PoE Commands

This chapter contains the following sections:

power inline

To configure the inline power administrative mode on an interface, use the **power inline** Interface Configuration mode command.

Syntax

power inline auto *[***time-range** *time-range-name]*

power inline never

Parameters

- **auto**—Turns on the device discovery protocol and applies power to the device.
- **never**—Turns off the device discovery protocol and stops supplying power to the device.
- **time-range-name**—Specifies a time range. When the time range is not in effect the power is not supplied the attached device. If a time range is not specified, there is no time range bounded to the port. (Range: 1–32 characters)

Default Configuration

The default configuration is set to auto.

Command Mode

Interface (Ethernet) Configuration mode

User Guidelines

The **never** parameter cannot be used with a time range.

Example

The following example turns on the device discovery protocol on port 4.

```
switchxxxxxx(config)# interface gi1/0/4
switchxxxxxx(config-if)# power inline auto
```

power inline inrush test disable

To disable the inrush test (a hardware test that checks input surge current for PoE devices), use the **power inline inrush test disable** Global Configuration mode command. To enable the inrush test, use the no form of this command.

Syntax

power inline inrush test disable

no power inline inrush test disable

Default Configuration

Inrush test is enabled.

Command Mode

Global Configuration mode

Example

The following example disable inrush test.

```
switchxxxxxx(config)# power inline inrush test disable
```

power inline legacy support disable

To disable the legacy PDs support, use the **power inline legacy support disable**Global Configuration mode command. To enable the legacy support, use the no form of this command.

Syntax

power inline legacy support disable

no power inline legacy support disable

Default Configuration

Legacy support is enabled.

Command Mode

Global Configuration mode

Example

The following example disables legacy PDs support.

```
switchxxxxxx(config)# power legacy support disable
```

power inline powered-device

To add a description of the device type, use the **power inline powered-device** Interface Configuration mode command. To remove the description, use the **no** form of this command.

Syntax

power inline powered-device *pd-type*

no power inline powered-device

Parameters

pd-type—Enters a comment or a description to assist in recognizing the type of the device attached to this interface. (Length: 1–24 characters)

Default Configuration

There is no description.

Command Mode

Interface (Ethernet) Configuration mode

Example

The following example adds the description ‘ip phone’ to the device connected to port 4.

```
switchxxxxxx(config)# interface gi1/0/4
switchxxxxxx(config-if)# power inline powered-device ip_phone
```

power inline priority

To configure the interface inline power management priority, use the **power inline priority** Interface Configuration (Ethernet) mode command. To restore the default configuration, use the **no** form of this command.

Syntax

power inline priority *{***critical** | **high** | **low***}*

no power inline priority

Parameters

- **critical**—Specifies that the device operation is critical.
- **high**—Specifies that the device operation is high priority.
- **low**—Specifies that the device operation is low priority.

Default Configuration

The default configuration is set to low priority.

Command Mode

Interface (Ethernet) Configuration mode

Example

The following example sets the inline power management priority of port gi1/0/4 to High.

```
switchxxxxxx(config)# interface gi1/0/4
switchxxxxxx(config-if)# power inline priority high
```

power inline usage-threshold

To configure the threshold for initiating inline power usage alarms, use the **power inline usage-threshold** Global Configuration mode command. To restore the default configuration, use the **no** form of this command.

Syntax

power inline usage-threshold *percent*

no power inline usage-threshold

Parameters

percent—Specifies the threshold in percent to compare to the measured power. (Range: 1–99)

Default Configuration

The default threshold is 95 percent.

Command Mode

Global Configuration mode

Example

The following example configures the threshold for initiating inline power usage alarms to 90 percent.

```
switchxxxxxx(config)# power inline usage-threshold 90
```

power inline traps enable

To enable inline power traps, use the **power inline traps enable** Global Configuration mode command. To disable traps, use the **no** form of this command.

Syntax

power inline traps enable

no power inline traps enable

Default Configuration

Inline power traps are disabled.

Command Mode

Global Configuration mode

Example

The following example enables inline power traps.

```
switchxxxxxx(config)# power inline traps enable
```

power inline limit

To configure the power limit per port on an interface, use the **power inline limit** Interface Configuration mode command. To return to default, use the **no** form of the command.

