features  |
|--|---|
| <b>IP routing protocols</b>                        | Hot Standby Router Protocol (HSRP), Border Gateway Protocol (BGP), Enhanced Interior Gateway Routing Protocol (EIGRP), Intermediate System-to-Intermediate System (IS-IS), Nonstop Forwarding (NSF), LISP, OSPF   |
| <b>Virtualization</b>                              | VRF-lite  |
| <b>Security</b>                                    | Cisco TrustSec®: Security group ACL (SGACL), SGACL logging, Extensible Authentication Protocol – Transport Layer Security (EAP-TLS), IEEE 802.1AE MACsec-256, SD-Access Policy Extended Node, SD-Access Fabric Edge Node, Generic Routing Encapsulation (GRE), TrustSec over PRP <sup>2</sup> |
| <b>IP Multicast</b>                                | Auto-RP, Multicast Source Discovery Protocol (MSDP), Protocol Independent Multicast (PIM) v2, IPv6 Multicast with VRF-lite support  |
| <b>Industrial Ethernet</b>                         | Layer 3 Network Address Translation (L3 NAT)  |
| <b>Network Features</b>                            | Audio Video Bridging (AVB, IEEE 802.1BA)  |

<sup>1</sup> Network Advantage license includes all Network Essentials features.

<sup>2</sup> Supported on IE-9320-26S2C-A, IE-9320-22S2C4X-A and IE-9310-16P8S4X-A only.

Table 11 highlights the details of Cisco Catalyst Center Essentials and Cisco Catalyst Center Advantage licenses for the IE9300 Rugged Series switches.

**Table 11.** Cisco Catalyst Center DNA Essentials and Cisco Catalyst Center DNA Advantage licenses

| Feature                                     | Description  | Cisco Catalyst Center DNA Essentials <sup>2</sup> | Cisco Catalyst Center DNA Advantage <sup>1,2</sup> |
|---|--|---|--|
| <b>Cisco Catalyst Center</b>                | Discovery, topology, inventory, software image management  | Yes   | Yes  |
| <b>Visibility</b>                           | Overall Health Dashboard   | Yes   | Yes  |
| <b>Day-zero network bring-up automation</b> | Cisco Network Plug-and-Play application  | Yes   | Yes  |
| <b>SD-Access Extended Node</b>              | SD-Access fabric overlay extension   | Yes   | Yes  |
| <b>Industrial Support</b>                   | MRP Monitoring, REP Configuration, REP Topology View<br>PRP Topology Monitoring (SD-Access) <sup>3</sup> | Yes   | Yes  |
| <b>LAN Automation</b>                       | Lan automation helps create error-free underlay network for SDA deployments                              | No  | Yes  |
| <b>SD-Access Policy Extended Node</b>       | SD-Access fabric overlay extension and segmentation  | No  | Yes  |
| <b>SD-Access Fabric Edge Node</b>           | A fabric device that connects wired endpoints to the SDA fabric.   | No  | Yes  |

| Feature   | Description  | Cisco Catalyst Center DNA Essentials <sup>2</sup> | Cisco Catalyst Center DNA Advantage <sup>1,2</sup> |
|---|--|---|--|
| <b>Device 360</b>                                 | Device 360, Client 360, and Network Health Insights                                    | No  | Yes  |
| <b>Patch/SMU Lifecycle Management</b>             | Management of Software Maintenance Upgrades (SMU) or Patches via Cisco Catalyst Center | No  | Yes  |
| <b>Application Visibility and Control (NBAR2)</b> | Provides application-level classification, monitoring, and traffic control             | No  | Yes  |

<sup>1</sup> Cisco Catalyst Center DNA Advantage license can be paired only with the Network Advantage license.

<sup>2</sup> Cisco Catalyst Center licenses for Industrial Ethernet switches are add-on/optional and not mandatory. They do not include Network Tier features.

<sup>3</sup> Requires relevant Catalyst Center SD-Access licensing

Table 12 highlights the compliance specifications for the Cisco Catalyst IE9300 Rugged Series switches.

**Table 12.** Compliance specifications<sup>1</sup>

| Descriptions                     | Specifications  |
|----------------------------------|---|
| <b>Electromagnetic emissions</b> | FCC 47 CFR Part 15 Class A<br>EN 55032 Class A<br>VCCI Class A<br>AS/NZS CISPR 32 Class A<br>CISPR 11 Class A<br>CISPR 32 Class A<br>ICES 003 Class A<br>CNS15936<br>EN 300 386<br>EN 61000-3-2 Harmonic Current Emissions<br>EN 61000-3-3 Voltage Fluctuations and Flicker<br>KS C9832 |
| <b>Radio</b>                     | EN 303 413 <sup>2</sup>   |
| <b>Electromagnetic immunity</b>  | EN55024/EN5035<br>CISPR 24/CISPR35<br>KS C9835<br>EN 61000-4-2 Electro Static Discharge<br>EN 61000-4-3 Radiated RF<br>EN 61000-4-4 Electromagnetic Fast Transients<br>EN 61000-4-5 Surge<br>EN 61000-4-6 Conducted RF  |

