

# Cisco Catalyst IE3x00 Rugged Series Switches Family



## Overview of Cisco Catalyst IE3x00 Rugged switching family

### Q: What is the IE3x00 Rugged switching family?

A: IE3x00 refers to the latest family of din rail mount industrial ethernet switches (Cisco Catalyst IE3100 Rugged Series, Catalyst IE3200 Rugged Series, Catalyst IE3300 Rugged Series, Catalyst IE3400 Rugged Series) introduced in Cisco's Industrial IoT switching portfolio:

- The Cisco Catalyst IE3100 Rugged Series based systems have fixed ports with different PIDs having different number of ports (see Table 1).
- The Cisco Catalyst IE3200 Rugged Series base system has a fixed port count of 2 Gigabit SFP uplinks, and 8 copper gigabit downlinks.
- The Cisco Catalyst IE3300 Rugged Series base system can expand its port count with additional modules. The base system has 2 Gigabit SFP uplinks, and 8 copper gigabit downlinks.

- The Cisco Catalyst IE3400 Rugged Series base system supports advanced hardware features and can expand its port count with additional modules. The base system has 2 Gigabit SFP uplinks, and 8 copper gigabit downlinks.
- All Cisco Catalyst IE3x00 Rugged products are powered by the Cisco® IOS XE operating system.

### Q: How do I position Cisco Catalyst IE3100/IE3200/IE3300/IE3400 Rugged with other Cisco Industrial Ethernet switching products?

A: Each product of the IE3x00 family fit specific needs.

- **Cisco Catalyst IE3100 Rugged Series** – The Cisco Catalyst IE3100 Rugged Series is a Layer 2 switch in a very compact form-factor, making it the ideal solution for use cases where space is an issue (machine builders, small cabinets, etc.). It is an upgrade option for the IE2000 where PoE is not required.

- **Cisco Catalyst IE3200 Rugged Series** – The Cisco Catalyst IE3200 Rugged Series is a Layer 2 switch with high-density PoE/PoE+ ports. It is an upgrade option for the IE2000 for customers that need PoE.
- **Cisco Catalyst IE3300 Rugged Series** – The Cisco Catalyst IE3300 Rugged Series is a Layer 3 switch offering high-density PoE/PoE+/4PPoE ports. It can be expanded with modules supporting a wide variety of additional ports. It is an upgrade option for the IE3000 for customers that need advanced networking features, Cisco IOx applications and port modularity.
- **Cisco Catalyst IE3400 Rugged Series** – Similar to the IE3300, the Cisco Catalyst IE3400 is a modular layer 3 switch with PoE/PoE+. It is the best fit for customers who require advanced features such as full Cisco TrustSec, HSR, PRP, DLR, L2NAT, and Cisco IOx applications. Check the data sheet for specific feature availability.

### Q: Why Cisco Catalyst IE3100/IE3200/IE3300/IE3400 Rugged Series?

A: Cisco Catalyst IE3x00 Rugged family provides significant benefits to the industrial product switching line. Cisco Catalyst IE3x00 Rugged offers Gigabit Ethernet in compact and power efficient din-rail form factor. Cisco Catalyst IE3x00 Rugged runs on the modern Cisco IOS XE operating system with built-in security and trust protocols. The series offers advanced security and industrial protocol support. The IE3200/IE3300/IE3400 deliver high-density Power over Ethernet (PoE; up to 16 ports of PoE up to 90W). The Cisco Catalyst IE3400 Rugged Series platform is capable of enforcing dynamic and automated network segmentation using TrustSec and advanced industrial redundancy protocols such as High-Availability Seamless Redundancy (HSR), Parallel Redundancy Protocol (PRP), and Device Level Ring (DLR). See information below for differences between members of the IE3x00 series.

### Q: Where do I deploy a Cisco Catalyst IE3100/IE3200/IE3300/IE3400 Rugged switching product?

A: Cisco Catalyst IE3x00 Rugged can be deployed in any industrial type or extended enterprise deployment. For instance, it can

be deployed in any place with no temperature control, such as outdoor spaces, warehouses, factory floors, and substations. Cisco Catalyst IE3x00 Rugged is fan-less (it has no moving parts) and purpose-built to operate in harsh environments, in temperatures ranging from -40°C to 75°C. It is built to withstand shock and vibration in industrial environments and is qualified to meet certifications and standards for industry compliance. In addition, the Catalyst 3400H Heavy Duty is IP67-certified to operate in wet environments.