Syntax

power inline limit *power*

no power inline limit

Parameters

power—States the port power consumption limit in Milliwatts, Range is 0-60000.

Default Configuration

The default value is 30W

Command Mode

Interface (Ethernet) Configuration mode

User Guidelines

The operational power limit is the minimum of the configured power limit value and the maximum power capability on port. For example, if the configured value is higher than 15.4W on a PoE port, the operational power limit is 15.4W.

Example

The following example sets inline power on a port.

```
switchxxxxxx(config)# interface gi1/0/1
switchxxxxxx(config-if)# power inline limit 2222
```

power inline limit-mode

To set the power limit mode of the system, use the **power inline limit-mode** Global Configuration mode command. To return to default, use the **no** form of this command.

Syntax

power inline limit-mode *{**class** | **port**}*

no power inline limit-mode

Parameters

- **class**—The power limit of a port is based on the class of the PD (Power Device) as detected during the classification process
- **port**—The power limit of a port is fixed regardless of the class of the discovered PD.

Default Configuration

The default value is class

Command Mode

Global Configuration mode

User Guidelines

Changing the PoE limit mode of the system will turn the power OFF and ON for all PoE ports.

Example

The following example sets the power limit to class.

```
switchxxxxxx(config)# power inline limit-mode class
"Changing the PoE limit mode of the system will turn the power OFF and ON for all PoE ports.
 Are you sure? [y/n]"
```

power inline four-pair forced

To configure the inline power to enabled the spare pair, use the **power inline four-wire forced** Interface Configuration mode command.

Syntax

power inline four-pair forced

no power inline four-pair forced

Parameters

Default Configuration

The default configuration is set to no four-pair forced.

Command Mode

Interface (Ethernet) Configuration mode

User Guidelines

This command should only be used for ports that are connected to devices that do not support the CDP/LLDP protocol or the new 4-wire power via MDI TLV (like UPOE splitter).

The command is used to force the spare pair to supply power, this allows the usage of 60 Watts PoE.

CDP/LLDP will reflect power allocated of 60W regardless of power requested.

This force command overrides any port mode or port limit configuration.

Example

The following example force the spare pair in port 4.

```
switchxxxxxx(config)# interface gi1/0/4
switchxxxxxx(config-if)# power inline four-pair forced
```

power inline negotiation

The power inline negotiation Interface Configuration mode command is used to select which negotiation types are allowed on an interface. To return an interface to the default supported negotiation types, use the no form of this command.

Syntax

power inline negotiation {none | all}

no power inline negotiation

Parameters

none—indicates that no negotiation is allowed on the port.

all—indicates that all supported negotiation methods are allowed on the port.

Default Configuration

All supported negotiation methods are allowed on the port.

Command Mode

Interface (Ethernet) Configuration mode

User Guidelines

If the none option is selected, all negotiation packets will be ignored.

The following example disabled negotiation on a port.

```
switchxxxxxx(config)# interface gi1/0/4
switchxxxxxx(config-if)# power inline negotiation none
```

show power inline

To display information about the inline power for all interfaces or for a specific interface, use the **show power inline** privileged EXEC mode command.

Syntax

show power inline [*interface-id* | ***module*** *unit-id*]

Parameters

- **interface-id**—Specifies an interface ID. The interface ID must be an Ethernet port.
- **module** *unit-id*—Specifies the unit ID of the stack member.

Note Relevant for stackable systems only

Default Configuration

Show information for all ports.

Command Mode

Privileged EXEC mode

User Guidelines

In a stack, only devices which support PoE are displayed.