| Descriptions                               | Specifications   |
|--|--|
|  | EN 61000-4-8 Power Frequency Magnetic Field<br>EN 61000-4-10 Oscillatory Magnetic Field<br>EN 61000-4-11 AC Voltage Dips<br>EN 61000-4-29 DC Voltage Dips<br>EN 301 489-19 and -1 <sup>2</sup>   |
| <b>Industry standards</b>                  | EN 61000-6-2 Industrial<br>EN 61000-6-4 Industrial<br>EN 61000-6-1 Light Industrial<br>EN 61326 Industrial Control<br>IEEE 1613:2009 Electric Power Stations Communications Networking<br>IEC 61850-3 Electric Substations Communications Networking<br>EN 50121-4<br>EN 50121-3-2:2016 +A1:2019<br>EN 50125-3:2003<br>EN 50125-1:2014<br>AREMA C&S Manual 2019 part 11.5.1 and 11.5.2<br>IP30 (per EN60529)<br>IEC 61850-9-3 (Power Utility Profile)  |
| <b>Safety standards and certifications</b> | Information technology equipment:<br>UL/CSA 60950-1<br>EN 60950-1, CB to IEC 60950-1 with all country deviations<br>UL/CUL 62368-1, CB to IEC62368-1 with country deviations<br>NOM to NOM-019-SCFI (through partners and distributor)<br>Industrial floor (control equipment):<br>CB report and certificate to IEC 61010-2-201<br>UL/CSA 61010-2-201<br>CSA C22.2, No.142<br>Hazardous locations:<br>UL 121201 (Class I, Div 2, groups A-D)<br>CSA 213 (Class I, Div 2, groups A-D)<br>UL/CSA 60079-0, -7 (Class I, Zone 2, Gc/IIC)<br>IEC 60079-0, -7 IECEx test report (Class I, Zone 2, Gc/IIC, ec)<br>EN 60079-0, -7 ATEX certificate (Class I, Zone 2, Gc/IIC, ec) |
| <b>Operating environment</b>               | Operating temperature:<br>-40° to 75° C (-40° to 167° F) (blower-equipped cabinet)<br>-40° to 60° C (-40° to 140° F) (sealed cabinet) <sup>3</sup><br>-40° to 70° C (-40° to 158° F) (vented cabinet)  |

| Descriptions               | Specifications   |
|----------------------------|--|
|                            | EN 60068-2-1<br>EN 60068-2-2<br>EN 61163<br>Altitude:<br>Up to 15,000 feet (4572 m) with no temperature derating<br>Up to 40,000 feet (12,192 m) with temperature derating down to 25° C (77° F) |
| <b>Storage environment</b> | Temperature: -40° to 85° C (-40° to 185° F)<br>Altitude: 15,000 feet (4572 m)<br>IEC 60068-2-14  |
| <b>Humidity</b>            | Relative humidity of 5% to 95% noncondensing<br>IEC 60068-2-3<br>IEC 60068-2-30  |
| <b>Shock and vibration</b> | IEC 60068-2-6 (Vibration)<br>IEC 60068-2-27 (Shock)<br>IEC 60068-2-31 (Shock)<br>IEC 60068-2-32 (Shock)<br>IEC 60068-2-64 (Vibration)  |
| <b>Corrosion</b>           | IEC 60068-2-52 (salt fog) <sup>2</sup><br>IEC 60068-2-60 (flowing mixed gas) <sup>2</sup>  |
| <b>Warranty</b>            | Five-year limited hardware warranty on all IE9300 product IDs and all Industrial Ethernet (IE) power supplies. See more information in the Warranty section.                                     |
| <b>Certifications</b>      | IEC/ANSI/ISA-62443-4-1-2018<br>ANSI/ISA-62443-4-2-2018, IEC-62443-4-2-2019<br>FIPS 140-2<br>USGv6-r1<br>Ready Logo Version 5<br>Common Criteria<br>ODVA Industrial EtherNet/IP<br>NEMA TS2:2021  |

<sup>1</sup> Compliance Pending for IE-9310-16P8S4X-E/-A

<sup>2</sup> For IE-9320-22S2C4X-E/A only

<sup>3</sup> Safety approved up to 60°



Table 13 highlights the Mean Time Between Failures (MTBF) for the Cisco Catalyst IE9300 Rugged Series switches.

**Table 13.** MTBF information

| Product ID            | Rated MTBF (hours) |
|-----------------------|--------------------|
| IE-9310-26S2C -E/-A   | 530,890            |
| IE-9320-26S2C -E/-A   | 492,370            |
| IE-9320-22S2C4X -E/-A | 323,733            |
| IE-9320-24P4S -E/-A   | 489,710            |
| IE-9320-24T4X -E/-A   | 651,580            |
| IE-9320-24P4X -E/-A   | 489,710            |
| IE-9320-16P8U4X -E/-A | 472,070            |
| IE-9310-16P8S4X -E/-A | 265,827            |

Table 14 highlights information about management and standards for the Cisco Catalyst IE9300 Rugged Series switches.

