



Configuring Perpetual and Fast POE

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Restrictions for Perpetual and Fast PoE

The following restrictions apply to perpetual and fast PoE :

- When the switches are power-stacked, perpetual and fast PoE functionalities may not work as expected. This is due to power budget shortage.
- The CREE light PD may flap at regular intervals if not configured with IP assigned from the DHCP server.
- If the PD doesn't support LLDP user can configure with either static or 2-event to receive required power as per the PD specification.

Perpetual POE

The Perpetual POE provides uninterrupted power to connected PD device even when the PSE switch is booting.



Note

Power to the ports will be interrupted in case of MCU firmware upgrade and ports will be back up immediately after the upgrade.

Fast POE

This feature remembers the last power drawn from a particular PSE port and switches on power the moment AC power is plugged in (within 15 to 20 seconds of switching on power) without waiting for IOS to boot up.

When **poe-ha** is enabled on a particular port, the switch on a recovery after power failure, provides power to the connected endpoint devices within short duration before even the IOS forwarding starts up.



Note Fast POE is supported on Catalyst 3850 only.



Note In case of UPOE, even though Fast POE is available on the switch side, the PD endpoints may not be able to take advantage of the same, due to the reliance on LLDP to signal the UPOE power availability. This reliance on LLDP requires that the PD endpoint still needs to wait till the IOS comes up and LLDP packet exchanges can happen, signaling the availability of UPOE power.

Supported Hardware for Perpetual POE and Fast POE

Perpetual POE is supported on the following Catalyst 3850 Switch Models:

Switch Model	Cisco IOS Image	Description
WS-C3850-24T-S	IP Base	Cisco Catalyst 3850 Stackable 24 10/100/1000 Ethernet ports, with 350-WAC power supply 1 RU, IP Base feature set
WS-C3850-48T-S	IP Base	Cisco Catalyst 3850 Stackable 48 10/100/1000 Ethernet ports, with 350-WAC power supply 1 RU, IP Base feature set
WS-C3850-24P-S	IP Base	Cisco Catalyst 3850 Stackable 24 10/100/1000 Ethernet PoE+ ports, with 715-WAC power supply 1 RU, IP Base feature set
WS-C3850-48P-S	IP Base	Cisco Catalyst 3850 Stackable 48 10/100/1000 Ethernet PoE+ ports, with 715-WAC power supply 1 RU, IP Base feature set
WS-C3850-48F-S	IP Base	Cisco Catalyst 3850 Stackable 48 10/100/1000 Ethernet PoE+ ports, with 1100-WAC power supply 1 RU, IP Base feature set
WS-C3850-24U-S	IP Base	Stackable 24 10/100/1000 Cisco UPOE ports, 1 network module slot, 1100 W power supply
WS-C3850-48U-S	IP Base	Stackable 48 10/100/1000 Cisco UPOE ports, 1 network module slot, 1100 W power supply
WS-C3850-12S-S	IP Base	Stackable 12 SFP module slots, 1 network module slot, 350-W power supply
WS-C3850-24S-S	IP Base	Stackable 24 SFP module slots, 1 network module slot, 350-W power supply
WS-C3850-12XS-S	IP Base	Catalyst 3850 12-port SFP+ transceiver, 1 network module slot, support for up to 10 G SFP+, 350 W power supply