### Q: What base systems make up in Cisco Catalyst IE3x00 Rugged family?

A: There are base system models:

- **IE-3400-8T2S** – This model is expandable and supports advanced features. It has two Gigabit SFP ports and eight copper Gigabit Ethernet ports on the base system. The Cisco Catalyst IE3400 Rugged Series can support advanced features because it has additional capabilities in the hardware. Because it is expandable, the number of additional ports can be increased by 8 or 16 by attaching an 8-port or 16-port IEM 3300 module or an 8-port IEM 3400 module.
- **IE-3400-8P2S** – This model is expandable and supports advanced features. It has two

Gigabit SFP ports and eight copper Gigabit Ethernet ports on the base system with PoE/PoE+. The Cisco Catalyst IE3400 Rugged Series can support advanced features because it has additional capabilities in the hardware. Because it is expandable, the number of additional ports can be increased by 8 or 16 by attaching an 8-port or 16-port IEM 3300 module or an 8-port IEM 3400 module.

- **IE-3300-8T2S** – This model is expandable. It has two Gigabit SFP ports and eight copper Gigabit Ethernet ports on the base without PoE. Because it is expandable, the number of additional ports can be increased by 8 or 16 with an 8 port or 16 port IEM 3300 module.
- **IE-3300-8P2S** – This model is expandable. It has 2 Gig SFP ports and 8 Copper Gigabit Ethernet ports on the base with PoE/PoE+. Because it is expandable, the number of additional ports can be increased by 8 or 16 with an 8 port or 16 port IEM 3300 module. It can support up to 16 PoE+ ports with the proper Power supply.
- **IE-3300-8T2X** – This model is expandable. It has 2 10Gig SFP ports and 8 Copper Gigabit Ethernet ports on the base without PoE. Because it is expandable, the number of additional ports can be increased by 8 or 16 with an 8 port or 16 port IEM 3300 module.

- **IE-3300-8U2X** – This model is expandable. It has 2 10Gig SFP ports and 8 Copper Gigabit Ethernet ports on the base with PoE/PoE+, UPoE (60W 802.3bt type 3). Because it is expandable, the number of additional ports can be increased by 4, 8 or 16 with a 4 port, 8 port or 16 port IEM 3300 module. It can support up to 16 PoE+ ports, or 4 90W PoE (802.3bt type 4) ports with the proper Power supply.
- **IE-3200-8T2S** – This is a fixed model and is not expandable. It has two Gigabit Small Form-Factor Pluggable (SFP) ports and eight copper Gigabit Ethernet (GE) ports without Power over Ethernet (PoE).
- **IE-3200-8P2S** – This is a fixed model and is not expandable. It has two Gigabit SFP ports and eight copper Gigabit Ethernet ports with PoE/PoE+.
- **IE-3105-18T2C** – This is a fixed model and is not expandable. It has 2 Gigabit Ethernet combo ports (copper or SFP) for uplinks and 18 Gigabit copper ports for downlinks. Power over Ethernet (PoE) is not supported. The IE-3105 can support advanced features because it has additional capabilities in the hardware.
- **IE-3105-8T2C** – This is a fixed model and is not expandable. It has 2 Gigabit Ethernet combo ports (copper or SFP) for uplinks and 8 Gigabit copper ports for downlinks. Power over Ethernet (PoE) is not supported. The IE-3105 can support advanced features because it has additional capabilities in the hardware.
- **IE-3100-18T2C** – This is a fixed model and is not expandable. It has 2 Gigabit Ethernet combo ports (copper or SFP) for uplinks and 18 Gigabit copper ports for downlinks. Power over Ethernet (PoE) is not supported.
- **IE-3100-8T4S** – This is a fixed model and is not expandable. It has 4 Gigabit Ethernet SFP ports for uplinks and 8 Gigabit copper ports for downlinks. Power over Ethernet (PoE) is not supported.
- **IE-3100-8T2C** – This is a fixed model and is not expandable. It has 2 Gigabit Ethernet combo ports (copper or SFP) for uplinks and 8 Gigabit copper ports for downlinks. Power over Ethernet (PoE) is not supported.
- **IE-3100-4T2S** – This is a fixed model and is not expandable. It has 2 Gigabit Ethernet SFP ports for uplinks and 4 Gigabit copper ports for downlinks. Power over Ethernet (PoE) is not supported.

Table 1 outlines high level features of each of the models. Table 2 details the expansion modules.