**Table 14.** Management and standards

| Description           | Specifications   |  |
|-----------------------|--|--|
| <b>IEEE standards</b> | <ul style="list-style-type: none"> <li>• IEEE 802.1D MAC Bridges, STP</li> <li>• IEEE 802.1p Layer2 COS prioritization</li> <li>• IEEE 802.1q VLAN</li> <li>• IEEE 802.1s Multiple Spanning-Trees</li> <li>• IEEE 802.1w Rapid Spanning-Tree</li> <li>• IEEE 802.1x Port Access Authentication</li> <li>• IEEE 802.1AB LLDP</li> <li>• IEEE 802.3ad Link Aggregation (LACP)</li> </ul> | <ul style="list-style-type: none"> <li>• IEEE 802.3ah 100BASE-X SMF/MMF only</li> <li>• IEEE 802.3u 100BASE-TX specification</li> <li>• IEEE 802.3ab 1000BASE-T specification</li> <li>• IEEE 802.3z 1000BASE-X specification</li> <li>• IEEE 1588v2 PTP Precision Time Protocol</li> <li>• IEEE 802.1BA Audio Video Bridging</li> <li>• IEEE 802.3af</li> <li>• IEEE 802.3at</li> <li>• IEEE 802.3bt Type 4</li> </ul>  |
| <b>RFC compliance</b> | <ul style="list-style-type: none"> <li>• RFC 768: UDP</li> <li>• RFC 783: TFTP</li> <li>• RFC 791: IPv4 protocol</li> <li>• RFC 792: ICMP</li> <li>• RFC 793: TCP</li> <li>• RFC 826: ARP</li> <li>• RFC 854: Telnet</li> <li>• RFC 951: BOOTP</li> <li>• RFC 959: FTP</li> <li>• RFC 1157: SNMPv1</li> <li>• RFC 1901,1902-1907 SNMPv2</li> <li>• RFC 2273-2275: SNMPv3</li> </ul>    | <ul style="list-style-type: none"> <li>• RFC 1305: NTP</li> <li>• RFC 1492: TACACS+</li> <li>• RFC 1493: Bridge MIB Objects</li> <li>• RFC 1534: DHCP and BOOTP interoperation</li> <li>• RFC 1542: Bootstrap Protocol</li> <li>• RFC 1643: Ethernet Interface MIB</li> <li>• RFC 1757: RMON</li> <li>• RFC 2068: HTTP</li> <li>• RFC 2131, 2132: DHCP</li> <li>• RFC 2236: IGMP v2</li> <li>• RFC 3376: IGMP v3</li> <li>• RFC 2474: DiffServ Precedence</li> <li>• RFC 3046: DHCP Relay Agent Information</li> </ul> |

