Resilient, easy-to-deploy Switches enable scaling 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).

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 deployment 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 operation 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
Industrial Ethernet Switches: Resilient, secure, and zero-touch deployment

Cisco IE switches blend reliability with high availability technology to help you quickly scale your rapidly increasing network endpoints and applications while maintaining network-wide resilience. Cisco’s network- as-a-sensor approach integrates cybersecurity throughout the network, maximizing security visibility and control and providing valuable insights into traffic flows, while continuously monitoring all network activity.

Here are some of the key capabilities the Industrial Ethernet switches offer:

- **Inline power makes it easy for you to move devices** such as IP cameras, IP phones, badge readers, wireless access points, and more without an overhaul of the electrical layout.
- **Superior management and automation** through native support of industrial protocols such as Common Industrial Protocol (CIP), Ethernet/IP, PROFINET, and more.
- **Easy deployment lowers Operational Expenses (OpEx) costs** with zero-touch discovery, express setup, and fast boot-up time.
- **Cisco IOS® Software features that can be field upgradeable** with modular software licensing for a smooth IT integration and also ensure end-to-end enterprise-wide policy and service delivery consistency.
- **Integrated cybersecurity functionalities**, including port security, dynamic port-based authentication and much more.
- **Designed and certified for all main industrial vertical application areas**, including general industrial, manufacturing, oil and gas, mining, transportation, and utilities, along with associated environmental requirements and standards.
- **Standard 5-year hardware warranty on all models.**

Cisco IE Ethernet switch models include:

- **Cisco IE 1000 Series Switches**: Very compact fixed lightly managed switching platform that includes various models providing up to 10 Ethernet interfaces including GE fiber uplinks options and multiple PoE/PoE+ ports.
- **Cisco IE 2000 Series Switches**: Compact fixed switching platform available in two form factors - DIN rail mounting or wall or pole mounting qualified for Ingress Protection 67 (*Cisco IE 2000 IP67 model*). The 2000 models offer up to 16 10/100Base-T, or Fast Ethernet, interfaces, and two Gigabit Ethernet interfaces. The 2000 IP67 model supports up to 24 Ethernet interfaces. The IE 2000U is designed for specific electrical utility applications.
- **Cisco 2500 Series Connected Grid Switches**: A series of 19-inch, one-rack unit fixed-configuration switches designed for electrical utility applications.
- **Cisco IE 3000 Series Switches**: Multilayer switching modular platform that includes a main module and expansion module so you can scale the configuration up to 26 Ethernet interfaces. A fixed 19-inch, one- rack unit model is also available, the Cisco IE 3010 Series Switches.
Use cases

The ruggedized Cisco IE switches form the networking infrastructure foundation for a wide array of technology industrial applications and processes, such as:

- Factory automation
- Warehouses and distribution centers
- Intelligent transportation systems
- Substation automation
- Mining operations
- Oil and gas refining and delivery systems
- Surveillance and remote-monitoring functions
- and many more industrial IoT use cases

- **Cisco Catalyst IE3200 Rugged Series**: The Cisco Catalyst IE3200 Rugged Series brings intent-based networking to industrial use cases. It is a secure, fixed, full-Gigabit industrial switching platform managed with Cisco DNA Center. With 8 PoE+ in a compact form factor, these rugged switches are designed for power and space-constrained areas.

- **Cisco Catalyst IE3300 Rugged Series**: Full Gigabit Ethernet with a modular, optimized design. Expandable up to 26 ports in a compact form factor, these rugged network switches are optimized for size, power and performance. They can deliver up to 24 ports of PoE, or 16 ports of PoE+, and bring Cisco intent-based networking to Industrial Ethernet applications.

- **Cisco Catalyst IE3400 Rugged Series**: Full Gigabit Ethernet switch solutions with advanced features in a modular, future-proof design. Expandable up to 26 ports in a compact form factor, these rugged switches are optimized for size and power, and bring Cisco intent-based networking to Industrial Ethernet applications.

- **Cisco IE 4000 Series Switches**: Industry’s first DIN rail–mounted 40 Gigabit Ethernet switch platform that offers high bandwidth and low latency. Available in various models with up to 20 Gigabit Ethernet interfaces.

- **Cisco IE 4010 Series Switches**: 19-inch, one-rack unit switches with 28 GE interfaces and up to 24 PoE/PoE+ enabled ports.

- **Cisco IE 5000 Series Switches**: A 19-inch one-rack unit multi-10 Gbps aggregation switch equipped with 24 Gigabit Ethernet ports plus 4 10-Gigabit or 4 1-Gigabit ports, making it ideal for the aggregation and/or backbones in large-scale industrial networks.

To find out more about the Cisco Industrial Ethernet switch series, visit [www.cisco.com/go/ie](http://www.cisco.com/go/ie) and contact your Cisco representative.