Table 1. Cisco Catalyst IE3x00 Rugged models with features

| Base system<br>Product ID (PID) | Interfaces                                        | PoE/PoE+ | UPoE/4PPoE<br>(60W) | Expandable | Advanced<br>hardware<br>features |
|---------------------------------|---------------------------------------------------|----------|---------------------|------------|----------------------------------|
| IE-3100-4T2S-E                  | 2 Gig SFP and 4 copper Gigabit                    | No       | No                  | No         | No                               |
| IE-3100-8T2C-E                  | 2 Gig combo (SFP or Copper) and 8 copper Gigabit  | No       | No                  | No         | No                               |
| IE-3100-8T4S-E                  | 4 Gig SFP and 8 copper Gigabit                    | No       | No                  | No         | No                               |
| IE-3105-8T2C-E                  | 2 Gig combo (SFP or Copper) and 8 copper Gigabit  | No       | No                  | No         | Yes                              |
| IE-3100-18T2C-E                 | 2 Gig combo (SFP or Copper) and 18 copper Gigabit | No       | No                  | No         | No                               |
| IE-3105-18T2C-E                 | 2 Gig combo (SFP or Copper) and 18 copper Gigabit | No       | No                  | No         | Yes                              |
| IE-3200-8T2S-E                  | 2 Gig SFP and 8 copper Gigabit                    | No       | No                  | No         | No                               |
| IE-3200-8P2S-E                  | 2 Gig SFP and 8 copper Gigabit                    | Yes      | No                  | No         | No                               |
| IE-3300-8T2S-E                  | 2 Gig SFP and 8 copper Gigabit                    | No       | No                  | Yes        | No                               |
| IE-3300-8T2S-A                  | 2 Gig SFP and 8 copper Gigabit                    | No       | No                  | Yes        | No                               |
| IE-3300-8P2S-E                  | 2 Gig SFP and 8 copper Gigabit                    | Yes      | No                  | Yes        | No                               |
| IE-3300-8P2S-A                  | 2 Gig SFP and 8 copper Gigabit                    | Yes      | No                  | Yes        | No                               |
| IE-3300-8T2X-E                  | 2 10Gig SFP and 8 copper Gigabit                  | No       | No                  | Yes        | No                               |

| Base system<br>Product ID (PID) | Interfaces                       | PoE/PoE+ | UPoE/4PPoE<br>(60W) | Expandable | Advanced<br>hardware<br>features |
|---------------------------------|----------------------------------|----------|---------------------|------------|----------------------------------|
| IE-3300-8T2X-A                  | 2 10Gig SFP and 8 copper Gigabit | No       | No                  | Yes        | No                               |
| IE-3300-8U2X-E                  | 2 10Gig SFP and 8 copper Gigabit | Yes      | Yes                 | Yes        | No                               |
| IE-3300-8U2X-A                  | 2 10Gig SFP and 8 copper Gigabit | Yes      | Yes                 | Yes        | No                               |
| IE-3400-8T2S-E                  | 2 Gig SFP and 8 copper Gigabit   | No       | No                  | Yes        | Yes                              |
| IE-3400-8T2S-A                  | 2 Gig SFP and 8 copper Gigabit   | No       | No                  | Yes        | Yes                              |
| IE-3400-8P2S-E                  | 2 Gig SFP and 8 copper Gigabit   | Yes      | No                  | Yes        | Yes                              |
| IE-3400-8P2S-A                  | 2 Gig SFP and 8 copper Gigabit   | Yes      | No                  | Yes        | Yes                              |

Table 2. Expansion modules for IE3300 and IE3400

| Module PID    | Interfaces and types          | Compatible base system(s)                                                                | PoE/PoE+ | 90-W PoE | Advanced<br>hardware<br>features |
|---------------|-------------------------------|------------------------------------------------------------------------------------------|----------|----------|----------------------------------|
| IEM-3300-8T   | 8 copper Gigabit              | IE-3300-8T2C, IE-3300-8P2S,<br>IE-3300-8T2X, IE-3300-8U2X,<br>IE-3400-8T2S, IE-3400-8P2S | No       | No       | No                               |
| IEM-3300-6T2S | 2 SFP and 6 copper<br>Gigabit | IE-3300-8T2C, IE-3300-8P2S,<br>IE-3300-8T2X, IE-3300-8U2X,<br>IE-3400-8T2S, IE-3400-8P2S | No       | No       | No                               |