| Description             | Specifications  |   |
|-------------------------|---|---|
|                         | <ul style="list-style-type: none"> <li>• RFC 2571: SNMP Management</li> <li>• RFC 1166: IP Addresses</li> <li>• RFC 1256: ICMP Router Discovery</li> </ul>  | Option <ul style="list-style-type: none"> <li>• RFC 3580: 802.1x RADIUS</li> <li>• RFC 4250-4252 SSH Protocol</li> </ul>  |
| <b>SNMP MIB objects</b> | <ul style="list-style-type: none"> <li>• BRIDGE-MIB</li> <li>• CALISTA-DPA-MIB</li> <li>• CISCO-ACCESS-ENVMON-MIB</li> <li>• CISCO-ADMISSION-POLICY-MIB</li> <li>• CISCO-AUTH-FRAMEWORK-MIB</li> <li>• CISCO-BRIDGE-EXT-MIB</li> <li>• CISCO-BULK-FILE-MIB</li> <li>• CISCO-CABLE-DIAG-MIB</li> <li>• CISCO-CALLHOME-MIB</li> <li>• CISCO-CAR-MIB</li> <li>• CISCO-CDP-MIB</li> <li>• CISCO-CIRCUIT-INTERFACE-MIB</li> <li>• CISCO-CLUSTER-MIB</li> <li>• CISCO-CONFIG-COPY-MIB</li> <li>• CISCO-CONFIG-MAN-MIB</li> <li>• CISCO-DATA-COLLECTION-MIB</li> <li>• CISCO-DHCP-SNOOPING-MIB</li> <li>• CISCO-EMBEDDED-EVENT-MGR-MIB</li> <li>• CISCO-ENTITY-ALARM-MIB</li> <li>• CISCO-ENTITY-VENDORTYPE-OID-MIB</li> <li>• CISCO-ENVMON-MIB</li> <li>• CISCO-ERR-DISABLE-MIB</li> <li>• CISCO-FLASH-MIB</li> <li>• CISCO-FTP-CLIENT-MIB</li> <li>• CISCO-IGMP-FILTER-MIB</li> <li>• CISCO-IMAGE-MIB</li> <li>• CISCO-IP-STAT-MIB</li> <li>• CISCO-LAG-MIB</li> <li>• CISCO-LICENSE-MGMT-MIB</li> <li>• CISCO-MAC-AUTH-BYPASS-MIB</li> <li>• CISCO-MAC-NOTIFICATION-MIB</li> <li>• CISCO-MEMORY-POOL-MIB</li> <li>• CISCO-PAE-MIB</li> <li>• CISCO-PAGP-MIB</li> <li>• CISCO-PING-MIB</li> <li>• CISCO-PORT-QOS-MIB</li> <li>• CISCO-PORT-SECURITY-MIB</li> <li>• CISCO-PORT-STORM-CONTROL-MIB</li> <li>• CISCO-PRIVATE-VLAN-MIB</li> <li>• CISCO-PROCESS-MIB</li> <li>• CISCO-PRODUCTS-MIB</li> <li>• CISCO-RESILIENT-ETHERNET-PROTOCOL-MIB</li> </ul> | <ul style="list-style-type: none"> <li>• CISCO-SNMP-TARGET-EXT-MIB</li> <li>• CISCO-STACK-MIB</li> <li>• CISCO-STACKMAKER-MIB</li> <li>• CISCO-STACKWISE-MIB</li> <li>• CISCO-STP-EXTENSIONS-MIB</li> <li>• CISCO-SYSLOG-MIB</li> <li>• CISCO-TCP-MIB</li> <li>• CISCO-UDLD-MIB</li> <li>• CISCO-VLAN-IFTABLE-RELATIONSHIP-MIB</li> <li>• CISCO-VLAN-MEMBERSHIP-MIB</li> <li>• CISCO-VTP-MIB</li> <li>• ENTITY-MIB</li> <li>• ETHERLIKE-MIB</li> <li>• HC-RMON-MIB</li> <li>• IEEE8021-PAE-MIB</li> <li>• IEEE8023-LAG-MIB</li> <li>• IF-MIB</li> <li>• IP-FORWARD-MIB</li> <li>• LLDP-EXT-MED-MIB</li> <li>• LLDP-EXT-PNO-MIB</li> <li>• LLDP-MIB</li> <li>• NETRANGER</li> <li>• NOTIFICATION-LOG-MIB</li> <li>• OLD-CISCO-CHASSIS-MIB</li> <li>• OLD-CISCO-CPU-MIB</li> <li>• OLD-CISCO-FLASH-MIB</li> <li>• OLD-CISCO-INTERFACES-MIB</li> <li>• OLD-CISCO-IP-MIB</li> <li>• OLD-CISCO-MEMORY-MIB</li> <li>• OLD-CISCO-SYS-MIB&lt;</li> <li>• OLD-CISCO-SYSTEM-MIB</li> <li>• OLD-CISCO-TCP-MIB</li> <li>• OLD-CISCO-TS-MIB</li> <li>• RMON-MIB</li> <li>• RMON2-MIB</li> <li>• SMON-MIB</li> <li>• SNMP-COMMUNITY-MIB</li> <li>• SNMP-FRAMEWORK-MIB</li> <li>• SNMP-MPD-MIB</li> <li>• SNMP-NOTIFICATION-MIB</li> <li>• SNMP-PROXY-MIB</li> <li>• SNMP-TARGET-MIB</li> <li>• SNMP-USM-MIB</li> <li>• SNMP-VIEW-BASED-ACM-MIB</li> </ul> |

| Description | Specifications   |  |
|-------------|--|--|
|             | <ul style="list-style-type: none"> <li>• CISCO-RTTMON-ICMP-MIB</li> <li>• CISCO-RTTMON-IP-EXT-MIB</li> <li>• CISCO-RTTMON-MIB</li> <li>• CISCO-RTTMON-RTP-MIB</li> </ul> | <ul style="list-style-type: none"> <li>• SNMPv2-MIB</li> <li>• TCP-MIB</li> <li>• UDP-MIB</li> </ul> |

Table 15 highlights information about supported SFP modules for the Cisco Catalyst IE9300 Rugged Series switches.

