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 base 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 ports of Gigabit SFP or 2 ports of 10G 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 fits specific needs.

- **Cisco Catalyst IE3100 Rugged Series** – The Cisco Catalyst IE3100 Rugged Series is a Layer 2 switch in a very compact form-factor with PoE/PoE+ ports and conformal coating for added protection in corrosive environments, making it the ideal solution for use cases where space is an issue (machine builders, small cabinets, etc.), or who require PoE . It is an upgrade option to the IE2000 for customers who require PoE or conformal coating.
- **Cisco Catalyst IE3200 Rugged Series** – The Cisco Catalyst IE3200 Rugged Series is a Layer 2 switch with PoE/PoE+ ports. It is an upgrade option to the IE2000 for customers who require 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 to the IE3000 or IE4000 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. It is also an upgrade option to the IE3000 or IE4000 for customers that need advanced networking features, Cisco IOx applications and port modularity. 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 Ethernet product switching line. Cisco Catalyst IE3x00 Rugged offers Gigabit Ethernet in compact and power efficient din-rail form factor. Cisco Catalyst IE3x00 Rugged Series 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 and is supported by the Cisco Catalyst Center. The IE3100/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 IE3400H Heavy Duty is IP67-certified to operate in wet environments.

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

A: The following are the 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-3100-18T2C-CC** – 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 with conformal coating. 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-3100-8P2C** – 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 PoE/PoE+ ports for downlinks.
- **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.
- **IE-3100-4P2S** – This is a fixed model and is not expandable. It has 2 Gigabit Ethernet SFP ports for uplinks and 4 Gigabit copper PoE/PoE+ ports for downlinks.

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 Product ID (PID)	Interfaces	PoE/ PoE+	UPoE/ 4PPoE (60W)	Expandable	Advanced hardware features	Conformal coating
IE-3100-4T2S-E	2 Gig SFP and 4 copper Gigabit	No	No	No	No	No
IE-3100-4P2S-E	2 Gig SFP and 4 copper Gigabit	Yes	No	No	No	No
IE-3100-8T2C-E	2 Gig combo (SFP or Copper) and 8 copper Gigabit	No	No	No	No	No
IE-3100-8T4S-E	4 Gig SFP and 8 copper Gigabit	No	No	No	No	No
IE-3100-8P2C-E	2 Gig combo (SFP or Copper) and 8 copper Gigabit	Yes	No	No	No	No
IE-3105-8T2C-E	2 Gig combo (SFP or Copper) and 8 copper Gigabit	No	No	No	Yes	No
IE-3100-18T2C-CC-E	2 Gig combo (SFP or Copper) and 18 copper Gigabit	No	No	No	No	Yes
IE-3100-18T2C-E	2 Gig combo (SFP or Copper) and 18 copper Gigabit	No	No	No	No	No
IE-3105-18T2C-E	2 Gig combo (SFP or Copper) and 18 copper Gigabit	No	No	No	Yes	No
IE-3200-8T2S-E	2 Gig SFP and 8 copper Gigabit	No	No	No	No	No
IE-3200-8P2S-E	2 Gig SFP and 8 copper Gigabit	Yes	No	No	No	No
IE-3300-8T2S-E	2 Gig SFP and 8 copper Gigabit	No	No	Yes	No	No
IE-3300-8T2S-A	2 Gig SFP and 8 copper Gigabit	No	No	Yes	No	No
IE-3300-8P2S-E	2 Gig SFP and 8 copper Gigabit	Yes	No	Yes	No	No

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

Table 2. Expansion modules for IE3300 and IE3400

Module PID	Interfaces and types	Compatible base system(s)	PoE/PoE+	90-W PoE	Advanced hardware features
IEM-3300-8T	8 copper Gigabit	IE-3300-8T2C, IE-3300-8P2S, IE-3300-8T2X, IE-3300-8U2X, 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-3300-6T2S	2 SFP and 6 copper Gigabit	IE-3300-8T2C, IE-3300-8P2S, IE-3300-8T2X, IE-3300-8U2X, IE-3400-8T2S, IE-3400-8P2S	No	No	No
IEM-3300-16T	8 copper Gigabit	IE-3300-8T2C, IE-3300-8P2S, IE-3300-8T2X, IE-3300-8U2X, IE-3400-8T2S, IE-3400-8P2S	No	No	No
IEM-3300-14T2S	2 SFP and 14 copper Gigabit	IE-3300-8T2C, IE-3300-8P2S, IE-3300-8T2X, IE-3300-8U2X, IE-3400-8T2S, IE-3400-8P2S	No	No	No
IEM-3300-8P	8 copper Gigabit	IE-3300-8P2S, IE-3300-8U2X, IE-3400-8P2S	Yes	No	No
IEM-3300-8S	8 SFP Gigabit	IE-3300-8T2C, IE-3300-8P2S, IE-3300-8T2X, IE-3300-8U2X, IE-3400-8T2S, IE-3400-8P2S	No	No	No
IEM-3300-16P	16 copper Gigabit	IE-3300-8P2S, IE-3300-8U2X, IE-3400-8P2S	Yes	No	No

Module PID	Interfaces and types	Compatible base system(s)	PoE/PoE+	90-W PoE	Advanced hardware features
IEM-3300-4MU	4 copper 2.5 Gigabit	IE-3300-8P2S, IE-3300-8U2X, IE-3400-8P2S	Yes	Yes	No
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) is an example of features that requires 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 are some of the unique PoE features on Catalyst IE3100?