| Module PID     | Interfaces and types        | Compatible base system(s)                                                                | PoE/PoE+ | 90-W PoE | Advanced hardware features |
|----------------|-----------------------------|------------------------------------------------------------------------------------------|----------|----------|----------------------------|
| IEM-3300-16T   | 8 copper Gigabit            | IE-3300-8T2C, IE-3300-8P2S,<br>IE-3300-8T2X, IE-3300-8U2X,<br>IE-3400-8T2S, IE-3400-8P2S | No       | No       | No                         |
| IEM-3300-14T2S | 2 SFP and 14 copper Gigabit | IE-3300-8T2C, IE-3300-8P2S,<br>IE-3300-8T2X, IE-3300-8U2X,<br>IE-3400-8T2S, IE-3400-8P2S | No       | No       | No                         |
| IEM-3300-8P    | 8 copper Gigabit            | IE-3300-8P2S,<br>IE-3300-8U2X,<br>IE-3400-8P2S                                           | Yes      | No       | No                         |
| IEM-3300-8S    | 8 SFP Gigabit               | IE-3300-8T2C, IE-3300-8P2S,<br>IE-3300-8T2X, IE-3300-8U2X,<br>IE-3400-8T2S, IE-3400-8P2S | No       | No       | No                         |
| IEM-3300-16P   | 16 copper Gigabit           | IE-3300-8P2S,<br>IE-3300-8U2X,<br>IE-3400-8P2S                                           | Yes      | No       | No                         |
| IEM-3300-4MU   | 4 copper 2.5 Gigabit        | IE-3300-8P2S,<br>IE-3300-8U2X,<br>IE-3400-8P2S                                           | Yes      | Yes      | No                         |

| Module PID  | Interfaces and types | Compatible base system(s)  | PoE/PoE+ | 90-W PoE | Advanced hardware features |
|-------------|----------------------|----------------------------|----------|----------|----------------------------|
| IEM-3400-8T | 8 copper Gigabit     | IE-3400-8T2S, IE-3400-8P2S | No       | No       | Yes                        |
| IEM-3400-8S | 8 SFP Gigabit        | IE-3400-8T2S, IE-3400-8P2S | No       | No       | Yes                        |
| IEM-3400-8P | 8 copper Gigabit     | IE-3400-8P2S               | Yes      | No       | Yes                        |

**Q: How many expansion modules can a Cisco Catalyst IE3300 or IE3400 Rugged Series have?**

A: A single expansion module can be attached to a base system at a time. An expansion module cannot have another expansion module attached. Expansion modules are not hot swappable.

**Q: What are the advanced hardware features of the Cisco Catalyst IE3400 Rugged Series?**

A: These are features that directly impact Ethernet packets in the data path. Features such as Cisco's Scalable Group Tagging (SGT) and Security Group Access Control Lists (SGACL), Parallel Redundancy Protocol (PRP), Layer 2 Network Address Translation (L2NAT), High Speed Redundancy Protocol (HSR) and Device Level Ring (DLR) are examples of features that

require special hardware that is available in the Cisco Catalyst IE3400 Rugged Series base system and in the IEM3400 modules. See the Cisco Catalyst IE3400 Rugged Series data sheet for a complete list of features.

**Q: What are the IE3105 additional hardware features?**

A: These are features that directly impact Ethernet packets in the data path. Features such as Layer 2 Network Address Translation (L2NAT) are examples of features that require special hardware that is available in the Cisco Catalyst IE3105 Rugged Series system. See the Cisco Catalyst IE3100 Rugged Series data sheet for a complete list of features.

**Q: What is the hardware difference between the Cisco Catalyst IE3300 Rugged Series base system and Cisco Catalyst IE3400 Rugged Series base system?**

A: The primary difference is the presence of an additional Field Programmable Gateway Array (FPGA) in the data path. This additional FPGA in the Cisco Catalyst IE3400 Rugged Series enables advanced features such as, but not limited to HSR, Cisco TrustSec®, PRP.

**Q: What is the primary difference between the Cisco Catalyst IE3200 Rugged Series and Cisco Catalyst IE3300 Rugged Series?**

A: The primary difference is modularity. The Cisco Catalyst IE3300 Rugged Series base and the Cisco Catalyst IE3200 Rugged Series base have the same hardware switching capabilities. The Cisco Catalyst IE3300 Rugged Series



supports expansion modules to increase the number of ports. The IE-3300-8U2X and IE-3300-8T2X have 10Gig uplink ports. IE3300 Rugged Series support IOx App hosting which includes Cyber Vision. The Cisco Catalyst IE3300 Rugged Series is a Layer 3 switch, whereas the Cisco Catalyst IE3200 Rugged Series is a Layer 2 switch.

**Q: What is the primary difference between the Cisco Catalyst IE3100 and IE3200 Rugged Series?**

A: The primary difference is size, PoE support and available port count. The Cisco Catalyst IE3100 Rugged Series does not support PoE on any product. The IE3200 supports PoE/PoE+ on the IE3200-8P2S-E. IE3100 rugged series have multiple port counts available (see Table 1). Because the IE3100 supports different port counts, its size varies. The IE3200 has a fixed size.

**Q: Which models of the Cisco Catalyst IE3x00 family support the Cisco Cyber Vision sensor?**

A: Cyber Vision is a software solution that provides visibility into Operational Technology (OT) assets and their security posture. It automatically builds and maintains comprehensive asset inventories, identifies vulnerabilities, and detects cybersecurity events. It leverages a two-tier architecture with sensors embedded into Cisco industrial network equipment for collecting and decoding network traffic and central software for storing and analyzing data.