**Table 15.** SFP support

| Part number              | Specification  | SFP type | Max distance | Cable type | Temperature range <sup>1</sup> | Digital optical monitoring (DOM) support |
|--------------------------|----------------|----------|--------------|------------|--------------------------------|--|
| <b>GLC-FE-100FX-RGD=</b> | 100BASE-FX     | FE       | 2 km         | MMF        | IND                            | Yes                                      |
| <b>GLC-FE-100LX-RGD=</b> | 100BASE-LX10   | FE       | 10 km        | SMF        | IND                            | Yes                                      |
| <b>GLC-FE-100FX=</b>     | 100BASE-FX     | FE       | 2 km         | MMF        | COM                            | No                                       |
| <b>GLC-FE-100LX=</b>     | 100BASE-LX10   | FE       | 10 km        | SMF        | COM                            | No                                       |
| <b>GLC-FE-100EX=</b>     | 100BASE-EX     | FE       | 40 km        | SMF        | COM                            | No                                       |
| <b>GLC-FE-100ZX=</b>     | 100BASE-ZX     | FE       | 80 km        | SMF        | COM                            | No                                       |
| <b>GLC-FE-100BX-D=</b>   | 100BASE-BX10   | FE       | 10 km        | SMF        | COM                            | No                                       |
| <b>GLC-FE-100BX-U=</b>   | 100BASE-BX10   | FE       | 10 km        | SMF        | COM                            | Yes                                      |
| <b>GLC-SX-MM-RGD=</b>    | 1000BASE-SX    | GE       | 550 m        | MMF        | IND                            | Yes                                      |
| <b>GLC-LX-SM-RGD=</b>    | 1000BASE-LX/LH | GE       | 550 m/10 km  | MMF/SMF    | IND                            | Yes                                      |
| <b>GLC-ZX-SM-RGD=</b>    | 1000BASE-ZX    | GE       | 70 km        | SMF        | IND                            | Yes                                      |
| <b>GLC-BX40-U-I=</b>     | 1000BASE-BX40  | GE       | 40 km        | SMF        | IND                            | Yes                                      |
| <b>GLC-BX40-D-I=</b>     | 1000BASE-BX40  | GE       | 40 km        | SMF        | IND                            | Yes                                      |
| <b>GLC-BX80-U-I=</b>     | 1000BASE-BX80  | GE       | 80 km        | SMF        | IND                            | Yes                                      |
| <b>GLC-BX80-D-I=</b>     | 1000BASE-BX80  | GE       | 80 km        | SMF        | IND                            | Yes                                      |
| <b>GLC-SX-MMD=</b>       | 1000BASE-SX    | GE       | 550 m        | MMF        | EXT                            | Yes                                      |
| <b>GLC-LH-SMD=</b>       | 1000BASE-LX/LH | GE       | 550 m/10 km  | MMF/SMF    | EXT                            | Yes                                      |
| <b>GLC-EX-SMD=</b>       | 1000BASE-EX    | GE       | 40 km        | SMF        | EXT                            | Yes                                      |
| <b>GLC-ZX-SMD=</b>       | 1000BASE-ZX    | GE       | 70 km        | SMF        | EXT                            | Yes                                      |
| <b>GLC-BX-D=</b>         | 1000BASE-BX10  | GE       | 10 km        | SMF        | COM                            | Yes                                      |

| Part number             | Specification   | SFP type | Max distance | Cable type | Temperature range <sup>1</sup> | Digital optical monitoring (DOM) support |
|-------------------------|-----------------|----------|--------------|------------|--------------------------------|--|
| <b>GLC-BX-U=</b>        | 1000BASE-BX10   | GE       | 10 km        | SMF        | COM                            | Yes                                      |
| <b>CWDM-SFP-xxxx=</b>   | CWDM 1000BASE-X | GE       |              | SMF        | COM                            | Yes                                      |
| <b>DWDM-SFP-xxxx=</b>   | DWDM 1000BASE-X | GE       |              | SMF        | COM                            | Yes                                      |
| <b>SFP-GE-S=</b>        | 1000BASE-SX     | GE       | 550 m        | MMF        | EXT                            | Yes                                      |
| <b>SFP-GE-L=</b>        | 1000BASE-LX/LH  | GE       | 550 m/10 km  | MMF/SMF    | EXT                            | Yes                                      |
| <b>SFP-GE-Z=</b>        | 1000BASE-ZX     | GE       | 70 km        | SMF        | EXT                            | Yes                                      |
| <b>GLC-SX-MM=</b>       | 1000BASE-SX     | GE       | 550 m        | MMF        | COM                            | No                                       |
| <b>GLC-LH-SM=</b>       | 1000BASE-LX/LH  | GE       | 550 m/10 km  | MMF/SMF    | COM                            | No                                       |
| <b>GLC-ZX-SM=</b>       | 1000BASE-ZX     | GE       | 70 km        | SMF        | COM                            | Yes                                      |
| <b>GLC-TE=²</b>         | 1000BASE-T      | GE       | 100 m        | Copper     | EXT                            | NA                                       |
| <b>GLC-T=²</b>          | 1000BASE-T      | GE       | 100 m        | Copper     | COM                            | NA                                       |
| <b>GLC-T-RGD=²</b>      | 1000BASE-T      | GE       | 100 m        | Copper     | IND                            | NA                                       |
| <b>ONS-SI-GE-SX=</b>    | 1000BASE-SX     | GE       | 500 m        | MMF        | IND                            |  |
| <b>ONS-SI-GE-LX=</b>    | 1000BASE-LX     | GE       | 10 km        | SMF        | IND                            |  |
| <b>ONS-SI-GE-EX=</b>    | 1000BASE-EX     | GE       | 40 km        | SMF        | IND                            |  |
| <b>ONS-SI-GE-ZX=</b>    | 1000BASE-ZX     | GE       | 80 km        | SMF        | IND                            |  |
| <b>ONS-SE-GE-BXU=</b>   | 1000BASE-BX     | GE       | 10 km        | SMF        | EXT                            |  |
| <b>ONS-SE-GE-BXD=</b>   | 1000BASE-BX     | GE       | 10 km        | SMF        | EXT                            |  |
| <b>GLC-BX-U-I=</b>      | 1000BASE-BX     | GE       | 10 km        | SMF        | IND                            |  |
| <b>GLC-BX-D-I=</b>      | 1000BASE-BX     | GE       | 10 km        | SMF        | IND                            |  |
| <b>SFP-10G-BXD-I=</b>   | 10GBASE-BX      | 10G      | 10 km        | SMF        | IND                            | Yes                                      |
| <b>SFP-10G-BXU-I=</b>   | 10GBASE-BX      | 10G      | 10 km        | SMF        | IND                            | Yes                                      |
| <b>SFP-10G-BX40D-I=</b> | 10GBASE-BX      | 10G      | 40 km        | SMF        | IND                            | Yes                                      |
| <b>SFP-10G-BX40U-I=</b> | 10GBASE-BX      | 10G      | 40 km        | SMF        | IND                            | Yes                                      |
| <b>SFP-10G-SR-X=</b>    | 10GBASE-SR      | 10G      | 400 m        | MMF        | EXT                            | Yes                                      |
| <b>SFP-10G-SR-I=</b>    | 10GBASE-SR      | 10G      | 400 m        | MMF        | IND                            | Yes                                      |
| <b>SFP-10G-LR-X=</b>    | 10GBASE-LR      | 10G      | 10 km        | SMF        | EXT                            | Yes                                      |