A: The Catalyst IE3100 PoE models have features to maintain uninterrupted power to critical industrial assets. The perpetual PoE feature maintains PoE power during a switch reload. This is important for IoT endpoints such as PoE-powered lights, enabling end device to remain powered on. In event of a power loss to IE3100, when power is restored to the switch, the fast PoE feature starts delivering power to endpoints without waiting for the IOS-XE operating system to fully load, thereby speeding up the time for the endpoint to start up. Its PoE boost feature maintains PoE even when the input voltage to the switch is as low as 12V DC. This is important, especially

in space-constrained deployments where it may not be practical to position a large 54VDC power supply unit.

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 differences include size, the IE3100 has a conformal coating option available, PoE features such as PoE boost, and the IE3105 platform supports L2NAT. IE3100 rugged series has different port counts (see Table 1) and PoE budget varies between the IE3100 6 port and 10 port models. 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. Catalyst IE3100 supports only Cisco Secure Equipment Access. 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

Feature/Hardware resource	Cisco Catalyst IE3400 Rugged Series	Cisco IE4000 Series
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 12.7 cm x 11.0 cm x 6.48 cm
IE-3100-4P2S	5.0 in. tall x 5.08 in. deep x 2.55 in. wide 12.7 cm x 12.9 cm x 6.48 cm
IE-3100-8T2C IE-3100-8T4S	5.0 in. tall x 4.33 in. deep x 3.0 in. wide 12.7 cm x 11.0 cm x 7.62 cm

IE3100 Product ID	Dimensions
IE-3100-18T2C IE-3100-18T2C-CC	5.0 in. tall x 5.08 in. deep x 4.30 in. wide 12.7 cm x 12.90 cm x 10.92 cm
IE-3105-8T2C IE-3100-8P2C	5.0 in. tall x 5.08 in. deep x 3.0 in. wide 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 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-3200-8T2S, IE-3200-8P2S IE-3300-8T2S, IE-3300-8P2S, IE-3300-8T2X IE-3400-8T2S	6 in. tall x 5.3 in. deep x 3.6 in. wide 15.24 cm x 13.46 cm x 9.14 cm
IE-3300-8U2X, IE-3400-8P2S	6 in. X 4.4 in. X 5.3 in. 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 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 15.24 cm x 13.46 cm x 16.76 cm

Q: What is the PoE budget of Cisco Catalyst IE3100/IE3200/IE3300/IE3400 Rugged PoE capable products?

A: Every RJ45 port on PoE-capable Cisco Catalyst IE-3100-4P2S, IE-3100-8P2C, IE-3200-8P2S, IE-3300-8P2S, and IE-3400-8P2S Rugged products support PoE and PoE+. IE-3100-4P2S has a PoE budget of 120W, and the rest of the base module alone has a PoE budget of 240W (8 multiplied by 30W). The maximum PoE budget for the base and expansion module (IE3300-8P2S, IE3300-8U2X, and IE3400-8P2s) is 480W. This can be achieved with PoE-capable expansion modules. This applies to 90W expansion module. The default PoE budget is 125W for all PoE-capable IEs (except IE3100-4P2S which is 120W).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 IE3100/IE3200/IE3300/IE3400 Rugged itself. PoE power is mostly consumed on the powered device. There is minimal loss of power on Cisco Catalyst IE3100/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-3100-4P2S	20W
IE-3100-8T2C	17.7W
IE-3100-8T4S	17.8W
IE-3100-8P2C	20W
IE-3100-18T2C	36.7W
IE-3100-18T2C-CC	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 Catalyst Center basic management, in either 3, 5, or 7 year terms.
- **Cisco DNA Advantage** – This is an add-on subscription license for Cisco Catalyst Center Software-Defined Access (SD-Access) Extended Nodes. It is also available in either 3, 5, or 7 year 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 with 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 A default license that is installed at the time of manufacture	Enabled on the switch at the time of manufacture No license server needed
Network Advantage "-A"	Perpetual	Layer 3 IPv4 and IPv6 dynamic routing, VRF, Cisco TrustSec, MACsec-256 bit	On the switch A Cisco Smart Account is required
Cisco DNA Essential "-E"	Term-based	Basic network management only by Cisco Catalyst Center, NetFlow	On the switch and on Cisco Catalyst Center A Cisco Smart Account is required
Cisco DNA Advantage "-A"	Term-based	Extended Node, Fabric Edge, ETA	On the switch and on Cisco Catalyst Center 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 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 Series 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 Catalyst Center and SD-Access support for Cisco Catalyst IE3x00 Rugged Series?

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

Table 9. Summary of Support by Cisco Catalyst Center

Cisco Catalyst 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	IE3100, IE3200, IE3300, IE3400	Network Essential required on IE3400, 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

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.