Perpetual PoE and Fast PoE

Feature History for Perpetual PoE and Fast PoE

This table provides release and platform support information for the features explained in this module.

These features are available in all the releases subsequent to the one they were introduced in, unless noted otherwise.

Release	Feature Name and Description	Supported Platform
Cisco IOS XE 17.18.1	Perpetual PoE: Perpetual PoE, also known as Persistent PoE, is an enhancement to the PoE technology that allows a switch to provide uninterrupted power to connected powered devices during a switch reload or reboot. Fast PoE: Fast PoE is another enhancement to PoE technology that focuses on reducing the time powered devices require to receive power from a switch after a power cycle.	Cisco C9350 Series Smart Switches

Support of Perpetual PoE and Fast PoE on a switch

Perpetual PoE and Fast PoE is supported only on the following modules of the Cisco C9350 Series Smart Switches:

- C9350-24P
- C9350-48P
- C9350-24U
- C9350-48U
- C9350-48HX

Perpetual PoE

Perpetual PoE, also known as Persistent PoE, is an enhancement to the PoE technology that allows a switch to provide uninterrupted power to connected powered devices during a switch reload or reboot. In traditional PoE implementations, powered devices lose power during a switch reload. This occurs because the switch's power sourcing equipment (PSE) temporarily shuts down. This interruption can cause downtime for devices and interrupt services.

Fast PoE

Fast PoE is another enhancement to PoE technology that focuses on reducing the time powered devices require to receive power from a switch after a power cycle. Unlike traditional PoE, which requires the switch to fully boot up before it can initialize and provide power to connected devices, Fast PoE reduces this delay.

How fast PoE works

Workflow

When Fast PoE is configured on a port, the switch records the port configuration.

After the switch recovers from a power failure or while the main power (AC) to the switch is being restored, the switch identifies the Fast PoE and provides power to the port,

1. within 15 to 20 seconds after the power is established,

2. without waiting for the IOS to finish booting, and

3. even before the switch forwards network traffic.

Guidelines to configure perpetual PoE and fast PoE

- You must configure Perpetual PoE or Fast PoE before physically connecting any endpoint.

- After all configurations are completed, it is advised to do a manual shut and no-shut of the ports.

- During an M3 or PSE firmware upgrade, power to the ports is interrupted. The switch backs up power configurations and reloads them after the IOS software restarts.

- During an MCU firmware upgrade, power to the ports is interrupted. After the upgrade, ports restore power immediately.

- When switches are power-stacked, perpetual PoE and Fast PoE may not function as expected because of a power budget shortage.

- If the powered device does not support LLDP, configure it with either static or 2-event to provide the required power as specified for the device.

- For devices that have negotiated a custom power level using LLDP, after the switch recovers from a power outage, Fast PoE restores power based only on initial detection of the powered device and its power classification. LLDP-based power negotiation requires Cisco IOS to be fully operational to exchange LLDP packets and communicate power requirements. Fast PoE quickly applies power using the initial detection and power classification to minimize downtime. The custom LLDP-negotiated power settings are re-established only once the IOS and LLDP exchange are operational again.

Configure perpetual PoE and fast PoE

Perform this task to configure Perpetual PoE and Fast PoE.

Before you begin

Configure the **perpetual-poe-ha** command before connecting the powered device, or manually shut or unshut the port after configuring **poe-ha** command.

Procedure

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 gigabitethernet1/0/4`**

Specifies the physical port to be configured, and enters interface configuration mode.

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`**

Configures Fast PoE. When you configure Fast PoE, if the switch is power cycled, PD device power inline port poe-ha into a power source without waiting for IOS to boot up.

Step 6   **end**

Example:

`Device(config-if)# `**`end`**

Returns to privileged EXEC mode.

Example: Configure perpetual PoE

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

```
Device> enable
Device# configure terminal
Device(config)# interface gigabitethernet2/0/1
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 gigabitethernet2/0/1
Device(config-if)# power inline port perpetual-poe-ha
Device(config-if)# power inline port poe-ha
Device(config-if)# end
```

This example shows what happens if you configure fast PoE before configuring perpetual PoE:

```
Device> enable
Device# configure terminal
Device(config)# interface gigabitethernet2/0/1
Device(config-if)# power inline port poe-ha
Interface Gi2/0/1:INFO: Please execute "power inline port perpetual-poe-ha"
configuration command when "power inline port poe-ha" is configured on
the interface to enable fast poe
```

```
Device(config-if)#
Device(config-if)# power inline port perpetual-poe-ha
Device(config-if)# end
```

This example shows what happens when you disable perpetual PoE without disabling fast PoE on the interface:

```
Device> enable
Device# configure terminal
Device(config)# interface gigabitethernet2/0/1
Device(config-if)# power inline port poe-ha
Interface Gi2/0/1:INFO: Please execute "power inline port perpetual-poe-ha"
configuration command when "power inline port poe-ha" is configured on
the interface to enable fast poe

Device(config-if)#
Device(config-if)# power inline port perpetual-poe-ha
Device(config-if)# no power inline port poe-ha
Device(config-if)# power inline port poe-ha
Device(config-if)# no power inline port perpetual-poe-ha
Interface Gi2/0/1:INFO: Please execute "no power inline port poe-ha"
configuration command, as fast poe has no effect without "power inline
port perpetual-poe-ha" configuration on the interface

Device(config-if)#
Device(config-if)# end
```