| Part number              | Specification  | SFP type | Max distance | Cable type | Temperature range <sup>1</sup> | Digital optical monitoring (DOM) support |
|--------------------------|----------------|----------|--------------|------------|--------------------------------|--|
| <b>SFP-10G-SR=</b>       | 10GBASE-SR     | 10G      | 400 m        | MMF        | COM                            | Yes                                      |
| <b>SFP-10G-LR=</b>       | 10GBASE-LR     | 10G      | 10 km        | SMF        | COM                            | Yes                                      |
| <b>SFP-10G-ER=</b>       | 10GBASE-ER     | 10G      | 40 km        | SMF        | COM                            | Yes                                      |
| <b>SFP-10G-ZR=</b>       | 10GBASE-ZR     | 10G      | 80 km        | SMF        | COM                            | Yes                                      |
| <b>SFP-H10GB-CUxM=</b>   | Twinax Cable   | 10G      | 1m, 3m, 5m   | -          | COM                            | -  |
| <b>SFP-H10GB-ACUxM=</b>  | Twinax Cable   | 10G      | 7m, 10m      | -          | COM                            | -  |
| <b>ONS-SI+-10G-SR=</b>   | 10GBASE-SR     | 10G      | 400 m        | MMF        | IND                            | Yes                                      |
| <b>ONS-SI+-10G-LR=</b>   | 10GBASE-LR     | 10G      | 10 km        | SMF        | IND                            | Yes                                      |
| <b>ONS-SI+-10G-ER=</b>   | 10GBASE-ER     | 10G      | 40 km        | SMF        | IND                            | Yes                                      |
| <b>ONS-SI+-10G-ZR=</b>   | 10GBASE-ZR     | 10G      | 80 km        | SMF        | IND                            | Yes                                      |
| <b>SFP-10G-ER-I=</b>     | 10GBASE-ER     | 10G      | 40 km        | SMF        | IND                            | Yes                                      |
| <b>SFP-10G-ZR-I=</b>     | 10GBASE-ZR     | 10G      | 80 km        | SMF        | IND                            | Yes                                      |
| <b>SFP-10G-T-X=</b>      | 10GBASE-T      | 10G      | 30 m         | Copper     | EXT                            | NA                                       |
| <b>SFP-10G-LR10-I=</b>   | 10GBASE-LR     | 10G      | 10 km        | SMF        | IND                            | Yes                                      |
| <b>DWDM-SFP10G-xxxx=</b> | DWDM 10GBASE-X | 10G      |              | SMF        | COM                            | Yes                                      |
| <b>CWDM-SFP10G-xxxx=</b> | CWDM 10GBASE-X | 10G      |              | SMF        | COM                            | Yes                                      |

<sup>1</sup> If nonindustrial SFPs (EXT, COM) are used, the switch operating temperature must be derated.

<sup>2</sup> Degrades PTP performance. Not supported on Dual-Media SFP Ports (Combo Ports)

## Ordering information

Table 16 lists the ordering information for the Cisco Catalyst IE9300 Rugged Series switches.

