PoE Features

PoE Boost

IE3100 PoE integrates a boost power supply that can take 12V or 24V to create 54V for POE applications. The external 12V or 24V supply must be isolated from earth ground for proper operation.

IE3100 PoE will not boost up the voltage from a 52.5V or greater input. Instead, IE3100 PoE passes the 52.5 or greater input directly to the PoE controller for distribution to PDs. With a 52.5V or greater input, IE3100 PoE can support a maximum PoE budget of 120W on the IE-3100-4P2S-E and 240W on the IE-3100-8P2C-E.

IE3100 PoE can generate PoE power internally as follows:

- 31W with a voltage in the range 9.6V – 18V

- 90W with a voltage in the range 18V – 52.5V

The IE3100 automatically adjusts the PoE power budget when input voltage is 52.5V or less.

Fast PoE and Perpetual PoE

PoE support for Cisco Catalyst IE3100 Rugged Series Switches includes Fast PoE and Perpetual PoE, which restore or preserve power during system boot, respectively.

You enable Fast PoE and Perpetual PoE by using the CLI. See Configure Perpetual PoE and Fast PoE, on page 2 in this guide.

Fast PoE

Fast PoE turns power on without waiting for Cisco IOS XE to boot up. When the **poe-ha** command is enabled on a particular port, the switch on a recovery after a power failure provides power to the connected endpoint devices before Cisco IOS XE forwarding starts. Power is restored several minutes sooner than it otherwise would be.

When enabled, Fast PoE can be used after both the reset and power cycles.

The system needs to load and validate the power sourcing equipment (PSE) firmware before initiating Fast PoE connections. It also must verify that adequate power budget is available for all fast PoE reconnections. If the system doesn't have enough budget to reconnect all the fast PoE ports, it will reconnect fast PoE ports starting from the lower interface number until the power budget is exhausted.

Perpetual PoE

While Fast PoE quickly restores power to PDs after a power cycle, Perpetual PoE provides continuous power to PDs during a switch warm reboot. When perpetual PoE is enabled, the system does not reset the PSE controllers, ensuring that their loads stay connected.

The system securely stores the firmware information when it validated it. After a reset, the system can detect if the firmware has changed or not since the last validation.

Perpetual PoE is sometimes referred to as Persistent PoE.

Restrictions for Fast PoE and Perpetual PoE

The following restrictions apply to Fast PoE and Perpetual PoE:

- You must configure Fast PoE or Perpetual PoE before physically connecting any endpoint. Alternatively, you can do a manual shut/no-shut of the ports drawing power.

- In case of a microcode (MCU) firmware upgrade, power to the ports is interrupted and ports are backed up immediately after the upgrade. The MCU upgrade may occur as part of the process of updating the IOS XE version.

Configure Perpetual PoE and Fast PoE

To configure Fast PoE and Perpetual PoE, complete the following steps.

Procedure

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device> `**`enable`**	Enables privileged EXEC mode. Enter your password, if prompted.
Step 2	**configure terminal** **Example:** `Device# `**`configure terminal`**	Enters global configuration mode.
Step 3	**interface** *interface-id* **Example:** `Device(config)# `**`interface gigabitethernet 1/3`**	Specifies the physical port to be configured, and enters interface configuration mode.

	Command or Action	**Purpose**
Step 4	**power inline port perpetual-poe-ha** **Example:** Device(config-if)# **power inline port perpetual-poe-ha**	Configures perpetual PoE. When you configure perpetual PoE on a port connected to a powered device, the powered device remains powered on during reload.
Step 5	**power inline port poe-ha** **Example:** Device(config-if)# **power inline port poe-ha**	**Note**　You should configure perpetual PoE using the **power inline port perpetual-poe-ha** command before configuring Fast PoE using the **power inline port poe-ha** command. Configures Fast PoE. When you configure Fast PoE, if the switch is power cycled, the PD device powers on within 50-60 seconds of plugging into a power source without waiting for Cisco IOS XE to boot up.
Step 6	**end** **Example:** Device(config-if)# **end**	Exits interface configuration mode and returns to privileged EXEC mode.

Example: Configuring Fast PoE and Perpetual PoE

This example shows how you can configure Perpetual PoE on a switch:

```
Device> enable
Device# configure terminal
Device(config)# interface gigabitethernet1/3
Device(config-if)# power inline port perpetual-poe-ha
Device(config-if)# end
```

This example shows how you can configure Fast PoE on the switch:

```
Device> enable
Device# configure terminal
Device(config)# interface gigabitethernet1/3
Device(config-if)# power inline port poe-ha
Device(config-if)# end
```