POE Configuration

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Chapter 1 Overview

1.1 Overview of the Module

POE, a simplified form of Power over Ethernet, refers to a technology about power supply on Ethernet, that is, without any change of the existing Ethernet cabling, data signals can be transmitted to the IP-based terminals (e.g. IP phone, wireless LAN AP and network camera) and at the same time DC power can be provided to these terminals. The POE technology can guarantee not only the existing cabling but also the normal running of the existing network, reducing the cost as much as possible.

The technical standard of Ethernet power, IEEE802.3af, regulates the way that network equipment such as router, switch and HUB provides power to the IP phone, security system and WLAN AP through the Ethernet cable. On the basis of IEEE802.3, related standards about the power supply through the Ethernet are added, which is a kind of expansion of the existing Ethernet and also the first international standard about power distribution.

A complete POE system includes two parts: PSE and PD. PSE is the equipment to provide power to the Ethernet clients and also the administrative equipment of the whole POE system. PD is the equipment to receive the power from PSE, namely, the client of the POE system, such as IP phone, network security camera, AP, PDA and the charger of the mobile phone. In fact, any device with no more than 13W power can obtain the corresponding power from the RJ45 socket. Both PSE and PD, based on IEEE 802.3af, establish information relationship on PD connection, PD device type and power consumption level. Through the information relationship, PSE provides power to PD on the Ethernet.

1.2 Related Terms

POE（Power over Ethernet）

Power Sourcing Equipment（PSE）

Powered Device (PD)

IEEE802.3af

Chapter 2 POE Configuration

2.1 poe_show_interface

【Description】

To display the state of POE power supply of a designated interface, run **poe_show_interface** in interface configuration mode.

【Parameter】none

【Default】Display the state of the interface.

【Remarks】This command is configured in interface configuration mode.

【Example】

The following example shows how to display the state of power supply of interface f0/1:

Switch_config#interface f0/1

Switch_config_f0/1#poe_show_interface

Port Power Enabled : enable

Port Operating Status : on

Port IEEE Class : 0

Port Detection Status : delivering-power

Port Fault Status : no faults

Port Current : 6 mA

Port Voltage : 50V

Port Current Power : 300 mw

Port Max Power : 15400 mw

Port PD Discription : none

Switch_config_f0/1#

The following example shows how to display the state of power supply of interface f0/2:

Switch_config#interface f0/2

Switch_config_f0/2#poe_show_interface

Port Power Enabled : enable

Port Operating Status : on

Port IEEE Class : 0

Port Detection Status : searching

Port Fault Status : no faults

Port Current : 0 mA

Port Voltage : 0.0 V

Port Current Power : 0 mw

Port Max Power : 15400 mw

Port PD Discription : none

Switch_config_f0/2#

Table 1.1 Information displayed by poe_show_interface

Field	Description
Port Power Enabled	Enables or disables the remote power supply of a POE interface: ● enable: means the remote power supply of the POE interface is enabled. ● disable: means the remote power supply of the POE interface is disabled.
Port Operating Status	Indicates the operating state of the POE interface. ● on: means the power is normally supplied. ● off: means the power supply is disabled.
Port IEEE Class	Grade of the power consumption of IEEE PD: 0, 1, 2, 3, 4
Port Detection Status	Indicates the detection state of the POE interface. ● disabled: means the power supply is disabled. ● searching: means PD is being searched. ● delivering-power: means PD is being powered. ● fault: means error happens. ● test: means that the POE interface is being tested. ● other-fault: means other faults occur. ● pd-disconnect: means PD is not connected.
	Indicates the fault state of the POE

Port Fault Status	interface. ● no faults: means the POE interface is in normal state. ● no faults: means the ultra-voltage fault occurs. ● thermal shutdown fault (TSD): Fault occurs at the time of thermal shutdown. ● overload current >50-ms fault: means the overload current occurs. ● load disconnect: means the load is disconnected. ● undefined: means the fault is undefined.
Port Current	Stands for the existing current on the POE interface.
Port Voltage	Stands for the existing voltage on the POE interface.
Port Current Power	Stands for the existing power on the POE interface.
Port Max Power	Stands for the maximum power on the POE interface.
Port PD Discription	Stands for the description information about the PD that the POE interface connects, which is used to help users to identify the type and location of PD.

2.2 poe_shutdown_all and poe_no_shutdown_all

【Description】

To disable the power supply of all POE interfaces, run **poe_shutdown_all**.

To enable the power supply of all POE interfaces, run **poe_no_shutdown_all**.