The Cyber Vision sensor application can be installed in all models of IE3400 (both Rugged and Heavy Duty series) as well as all models of IE3300 Rugged Series (both 1Gig uplinks and 10Gig uplinks). Previously only the IE3300 10Gig uplink series supported Cyber Vision sensor application. Starting with HW version 6, the IE3300 1Gig uplink Rugged Series added support for application hosting which includes Cyber vision.

**Q: When did all models in the IE3300 series support Cyber Vision Sensor?**

A: All IE3300 base systems starting with HW version 6 support Cyber Vision Sensor application. Originally only the IE3300 with 10Gig uplinks supported Cyber Vision Sensor application because it has 4GB of DRAM. The IE3300 models with 1Gig uplinks originally had only 2GB of DRAM and did not support IOx applications or Cyber Vision Sensor. They since had their DRAM upgraded to 4GB as well. To verify if an IE-3300-8T2S or IE-3300-8P2S has 4GB of DRAM, you can check the HW version. HW version 6 or higher has 4GB of DRAM.

**Q: Does the Cisco Catalyst IE3x00 family support any other IOx application?**

A: Starting with HW version 6 or higher, all models of Catalyst IE3300, along with all models of Catalyst IE3400, also support Cisco Secure Equipment Access and Cisco Edge

Intelligence. Cisco Secure Equipment Access allows operations teams to securely access, monitor, debug, or configure a remote industrial asset or machine. Cisco Edge Intelligence enables extraction, transformation, governance, and delivery of real time operations data to applications residing in datacenters or the cloud.

**Q: Can customers return older IE-3300-8T2S and IE-3300-8P2S for newer models so they can run Cyber Vision Sensor application?**

A: No. Customers who purchased IE3300 with 2GB of DRAM cannot exchange or return for free a newer model IE3300 just so they can get 4GB of DRAM.

**Q: How can I determine if the IE3300s I have in my network can host the Cyber Vision sensor?**

A: Check the hardware version id on the packaging box or on the side of the switch, or run the “show version” command on the switch CLI. Cyber Vision is supported if the hardware version of the IE3300 is 6 or above.

**Q: If my customer needs advanced switching features, should they use the Cisco IE4000 Series or the Catalyst IE3400 Rugged Series?**

A: Advanced features such as PRP and HSR are available on the IE4000 and IE3400. Table 3 provides more details on the hardware differences between the two platforms.

Table 3. Hardware feature comparison between Catalyst IE34000 and IE4000

| Feature/Hardware resource                                | Cisco Catalyst IE3400 Rugged Series         | Cisco IE4000 Series  |
|----------------------------------------------------------|---------------------------------------------|----------------------|
| Number of GE ports                                       | 26 (10+16)                                  | 20                   |
| Operating System                                         | IOS XE                                      | IOS Classic          |
| SD-Access for IoT (with Cisco DNA Advantage)             | Yes (Policy Extended Edge Node)             | Extended Node        |
| Advanced industrial features (L2NAT, HSR, PRP, TrustSec) | Yes                                         | Yes                  |
| TrustSec (SGT/SGACL)                                     | Yes (22x22)                                 | 1xN                  |
| MACsec                                                   | Yes (256-bit)                               | 128-bit              |
| IOX/EFM support (DRAM)                                   | Yes                                         | No                   |
| Layer 3 - IP Services/Network advantage                  | Yes                                         | Yes                  |
| IPv4 indirect routes                                     | 3000                                        | 8000                 |
| VLANs                                                    | 256                                         | 1000                 |
| MAC addresses                                            | 16,000                                      | 16,000               |
| NetFlow cache                                            | 1000                                        | 16,000               |
| HSR/PRP                                                  | Yes                                         | Yes plus HSR Quadbox |
| PoE budget (for models supporting PoE)                   | 240W Base, 480W total with Expansion module | 120/240W             |

**Note:** Only IE-4000-8GT8GP-4G model supports 240W PoE budget

## Hardware details

### Q: What are the dimensions of Cisco Catalyst IE3100 Rugged Series?

A: IE3100, and IE3105 units have different dimensions based on port count.

