

PoE Configuration

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Chapter 1 PoE Configuration

1.1 PoE Overview

1.1.1 Introduction to PoE

Power over Ethernet (PoE) uses 10BaseT, 100Base-TX, and 1000Base-T twisted pairs to supply power to the remote powered devices (PD) in the network and implement power supply and data transmission simultaneously.

I. Advantages of PoE

- Reliability: The centralized power supply provides backup convenience, unified management, and safety.
- Easy connection: Network terminals only require an Ethernet cable, but no external power supply.
- Standard: PoE conforms to the 802.3af standard and uses a globally uniform power interfaces;
- Bright application prospect: PoE can be applied to IP phones, wireless access points (APs), chargers for portable devices, card readers, cameras, and data collection.

II. PoE components

- Power sourcing equipment (PSE): PSE is comprised of the power and the PSE functional module. It can implement PD detection, PD power information collection,
- PoE, power supply monitoring, and power-off for devices.
- PD: PDs receive power from the PSE. PDs include standard PDs and nonstandard PDs. Standard PDs conform to the 802.3af standard, including IP phones, WLAN APs, network cameras and so on.
- Power interface (PI): PIs are RJ45 interfaces which connect PSE/PDs to network cables.

**Note:**

Switch is PSE and supports IEEE802.3af and IEEE802.3at.

This function is only for PoE hardware-supported switch.

1.2 PoE Configuration Tasks

Table 1-1 PoE Configuration Tasks

Operation	Description	Related section
Enable the PoE feature on a port	Required	
Set the maximum output power on a port	Optional	
Set PoE management mode and PoE priority of a port	Optional	

1.3 Enabling the PoE Feature on a Port

PoE feature on a port is defaulted to be enabled.

Table 1-2 Enabling the PoE Feature on a Port

Operation	Command	Remarks
Enter global configuration mode	configure terminal	-
Enter interface configuration mode	interface ethernet <i>device/slot/port</i>	-
Enabling the PoE Feature on a Port	poe	Optional
Set the poe standard mode	poe standard {ieee802.3af/at}	Optional

1.4 Setting the Maximum Output Power

When AC power input is adopted for the switch, the maximum total power that can be supplied by the PoE-enabled switch is 150 W. By default, when the switch reaches its full load in supplying power.

When the power consumption of power devices is beyond the max power threshold, the port will stop the power supply. When the switch is reaching its full load in supplying power, it will first supply power to the PDs that are connected to the ports

with critical priority, and then supply power to the PDs that are connected to the ports with high priority. IF more than one port has the same lowest priority, the switch will power down the PD connected to the port with larger logical port number. It is suggested configuring this value 3W more than the power consumption the power devices needed.

Table 1-3 Setting the Maximum Output Power

Operation	Command	Remarks
Enter global configuration mode	configure terminal	-
Set the maximum output power for the whole switch	poe max-power <value>	Optional
Enter interface configuration mode	interface ethernet <i>device/slot/port</i>	-
Set the maximum output power on a port	poe max-power <value>	Optional

1.5 Setting PoE Priority of a Port

There are three port priority: critical, high and low. When the switch is reaching its full load in supplying power, it will first supply power to the PDs that are connected to the ports with critical priority, and then supply power to the PDs that are connected to the ports with high priority. IF more than one port has the same lowest priority, the switch will power down the PD connected to the port with larger logical port number.

The default port priority is low.

Table 1-4 Setting PoE Priority of a Port

Operation	Command	Remarks
Enter global configuration mode	configure terminal	-
Enter interface configuration mode	interface ethernet <i>device/slot/port</i>	-
Setting PoE Priority of a Port	poe priority { critical high low }	Optional

1.6 Displaying PoE Configuration

After finishing above configuration, user can check the configurations by command below.

Table 1-5 Displaying PoE Configuration

Operation	Command	Remarks
Displaying PoE Configuration	show poe [interface <interfacelist>]	Optional