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# Cisco Industrial Ethernet Switching Portfolio

## Resilient, easy-to-deploy switches enable scaling the Internet of Things

A manufacturer sees its build-to-order cycle times improve by up to 25 percent with a more flexible, integrated plant and IT infrastructure. A transportation department with sensors deployed throughout its track and train system is alerted to a malfunction on its track-signaling system days before it can cause a serious accident. And an electrical utility identifies fault locations and restores service 20 percent faster than before.

This is what's possible when Cisco® Industrial Ethernet (IE) switches are deployed as part of an integrated, converged Information Technology (IT) and Operational Technology (OT) network. One that also prepares you to capture new opportunities and achieve greater efficiencies as your network expands dramatically with end devices and sensors in the age of the Internet of Things (IoT).

The Cisco IE switching portfolio includes ruggedized, secure, easy-to-use switches built for extending the enterprise to harsh, industrial environments. They provide secure connectivity across challenging environments and industries such as manufacturing, utilities, transportation, oil and gas, mining, and smart cities.

These Cisco switches offer best-in-class Cisco IOS® or Cisco IOS XE Software with advanced Layer 2 and Layer 3 features, along with industrial protocol support, such as PROFINET and EtherNet/IP to accelerate industries' digital transformation.

## Benefits

**Reduced downtime** with managed Ethernet switches that are more reliable and include high-availability technology to ensure resilient networks, even in extreme industrial environments

**Lower operational costs** with zero-touch provisioning that automates connecting thousands of new endpoints as part of Internet of Things (IoT) deployments

**Increased IT and operations** team efficiency with a single, standardized operating system

**Real-time visibility** to monitor, manage, and react across the whole network, from any location

**Improved security** with cyber and physical network-wide security policies that also deliver unparalleled visibility and control

**Investment protection** with modular switches that scale with IoT device growth and software licensing that gives you new and improved software features without hardware upgrades

## Visibility and security

Cisco IE switches are available with robust visibility and security features. Select IE switch models incorporate Cisco Cyber Vision, which provides granular visibility into connected assets and traffic flows to monitor your security posture and also helps you define rules for network segmentation. IE switches are compatible with Cisco Software-Defined Access (SD-Access), which can be used for easy segmentation, threat isolation, and building a zero-trust industrial network.

Cisco IE switches are developed according to the Cisco Secure Development Lifecycle (SDL), which enforces a secure-by-design philosophy from product planning through end of life and is certified against ISA/IEC 62443-4-1. They also contain several embedded security features that provide additional layers of protection.

## Easy network management

Scaling your industrial network is easy with intelligent management. You can easily manage your IoT network with the same tools that manage your IT network, such as Cisco DNA Center, which allows zero-touch deployments, automates configuration changes, monitors performance, and identifies and helps correct faults, reducing time and cost of deployment. You may also use other management options such as the included web management tool.

## Multiple form factors

Cisco offers its IE switch portfolio in different form factors to suit industries and use cases.

- **DIN rail switches:** These switches can be mounted on standard DIN rails, which are commonly used in industrial control panels. The switches are also compact and take up less space in these panels, which is useful in tight spaces where there is limited room for equipment. Cisco IE DIN rail switches are available in both fixed and modular forms that can be expanded with additional ports to keep up with demand. They also offer a choice of power supplies, allowing you to match the right power capacity for your PoE needs.
- **Rack-mount switches:** These switches are designed to be mounted in a standard 19-inch equipment rack, which allows for flexibility in deployment – in industrial settings, server rooms, or even in data centers. Some of the Cisco rack-mount industrial switches are conformally coated for additional resistance against corrosion.
- **IP67-rated switches:** These switches are wall mounted and can withstand the harshest conditions, including dust, water, and extreme temperatures, as well as severe shocks and vibrations. Because they are designed to withstand harsh conditions, IP67-rated industrial switches are more reliable and less likely to fail and cause downtimes. The switches are equipped with M12 connectors rather than standard RJ-45. Some Cisco IP67-rated switch models also provide PoE.
- **Embedded switches:** These switches are ultra-compact and built for secure, high-bandwidth, mission-critical mobile networks. They enable integrators to build custom solutions for specialized use cases.

## Built-in essential OT services

Select models of the IE switch portfolio with the open IOx based edge-compute capabilities run a number of essential services. This differentiating feature of the switches eliminates the need for span networks and additional servers to run these applications. Note that Cisco IoT Operations Dashboard may be required to run some of these services.