Table 4. Catalyst IE3100 family dimensions

| IE3100 Product ID            | Dimensions                                                                    |
|------------------------------|-------------------------------------------------------------------------------|
| IE-3100-4T2S                 | 5.0 in. tall x 4.33 in. deep x 2.55 in. wide<br>12.7 cm x 11.0 cm x 6.48 cm   |
| IE-3100-8T2C<br>IE-3100-8T4S | 5.0 in. tall x 4.33 in. deep x 3.0 in. wide<br>12.7 cm x 11.0 cm x 7.62 cm    |
| IE-3100-18T2C                | 5.0 in. tall x 5.08 in. deep x 4.30 in. wide<br>12.7 cm x 12.90 cm x 10.92 cm |
| IE-3105-8T2C                 | 5.0 in. tall x 5.08 in. deep x 3.0 in. wide<br>12.7 cm x 12.90 cm x 7.62 cm   |
| IE-3105-18T2C                | 5.0 in. tall x 5.08 in. deep x 4.30 in. wide<br>12.7 cm x 12.90 cm x 10.92 cm |

### Q: What are the dimensions of Cisco Catalyst IE3200/IE3300/IE3400 Rugged Series?

A: Base units have the same dimensions.

Table 5. Catalyst IE3200/IE3300/IE3400 base unit dimensions

| Catalyst IE3200/IE3300/IE3400 Product ID | Dimensions                               |
|------------------------------------------|------------------------------------------|
| IE-3200                                  | 6 in. tall x 5.3 in. deep x 3.6 in. wide |
| IE-3300-8T2S, IE-3300-8P2S, IE-3300-8T2X | 15.24 cm x 13.46 cm x 9.14 cm            |
| IE-3400-8T2S                             |                                          |
| IE-3300-8U2X                             | 6 in. X 4.4 in. X 5.3 in.                |
| IE-3400-8P2S                             | 15.24 cm. x 11.2 cm. x 13.5cm            |

### Q: What are the dimensions of the expansion modules?

A: Expansion modules come in two sizes—single-wide and double-wide. Table 6 outlines the sizes of Cisco Catalyst IE3300/IE3400- 8T2S Rugged with a single-wide module and a double-wide module.

Table 6. Expansion module dimensions with Base system

| Single or double wide expansion module | Dimensions of Expansion and Base                                           |
|----------------------------------------|----------------------------------------------------------------------------|
| Single-wide module with base system    | 6 in. tall x 5.3 in. deep x 5.6 in. wide<br>15.24 cm x 13.46 cm x 9.14 cm  |
| Double-wide with base system           | 6 in. tall x 5.3 in. deep x 6.6 in. wide<br>15.24 cm x 13.46 cm x 16.76 cm |

**Q: What is the PoE budget of Cisco Catalyst IE3200/IE3300/IE3400 Rugged PoE capable products?**

A: Every RJ45 port on PoE-capable Cisco Catalyst IE-3200-8P2S, IE-3300-8P2S, and IE-3400-8P2S Rugged products support PoE and PoE+. The base module alone has a PoE budget of 240W (8 multiplied by 30W). The maximum PoE budget for the base and expansion module is 480W. This can be achieved with PoE-capable expansion modules. This applies to 90W expansion module.

The IE-3300-8U2X supports PoE, PoE+ and UPoE (802.3bt type 3). The maximum PoE budget is 360W on the base system and 480W with the expansion module.

**Q: How much power do Cisco Catalyst IE3100/IE3200/IE3300/IE3400 Rugged products consume?**

A: The amount of power consumed will vary depending on the product ID, number of interfaces, and PoE. PoE power is not consumed on Cisco Catalyst IE3200/IE3300/IE3400 Rugged itself. PoE power is mostly consumed on the powered device. There is minimal loss of power on Cisco Catalyst IE3200/IE3300/IE3400 Rugged to provide PoE. The presence of an expansion module will impact overall power consumption.

**Q: How does Cisco Catalyst IE3100/IE3200/IE3300/IE3400 Rugged power consumption compare with the IE2000 and the IE4000?**

A: Table 7 displays comparable numbers of Ethernet interfaces in the three din-rail products.

Table 7. Power consumption comparisons

| Non-PoE PID                 | Power consumption (worst case) |
|-----------------------------|--------------------------------|
| IE-3100-4T2S                | 14W                            |
| IE-3100-8T2C                | 17.7W                          |
| IE-3100-8T4S                | 17.8W                          |
| IE-3100-18T2C               | 36.7W                          |
| IE-3105-8T2C                | 28W                            |
| IE-3105-18T2C               | 36.7W                          |
| IE-3300-8T                  | 33W                            |
| IE-3300-8T + IEM-3300-14T2S | 46W                            |
| IE-3400-8T2S                | 45W                            |
| IE-4000-8GT4G-E             | 35W                            |
| IE-2000-8TC-G               | 20W                            |
| IE-3300-8P                  | 34W                            |
| IE-3300-8P + IEM-3300-16P   | 59W                            |
| IE-4000-4GC4GP4G-E          | 40W                            |
| IE-2000-16PTC-G             | 30W                            |

**Q: How does Cisco Catalyst IE3100/IE3200/IE3300/IE3400 Rugged eliminate heat?**

A: Cisco Catalyst IE3x00 Rugged products are fan-less. They eliminate heat through the chassis and fins. As a consequence, Cisco Catalyst IE3x00 Rugged can be hot to the touch. Hot to the touch does not mean Cisco Catalyst IE3x00 Rugged is not operating properly, or that it will be damaged. Cisco Catalyst IE3x00 Rugged was designed to operate in hot environments for long periods of time.