**Table 16.** Ordering information

| Product ID             | Description  |
|------------------------|--|
| <b>IE-9310-26S2C-E</b> | Catalyst IE9300 w/ 24 Ports GE SFP Downlinks and 4 Ports GE SFP uplinks, NE            |
| <b>IE-9310-26S2C-A</b> | Catalyst IE9300 w/ 24 Ports GE SFP Downlinks and 4 Ports GE SFP uplinks, NA            |
| <b>IE-9320-26S2C-E</b> | Catalyst IE9300 w/ 24 Ports GE SFP Downlinks and 4 Ports GE SFP uplinks, Stackable, NE |
| <b>IE-9320-26S2C-A</b> | Catalyst IE9300 w/ 24 Ports GE SFP Downlinks and 4 Ports GE SFP uplinks, Stackable, NA |

| Product ID                | Description  |
|---------------------------|--|
| <b>IE-9320-22S2C4X-E</b>  | Catalyst IE9300 w/ 24 Ports GE SFP Downlinks and 4 Ports 10G SFP+ uplinks, Stackable, NE, Conformal Coating      |
| <b>IE-9320-22S2C4X-A</b>  | Catalyst IE9300 w/ 24 Ports GE SFP Downlinks and 4 Ports 10G SFP+ uplinks, Stackable, NA, Conformal Coating      |
| <b>IE-9320-24P4S-E</b>    | Catalyst IE9300 w/ 24 Ports GE PoE+ Downlinks and 4 Ports GE SFP uplinks, Stackable, NE                          |
| <b>IE-9320-24P4S-A</b>    | Catalyst IE9300 w/ 24 Ports GE PoE+ Downlinks and 4 Ports GE SFP uplinks, Stackable, NA                          |
| <b>IE-9320-24T4X-E</b>    | Catalyst IE9300 w/ 24 Ports GE Cu Downlinks and 4 Ports 10G SFP+ uplinks, Stackable, NE                          |
| <b>IE-9320-24T4X-A</b>    | Catalyst IE9300 w/ 24 Ports GE Cu Downlinks and 4 Ports 10G SFP+ uplinks, Stackable, NA                          |
| <b>IE-9320-24P4X-E</b>    | Catalyst IE9300 w/ 24 Ports GE PoE+ Downlinks and 4 Ports 10G SFP+ uplinks, Stackable, NE                        |
| <b>IE-9320-24P4X-A</b>    | Catalyst IE9300 w/ 24 Ports GE PoE+ Downlinks and 4 Ports 10G SFP+ uplinks, Stackable, NA                        |
| <b>IE-9320-16P8U4X-E</b>  | Catalyst IE9300 w/ 16 Ports GE PoE+ and 8 Ports 2.5G 4PPoE Downlinks and 4 Ports 10G SFP+ uplinks, Stackable, NE |
| <b>IE-9320-16P8U4X-A</b>  | Catalyst IE9300 w/ 16 Ports GE PoE+ and 8 Ports 2.5G 4PPoE Downlinks and 4 Ports 10G SFP+ uplinks, Stackable, NA |
| <b>IE-9310-16P8S4X-E</b>  | Cisco Catalyst IE9300 w/ 16 Ports GE PoE+ and 8 Ports SFP Downlinks and 4 Ports 1/10G SFP+ uplinks, NE           |
| <b>IE-9310-16P8S4X-A</b>  | Cisco Catalyst IE9300 w/ 16 Ports GE PoE+ and 8 Ports SFP Downlinks and 4 Ports 1/10G SFP+ uplinks, NA           |
| <b>SD-IE-16GB=</b>        | 16GB SD memory card for IE   |
| <b>CAB-STK-0.5M=</b>      | Cisco 0.5M stack cable   |
| <b>CAB-STK-1M=</b>        | Cisco 1M stack cable   |
| <b>RM-RGD-19IN=</b>       | Spare 19IN rack-mount kit  |
| <b>RM-RGD-23IN=</b>       | 23IN NEBS rack-mount kit   |
| <b>RM-RGD-ETSI=</b>       | ETSI rack-mount kit  |
| <b>PWR-RGD-AC-DC-H</b>    | Hazloc Power Supply High AC/DC 85-264VAC/88-300VDC   |
| <b>PWR-RGD-AC-DC-H=</b>   | Spare Hazloc Power Supply High AC/DC 85-264VAC/88-300VDC   |
| <b>PWR-RGD-LOW-DC-H</b>   | Hazloc Power Supply Low DC 24-60V/10A  |
| <b>PWR-RGD-LOW-DC-H=</b>  | Spare Hazloc Power Supply Low DC 24-60V/10A  |
| <b>PWR-RGD-AC-DC-250</b>  | Hazloc Power Supply 100-240VAC/100-250VDC  |
| <b>PWR-RGD-AC-DC-250=</b> | Spare Hazloc Power Supply 100-240VAC/100-250VDC  |