【Parameter】none

【Default】The power supply is enabled on all POE interfaces.

【Remarks】

This command is configured in global configuration mode.

【Example】

The **switch_config#poe_shutdown_all** command is to shut down the power supply function of all POE interfaces.

The **switch_config#poe_no_shutdown_all** command is to enable the power supply function of all POE interfaces.

2.3 set_poetime

【Description】

You can set the LED's lasting time in POE mode by running **set_poetime**. In POE mode, the system will return to the normal mode if the lasting time is exceeded.

【Parameter】

Parameter	Description
1-300	Time range: 1-300 seconds

【Default】The default time is 30 seconds.

【Remarks】

This command is configured in global configuration mode.

【Example】

The following example shows how to set the time to 10 seconds.

Switch_config#set_poetime ?

Current lasting time in POE mode is 30s

Value:1-300 -- Lasting time in POE mode, defaut:30s, Max:300s

Switch_config#set_poetime 10

2.4 poe_mode enable and poe_mode disable

【Description】

To enable the power supply function for a designated POE interface, run **poe_mode enable**.

To disable the power supply function for a designated POE interface, run **poe_mode disable**.

【Parameter】none

【Default】The power supply is enabled on the designated POE interface.

【Remarks】

This command is configured in port configuration mode.

【Example】

Switch_config#interface f0/1

Switch_config_f0/1#poe_show_interface

Port Power Enabled : # The power supply of the designated POE interface is enabled by default.

Port Operating Status : on

Port IEEE Class : 0

Port Detection Status : searching

Port Fault Status : no faults

Port Current : 0 mA

Port Voltage : 0.0 V

Port Current Power : 0 mw

Port Max Power : 15400 mw

Port PD Discription : none

Switch_config_f0/1#poe_mode disable #Shut down the power supply of interface f0/1.

Switch_config_f0/1#poe_show_interface

Port Power Enabled : disable

Port Operating Status : off

Port IEEE Class : 0

Port Detection Status : disabled

Port Fault Status : no faults

Port Current : 0 mA

Port Voltage : 0.0 V

Port Current Power : 0 mw

Port Max Power : 15400 mw

Port PD Discription : none

Switch_config_f0/1#

Switch_config_f0/1#poe_mode enable #Open the power supply of interface f0/1.

Switch_config_f0/1#poe_show_interface

Port Power Enabled : enable

Port Operating Status : on

Port IEEE Class : 0

Port Detection Status : searching

Port Fault Status : no faults

Port Current : 0 mA

Port Voltage : 0.0 V

Port Current Power : 0 mw

Port Max Power : 15400 mw

Port PD Discription : none

Switch_config_f0/1#

2.5 poe_mode pdtype

【Description】

To set the description name of PD, which is a string with one to thirty characters and used for identifying multiple PDs, run **poe_mode pdtype**.

【Parameter】

Parameter	Description
String	Stands for a string with one to thirty characters.

【Default】There is no information to describe the connection of the POE interface and PD.

【Remarks】

This command is configured in port configuration mode.

【Example】

Set the description information about interface f0/6 connecting PD to **the IP phone connecting room 101**.

Switch_config#interface f0/6

Switch_config_f0/6#poe_show_interface

Port Power Enabled : enable

Port Operating Status : on

Port IEEE Class : 0

Port Detection Status : searching

Port Fault Status : no faults

Port Current : 0 mA

Port Voltage : 0.0 V

Port Current Power : 0 mw

Port Max Power : 15400 mw

Port PD Discription : none

Switch_config_f0/6#poe_mode pdtype IP_phone_from_room_101

Switch_config_f0/6#poe_show_interface

Port Power Enabled : enable

Port Operating Status : on

Port IEEE Class : 0

Port Detection Status : searching

Port Fault Status : no faults

Port Current : 0 mA

Port Voltage : 0.0 V

Port Current Power : 0 mw

Port Max Power : 15400 mw

Port PD Discription : IP_phone_from_room_101

Switch_config_f0/6#

Cancel to set the description information about interface f0/6 connecting PD to **the IP phone connecting room 101**.

Switch_config_f0/6#poe_mode pdtype none

Switch_config_f0/6#poe_show_interface

Port Power Enabled : enable

Port Operating Status : on

Port IEEE Class : 0

Port Detection Status : searching

Port Fault Status : no faults

Port Current : 0 mA

Port Voltage : 0.0 V

Port Current Power : 0 mw

Port Max Power : 15400 mw

Port PD Discription : none

Switch_config_f0/6#