These services include:

- Cyber Vision sensor for granular visibility into connected assets and traffic flows, assess vulnerabilities, increase operations efficiencies and help define segmentation policies
- Secure Equipment Access for a standard secure way to monitor, configure, update, and manage industrial assets remotely
- Edge Intelligence to collect process data in real-time to improve governance and make better business decisions

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# Modular DIN rail switches

Select models of the Cisco IE switch portfolio are available in a modular form factor. These switches include the base system to which expansion modules may be attached as required. This modularity gives you the freedom to add, remove, or change copper or fiber ports in the future in sync with your evolving needs without having to replace the entire switch.

## Cisco Catalyst IE3400 Rugged Series

- Advanced modular DIN rail switch expandable up to 26 ports
- All Gigabit Ethernet platform, Layer 2 or Layer 3
- Up to 24 ports of PoE/PoE+ (power budget up to 480W)
- Copper, fiber, and PoE+ expansion modules
- IOS XE operating software
- Cisco DNA Center for management
- SD-Access policy extended node
- Advanced industrial protocols and additional security features
- Edge compute, Cisco Cyber Vision for Industrial Control System (ICS) visibility
- Cisco Secure Equipment Access for remote asset access
- Cisco Edge Intelligence for real-time data extraction

Expansion modules for the Catalyst® IE3400 allow you to add fiber, copper, or PoE ports and include the following. In addition to these, the Catalyst IE3400 may be able to use expansion modules for the Catalyst IE3300 with some limitations.

8 fiber ports

8 copper ports

8 PoE+ ports

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## Cisco Catalyst IE3300 Rugged Series

- Modular DIN rail switch expandable up to 26 ports
- All Gigabit Ethernet platform with available 10G uplink option, Layer 2 or Layer 3
- Up to 24 ports of PoE/PoE+ (power budget up to 360W)
- Copper, fiber, and PoE+ expansion modules
- IOS XE operating software
- Cisco DNA Center for management
- SD-Access extended node
- Cisco Cyber Vision for ICS visibility
- Cisco Secure Equipment Access for remote asset access
- Cisco Edge Intelligence for real-time data extraction

Expansion options for the Catalyst IE3300 allow you to add 8 to 16 copper, fiber, or PoE ports to the base system and include the following

8 copper ports

16 copper ports

8 fiber ports

6 copper, 2 fiber ports

14 copper, 2 fiber ports

8 PoE+ ports

16 PoE+ ports

4 1G/2.5G Hi-PoE ports

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# Fixed DIN rail switches

## Cisco Catalyst IE3200 Rugged Series

- Fixed DIN rail switch, 10 ports
- All Gigabit Ethernet platform, Layer 2
- 8 ports of PoE/PoE+ (power budget up to 240W)
- Cisco IOS XE operating software
- Cisco DNA Center for management

## Cisco IE4000 Series Switches

- Fixed DIN rail switch, up to 20 ports
- 4x 1G combo uplinks
- All Gigabit Ethernet platform, Layer 2 or Layer 3
- Up to 8 ports of PoE/PoE+ (power budget up to 200W)
- Advanced industrial protocols and additional security features
- Cisco DNA Center for management
- SD-Access extended node

## Cisco Catalyst IE3100 Rugged Series

- Ultra-compact form-factor fixed DIN rail switch with 6, 10, 12, or 20 ports
- 2 or 4 dual-media or fiber uplink ports
- All Gigabit Ethernet platform, Layer 2
- Small size for constrained spaces
- Cisco IOS XE operating software
- Cisco DNA Center for management

## Cisco IE2000 Series Switches

- Fixed DIN rail switch, up to 20 ports
- Up to 18 FE ports, 2x 1G combo uplinks (on select models)
- Layer 2 or Layer 3 (limited features)
- Up to 4 ports of PoE/PoE+ (power budget up to 120W)
- Conformal coating (on select model)
- Optimized for use in utilities (select models)
- Cisco DNA Center for management

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## Cisco IE2000U Series Switches

- Optimized for use in utilities
- Fixed DIN rail switch, up to 20 ports
- Up to 18 FE ports, 2x 1 G uplinks
- Layer 2 or Layer 3
- Up to 4 ports of PoE/PoE+ (power budget up to 120W)
- Conformal coating (on select model)
- Cisco DNA Center for management

## Cisco IE1000 Series Switches

- Fixed DIN rail switch, up to 10 ports
- Up to 8 Fast Ethernet (FE) ports, 2x 1G combo uplinks (on select models)
- Lightly managed Layer 2
- Up to 8 ports of PoE/PoE+ (power budget up to 180W)
- Security: Port security, TACACS, 802.1X
- Plug and Play (PnP) for easy deployment