**Q: Does Cisco Catalyst IE3100/IE3200/IE3300/IE3400 Rugged support 100 Mbps SFPs?**

A: Yes. See the Datasheet for each product or supported Transceiver Matrix per product here: <https://tmgmatrix.cisco.com/home>.

**Q: Will Cisco Catalyst IE3100/IE3200/IE3300/IE3400 Rugged work at 10-Mbps or 100-Mbps speeds?**

A: Yes. The copper Ethernet interfaces can operate at speeds as low as 10 Mbps.

**Q: Does Cisco Catalyst IE3100/IE3200/IE3300/IE3400 Rugged support 10-Gigabit interfaces?**

A: Yes. The IE-3300-8U2X and IE-3300-8T2X support 2 10Gig SFP interfaces.

**Q: Does Cisco Catalyst IE3100/IE3200/IE3300/IE3400 Rugged support M-Gigabit speed interfaces?**

A: Yes: The IEM-3300-4MU Expansion module supports M-Gigabit interface speeds.

The IE-3300-8T2X, and IE-3300-8P2X support 10Gigabit uplinks and are recommended when using M-Gigabit connections. The Cisco Catalyst IE3100/IE3200/IE3300/IE3400 base systems do not support M-Gigabit.

**Q: Does Cisco Catalyst IE3100/IE3200/IE3300/IE3400 Rugged have a fan?**

A: No. All Cisco Catalyst IE3x00 Rugged models are fan-less. Cooling is achieved by eliminating heat through the shell and fins of the product. No fans on the expansion modules.

**Q: Is Cisco Catalyst IE3100/IE3200/IE3300/IE3400 Rugged din-rail mounted or 19-inch rack mounted?**

A: Cisco Catalyst IE3x00 Rugged are din-rail mount. For 19-inch rack mounting, you can use a din-rail rack mount kit into the 19-inch rack. See the Cisco product ID: STK-RACK-DINRAIL=.

## Cisco Catalyst IE3x00 Rugged software and licensing

**Q: Does Cisco Catalyst IE3100/IE3200/IE3300/IE3400 Rugged Series run Cisco IOS XE?**

A: Yes. This is a big difference from the other IE switching products. Other IE products, including the IE2000, IE3000, IE4000, and IE5000 run classic Cisco IOS® Software. 17.11.1 is an example of a SW release supported on Cisco Catalyst IE3x00 Rugged. Other IE din rail switches (such as IE4000) are running 15.2(x)E.

**Q: What licensing is available for Cisco Catalyst IE3100/IE3200/IE3300/IE3400 Rugged?**

A: Cisco Catalyst IE3x00 Rugged support Cisco Smart Licensing. They support the following licenses:

- **Network Essentials** (-E), which is available by default and is similar to LAN Base on the IE4000. This is a Layer 2 feature set. Network Essentials is perpetual, meaning it doesn't expire.

- Network Advantage (-A)** is perpetual. This is similar to IP Services on the IE4000. This is the Layer 3 feature set that includes dynamic routing. It can be upgraded from -E or ordered directly on Cisco Commerce Workspace (CCW). To order on CCW will require details of the customer's Smart Account.
  - Cisco DNA Essentials** – This is an add-on subscription license for Cisco DNA Center basic management, in either 3, 5, or 7 year terms.
  - Cisco DNA Advantage** – This is an add-on subscription license for Cisco DNA Center Software-Defined Access (SD-Access) Extended Nodes. It is also available in either 3, 5, or 7year terms. The Network Advantage License is required on the IE switch for Cisco DNA Advantage license.
  - MRP Client/Manager** – This is an enforced feature license. Required for running Media Redundancy Protocol (MRP). Its perpetual Smart Account required. This license is only required for IOS XE releases 17.6.x and earlier. Starting IOS XE release 17.7.1, an MRP license is not required.
- The IE3x00 switches support Smart Licensing Using Policy as of 17.3.2, or 17.4.1 release of IOS-XE.

Table 8 details the available licenses and their features.