| Product ID                | Description   |
|---------------------------|---|
| <b>PWR-RGD-AC-DC-400</b>  | Hazloc Power Supply 100-240VAC/100-250VDC, 400W                   |
| <b>PWR-RGD-AC-DC-400=</b> | Spare Hazloc Power Supply 100-240VAC/100-250VDC, 400W             |
| <b>IE9300-NW-A=</b>       | Network Advantage License for IE9300, Perpetual                   |
| <b>IE9300-DNA-E</b>       | Cisco Catalyst Center DNA Essentials license for IE9300 Series    |
| <b>IE9300-DNA-E-3Y</b>    | IE 9300 Cisco Catalyst Center DNA Essentials, 3 Year Term license |
| <b>IE9300-DNA-E-5Y</b>    | IE 9300 Cisco Catalyst Center DNA Essentials, 5 Year Term license |
| <b>IE9300-DNA-E-7Y</b>    | IE 9300 Cisco Catalyst Center DNA Essentials, 7 Year Term license |
| <b>IE9300-DNA-A</b>       | Cisco Catalyst Center DNA Advantage license for IE9300 Series     |
| <b>IE9300-DNA-A-3Y</b>    | IE 9300 Cisco Catalyst Center DNA Advantage, 3 Year Term license  |
| <b>IE9300-DNA-A-5Y</b>    | IE 9300 Cisco Catalyst Center DNA Advantage, 5 Year Term license  |
| <b>IE9300-DNA-A-7Y</b>    | IE 9300 Cisco Catalyst Center DNA Advantage, 7 Year Term license  |

## Warranty

Five-year limited hardware warranty on all IE9300 product IDs and power supplies (see Table 15 above). See the following link for more details on the warranty:

<https://www.cisco.com/c/en/us/products/warranties/warranty-doc-c99-740591.html>.

## Cisco environmental sustainability

Information about Cisco’s environmental sustainability policies and initiatives for our products, solutions, operations, and extended operations or supply chain is provided in the “Environment Sustainability” section of Cisco’s [Corporate Social Responsibility](#) (CSR) Report.

Reference links to information about key environmental sustainability topics (mentioned in the “Environment Sustainability” section of the CSR Report) are provided in the following table:

| Sustainability topic  | Reference                       |
|---|---------------------------------|
| <b>Information on product material content laws and regulations</b>                                       | <a href="#">Materials</a>       |
| <b>Information on electronic waste laws and regulations, including products, batteries, and packaging</b> | <a href="#">WEEE compliance</a> |

Reference links to product-specific environmental sustainability information that is mentioned in relevant sections of this data sheet are provided in the following table:

| Sustainability topic                                     | Reference   |
|--|---|
| Power  |   |
| Power specifications and consumption                     | <a href="#">Table 5. IE9300 physical configurations</a> |
| Environmental characteristics                            |   |
| Operating temperature, industry standards, EMC emissions | <a href="#">Table 12. Compliance specifications</a>     |
| Material   |   |
| Unit weight  | <a href="#">Table 5: IE9330 physical configurations</a> |

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## Cisco Services

For information on services, visit <https://www.cisco.com/web/services/>.

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## For more information

For more information about the Cisco IE 9300 Series, visit <https://www.cisco.com/go/ie9300> or contact your local account representative.



## Document history

| New or Revised Topic   | Described In  | Date             |
|--|---|------------------|
| Added IE-9310-16P8S4X to the SKUs.   | All sections  | June 2025        |
| SD Card Capacity, Feature Update, MTBF Information Update, Management & Standards update, SFP Support Footnote update, Ordering Information Update, Catalyst Center Feature update | <a href="#">Table 6</a> , <a href="#">Table 9</a> , <a href="#">Table 10</a> , <a href="#">Table 11</a> , <a href="#">Table 13</a> , <a href="#">Table 14</a> , <a href="#">Table 15</a> , <a href="#">Table 16</a> | February 2025    |
| Feature update, Compliance update, SFP Temperature range update, Ordering information update   | <a href="#">Table 9</a> , <a href="#">Table 12</a> , <a href="#">Table 15</a> , <a href="#">Table 16</a>  | October 2024     |
| Power supplies footnote update, REP ZTP feature addition, Certifications, Removed Full Flexible Netflow from Catalyst Center Visibility row  | <a href="#">Table 7</a> , <a href="#">Table 9</a> , <a href="#">Table 11</a> , <a href="#">Table 12</a>   | April 2024       |
| Footnotes update, PID Description update, Figure 3 description update and ModBus TCP feature update, DNA name change to Catalyst Center  | <a href="#">Figure 3</a> , <a href="#">Table 7</a> , <a href="#">Table 8</a> , <a href="#">Table 9</a> , <a href="#">Table 12</a> , <a href="#">Table 16</a>  | October 19, 2023 |
| Updated Features L2 NAT, PTP as Ref for NTP, CIP, PROFINET. REP Fast, Power Profile 2017, SD-Access Fabric Edge Node and Cisco DNA Centre License Matrix                           | <a href="#">Table 9</a> , <a href="#">Table 10</a> and <a href="#">Table 11</a>   | April 12, 2023   |

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