# Rack-mount switches

## Cisco Catalyst IE9300 Rugged Series

- 19-inch rack-mount switch, 28 ports
- Based on the Cisco UADP ASIC
- All Gigabit Ethernet platform, Layer 2 or Layer 3
- 26 fiber ports, 2 combo Gigabit Ethernet ports (on select models)
- 24 copper ports with PoE/PoE+ (on select models and with power budget up to 720W)
- 4x 10G fiber uplinks (on select models)
- Multi-gigabit copper ports with 90W/port 4-pair PoE (on select model and with power budget up to 720W)
- GNSS/GPS antenna interface and conformal coating (on select model)
- IOS XE operating software
- Vertical stacking up to 8 members
- Advanced industrial and redundancy protocols
- Edge compute, Cisco Cyber Vision for ICS visibility
- Cisco DNA Center for management
- SD-Access fabric edge node

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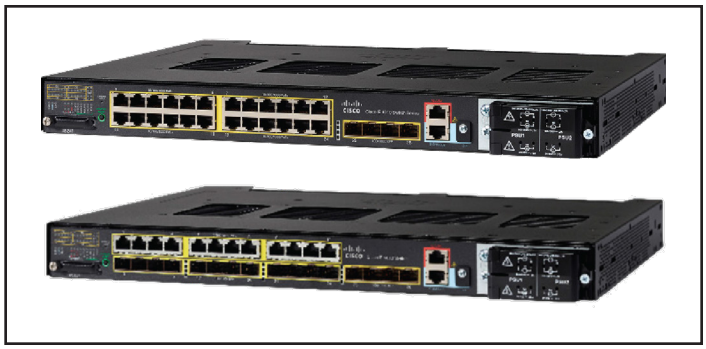
## Cisco IE5000 Series Switches

- 19-inch rack-mount switch, 28 ports
- All Gigabit Ethernet platform, Layer 2 or Layer 3
- 4x 10G fiber uplinks (on select models)
- Up to 12 ports of PoE/PoE+ (power budget 360W)
- Horizontal stacking up to 4 members
- GNSS/GPS antenna interface
- Advanced industrial protocols and additional security features
- Conformal coating (on select model)
- Cisco DNA Center for management
- SD-Access extended node



## Cisco IE4010 Series Switches

- 19-inch rack-mount switch, 28 ports
- All Gigabit Ethernet platform, Layer 2 or Layer 3
- Up to 24 ports of PoE/PoE+ (power budget up to 385W)
- Advanced industrial protocols and additional security features
- Cisco DNA Center for management
- SD-Access extended node

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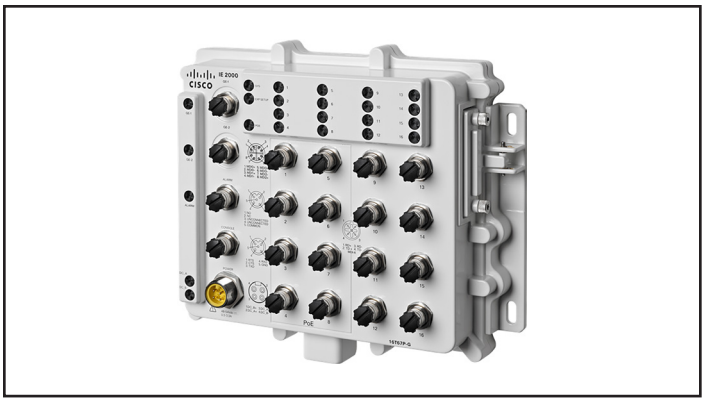
# Heavy-duty IP67 switches



## Cisco Catalyst IE3400 Heavy Duty Series

- Wall-mount IP66/IP67 switch with M12 interfaces
- Up to 24 all Gigabit Ethernet or all Fast Ethernet ports, Layer 2 or Layer 3
- Cisco DNA Center for management
- SD-Access policy extended node
- Advanced industrial protocols and additional security features
- Edge compute, Cisco Cyber Vision for ICS visibility
- Cisco Secure Equipment Access for remote asset access
- Cisco Edge Intelligence for real-time data extraction

## Cisco IE2000 IP67 Series

- Wall-mount IP66/IP67 switch, up to 20 ports with M12 interfaces
- Layer 2 or Layer 3 (limited features)
- Up to 8 ports of PoE/PoE+
- Cisco DNA Center management

## Next steps

To find out more about

Cisco's Industrial Ethernet Switching Portfolio, visit www.cisco.com/go/ie



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