Table 8. Cisco Catalyst IE3x00 Rugged licenses and features

| License name/SKU         | Duration    | Feature set                                                                                                                                                                               | Where applied                                                                    |
|--------------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Network Essential “-E”   | Perpetual   | Layer 2 features, static L3 IPv4 routes, L2NAT, PRP, HSR and IOx application hosting for those models which support<br><br>A default license that is installed at the time of manufacture | Enabled on the switch at the time of manufacture<br><br>No license server needed |
| Network Advantage “-A”   | Perpetual   | Layer 3 IPv4 and IPv6 dynamic routing, VRF, Cisco TrustSec, MACsec-256 bit                                                                                                                | On the switch<br><br>A Cisco Smart Account is required                           |
| Cisco DNA Essential “-E” | Term- based | Basic network management only by Cisco DNA Center, NetFlow                                                                                                                                | On the switch and on Cisco DNA Center<br><br>A Cisco Smart Account is required   |

| License name/SKU         | Duration    | Feature set                                                  | Where applied                                                                          |
|--------------------------|-------------|--------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Cisco DNA Advantage “-A” | Term- based | Extended Node, Fabric Edge, ETA                              | On the switch and on Cisco DNA Center<br>A Cisco Smart Account is required             |
| MRP Client/Manager       | Perpetual   | Enforced Feature license for Media Redundancy Protocol (MRP) | On the switch with IOS-XE version prior to 17.7.1<br>A Cisco Smart Account is required |

**Note:** The Cisco Catalyst IE3100 and IE3200 Rugged Series supports only Network Essentials, L2NAT is supported on IE3105, and is not supported on IE3100 and IE3200. Cisco TrustSec, PRP, and HSR are available on the Cisco Catalyst IE3400 Rugged Series only.

**Note:** Cisco DNA Essentials licenses are available for low, medium and high port counts as well as for different year terms. see datasheet for complete detailed list.

**Q: Will customers need a Smart Account for Network Essentials?**

A: Cisco Smart Account is not mandatory for Network Essentials. Customers and partners are advised to create a Smart Account to manage and make sure their Cisco software is compliant.

**Q: Will customers and partners need a Smart Account for Network Advantage or a Cisco DNA Essentials, Cisco DNA Advantage, or MRP License?**

A: Yes. A Cisco Smart Account is needed for these licenses.

**Q: Will Cisco Catalyst IE3100/IE3200/IE3300/IE3400 Rugged support the Smart License and Smart License Reservation?**

A: Yes. Cisco Catalyst IE3x00 will support the Smart License (SL) to interface with the cloud-based Smart Account, and the Smart License Reservation (SLR) to manage licenses for switches not able to connect to the cloud-based Smart Account. SL and SLR will be available starting with the release of Cisco IOS XE Release 16.11.1. Smart Licensing Using Policy starts with IOS-XE release 17.3.2 and 17.4.1.

**Q: What is the Cisco DNA Center and SD-Access support for Cisco Catalyst IE3x00 Rugged?**

A: Depending upon the IE3x00 model, the Cisco DNA Center and SDA support will vary. Table 9 shows which features of Cisco DNA Center and SDA are supported on the IE3x00 products.



Table 9. Summary of Support by Cisco DNA Center Cisco

| Cisco DNA Center and SDA Feature                                         | IE3x00 switch models that support that feature | Comments                                                                                                |
|--------------------------------------------------------------------------|------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Managed Asset with Cisco DNA Essential license                           | IE3100, IE3200, IE3300, IE3400                 | All IE3x00 products can be managed with Network Essentials level of support                             |
| SDA Extended Node support with Cisco DNA Essential license               | IE3200, IE3300                                 | The IE3100 is excluded from this feature<br>Network Essential required on IE3300 and IE3200             |
| SDA Policy Extended Node with Cisco DNA Advantage license                | IE3400                                         | Policy Extended Node brings support for security with MicroSegmentation (SGT/SGACL) in an extended role |
| SDA Fabric Edge behavior capable device with Cisco DNA Advantage license | NA                                             | No support for SDA Fabric Edge                                                                          |

The Cisco Catalyst IE3300 Rugged Series and Cisco Catalyst IE3400 Rugged Series models are supported as Extended Node starting in calendar year 2019. IE3200 are supported as Extended Nodes in Calendar year 2021. IE3100 support for Extended Node will be added sometime in calendar year 2023. Timing is based on the Cisco DNA Center schedule for

support. Cisco has not committed a firm date for release of this support yet. For Details about official support of any IE3x00 feature check the data sheet and Cisco IOS XE release notes for availability of SD-Access Fabric Edge support.

- [Cisco Catalyst IE3100 Rugged Series Data Sheet.](#)

- [Cisco Catalyst IE3200 Rugged Series Data Sheet.](#)
- [Cisco Catalyst IE3300 Rugged Series Data Sheet.](#)
- [Cisco Catalyst IE3400 Rugged Series Data Sheet.](#)