Switch Model	Cisco IOS Image	Description
WS-C3850-16XS-S	IP Base	Catalyst 3850 16-port SFP+ transceiver, 1 network module slot, support for up to 10 G SFP+, 350 W power supply. 16 ports are available when the C3850-NM-4-10G network module is plugged into the WS-C3850-12XS-S switch.
WS-C3850-24XS-S	IP Base	Catalyst 3850 24-port SFP+ transceiver, 1 network module slot, support for up to 10 G SFP+, 715 W power supply.
WS-C3850-32XS-S	IP Base	Catalyst 3850 32-port SFP+ transceiver, 1 network module slot, support for up to 10 G SFP+, 715 W power supply. 32 ports are available when the C3850-NM-8-10G network module is plugged into the WS-C3850-24XS-S switch.
WS-C3850-48XS-S	IP Base	Stackable, with SFP+ transceivers, 48 ports that support up to 10 G, and 4 ports that support up to 40 G. 750 W power supply.
WS-C3850-48XS-F-S	IP Base	Stackable, with SFP+ transceivers, 48 ports that support up to 10 G, and 4 ports that support up to 40 G. 750 W power supply.
WS-C3850-24XU-S	IP Base	Stackable 24 100M/1G/2.5G/5G/10G UPoE ports, 1 network module slot, 1100-W power supply.
WS-C3850-24T-E	IP Services	Cisco Catalyst 3850 Stackable 24 10/100/1000 Ethernet ports, with 350-WAC power supply 1 RU, IP Services feature set
WS-C3850-48T-E	IP Services	Cisco Catalyst 3850 Stackable 48 10/100/1000 Ethernet ports, with 350-WAC power supply 1 RU, IP Services feature set
WS-C3850-24P-E	IP Services	Cisco Catalyst 3850 Stackable 24 10/100/1000 Ethernet PoE+ ports, with 715-WAC power supply 1 RU, IP Services feature set
WS-C3850-48P-E	IP Services	Cisco Catalyst 3850 Stackable 48 10/100/1000 Ethernet PoE+ ports, with 715-WAC power supply 1 RU, IP Services feature set
WS-C3850-48F-E	IP Services	Cisco Catalyst 3850 Stackable 48 10/100/1000 Ethernet PoE+ ports, with 1100-WAC power supply 1 RU, IP Services feature set
WS-3850-24U-E	IP Services	Cisco Catalyst 3850 Stackable 24 10/100/1000 Cisco UPOE ports, 1 network module slot, 1100-W power supply
WS-3850-48U-E	IP Services	Cisco Catalyst 3850 Stackable 48 10/100/1000 Cisco UPOE ports, 1 network module slot, 1100-W power supply
WS-C3850-12S-E	IP Services	Stackable, 2 SFP module slots, 1 network module slot, 350-W power supply
WS-C3850-24S-E	IP Services	Stackable, 24 SFP module slots, 1 network module slot, 350-W power supply

Switch Model	Cisco IOS Image	Description
WS-C3850-12XS-E	IP Services	Catalyst 3850 12-port SFP+ transceiver, 1 network module slot, support for up to 10 G SFP+, 350 -W power supply.
WS-C3850-16XS-E	IP Services	Catalyst 3850 16-port SFP+ transceiver, 1 network module slot, support for up to 10 G SFP+, 350 W power supply. 16 ports are available when the C3850-NM-4-10G network module is plugged into the WS-C3850-12XS-E switch.
WS-C3850-24XS-E	IP Services	Catalyst 3850 24-port SFP+ transceiver, 1 network module slot, support for up to 10 G SFP+, 715 W power supply.
WS-C3850-32XS-E	IP Services	Catalyst 3850 32-port SFP+ transceiver, 1 network module slot, support for up to 10 G SFP+, 715 W power supply. 32 ports are available when the C3850-NM-8-10G network module is plugged into the WS-C3850-24XS-E switch.
WS-C3850-48XS-E	IP Services	Stackable, SFP+ transceivers, 48 ports that support up to 10 G, and 4 ports that support up to 40 G. 750 W power supply.
WS-C3850-48XS-F-E	IP Services	Stackable, SFP+ transceivers, 48 ports that support up to 10 G, and 4 ports that support up to 40 G. 750 W power supply.
WS-C3850-24XU-E	IP Services	Stackable 24 100M/1G/2.5G/5G/10G UPoE ports, 1 network module slot, 1100-W power supply.

Configuring Perpetual and Fast POE

To configure perpetual and fast POE, perform the following steps:



Note You will need to configure the **perpetual-poe-ha** command before connecting the PD, or you will need to manually shut/unshut the port after configuring **poe-ha**.

Procedure

	Command or Action	Purpose
Step 1	enable Example: Device> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	configure terminal Example:	Enters global configuration mode.

	Command or Action	Purpose
	Device# <code>configure terminal</code>	
Step 3	<code>interface interface-id</code> Example: Device(config)# <code>interface gigabitethernet2/0/1</code>	Specifies the physical port to be configured, and enters interface configuration mode.
Step 4	<code>power inline port perpetual poe-ha</code> Example: Device(config-if)# <code>power inline port perpetual poe-ha</code>	Configures perpetual PoE. When you configure perpetual PoE on a port connected to a PD device, the PD device remains powered on during reload.
Step 5	<code>power inline port poe-ha</code> Example: Device(config-if)# <code>power inline port poe-ha</code>	Configures Fast PoE. When you configure Fast PoE, if switch is power cycled, PD device is powered on within 10-15 seconds of plugging into a power source without waiting for IOS to boot up. Note You should configure perpetual PoE using <code>power inline port perpetual-poe-ha</code> command before configuring Fast PoE using <code>power inline port poe-ha</code> command.
Step 6	<code>end</code> Example: Device(config-if)# <code>end</code>	Returns to privileged EXEC mode.

Example: Configuring Perpetual and Fast POE

This example shows how you can configure perpetual 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)# 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)# 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)# 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)# end
```