Example 1—The following example displays information about the inline power for all ports (port power based).

```
switchxxxxxx(config)# show power inline
Port limit mode: Enabled
Usage threshold: 95%
Trap: Enabled
Legacy Mode: Disabled
Inrush test: Enabled
Class Error Detection: Enabled
'
```

Unit	Module	Nominal Power (w)	Allocated Power (w)	Temp (c)	SW Version	PSE chipset HW Revisi
------	----------	----------	----------	----------	----------	----------
1	48P	320	120 (37.5%)	30	1.222.3	PD69208 - 0x4BC2 PD69204 - 0x4AC2
2	24P	240	0 (0%)	50	1.222.3	PD69208* - 0x4AC2
3	24P	120	0 (0%)	50	4.0.10.0	TPS3288 - 0x40c4

Interface	Admin	Oper	Power	Class	Device	Priority
--------	----------	------------	---------	-------	-------------------	-----------
gi1/0/1	Auto	On	15.4(30)	3	IP Phone Model A	Critical
gi1/0/2	Auto	Searching	0	0		High
gi1/0/3	Never	Off	0	0		Low

Example 2—The following example displays information about the inline power for a specific port.

```
switchxxxxxx(config)# show power inline gi1/0/1
```

Interface	Admin	Oper	Power	Class	Device	Priority
--------	----------	------------	---------	-------	-------------------	-----------
gi1/0/1	Auto	On		3	IP Phone Model A	Critical

```
Port status: Port is on - Valid PD resistor signature detected
Port standard: 802.3AT
Admin power limit: 30.0 watts
Time range:
Link partner standard: 802.3AF
Operational power limit: 30 watts
Negiotiated power: 18 watts (LLDP)

Spare pair: Enabled (forced)
Current (mA): 81
Voltage(V): 50.8
verload Counter: 5
Short Counter: 0
Denied Counter: 2
Absent Counter: 0
Invalid Signature Counter: 0
```

The following table describes the fields shown in the display:

Field	Description
Power	Inline power sourcing equipment operational status.
Nominal Power	Inline power sourcing equipment nominal power in Watts.
Allocated Power	Measured usage power in Watts.
Usage Threshold	Usage threshold expressed in percent for comparing the measured power and initiating an alarm if threshold is exceeded.
Traps	Indicates if inline power traps are enabled.
Port	Ethernet port number.
Device	Description of the device type.
State	Indicates if the port is enabled to provide power. The possible values are Auto or Never.

Field	Description
Priority	Port inline power management priority. The possible values are Critical, High or Low.
Status	Power operational state. The possible values are On, Off, Test-Fail, Testing, Searching or Fault.
Class	Power consumption classification of the device.
Overload Counter	Counts the number of overload conditions detected.
Short Counter	Counts the number of short conditions detected.
Denied Counter	Counts the number of times power was denied.
Absent Counter	Counts the number of times power was removed because device dropout was detected.
Invalid Signature Counter	Counts the number of times an invalid signature of a device was detected.
Inrush Test	Displays whether the inrush test is enabled or disabled.

Field	Description
Port limit mode	Enabled for port limit and Disable for class limit.
Legacy Mode	Enabled of Disabled legacy device support.
Inrush Test	Displays whether the inrush test is enabled or disabled.
SW version	The POE firmware version.
HW Version	The POE hardware version
Usage Threshold	Usage threshold expressed in percent for comparing the measured power and initiating an alarm if threshold is exceeded.
Traps	Indicates if inline power traps are enabled.
Module	The module name.
Available Power	Inline power sourcing equipment nominal power in Watts.
Allocated Power	Measured allocated power in Watts.
Temp	Show the POE device temperature.
Interface	Ethernet port number.
Admin	Indicates if the port is enabled to provide power. The possible values are Auto or Never.

Field	Description
Oper	Power operational state. The possible values are On, Off, Test-Fail, Testing, Searching or Fault.
Power	Power consumed in watts, any allocated Power will appear in parens ().
Class	Power consumption classification of the device (0-4).
Device	Description of the device type set by the user.
Priority	Port inline power management priority. The possible values are Critical, High or Low.
Port status	The port status on/off with detailed reason (see bellow for details).
Port standard	802.3AF /802.3AT /60W POE.
Admin power limit	Port limit in watts used when the **Port limit mode** is Enabled.
Time Range	The name of the time range associated with the interface.
Link partner standard	802.3AF/802.3AT.
Operational Power Limit	Port actual power limit in watts.
Current (mA)	Port current in Milli-Ampere.
Voltage (V)	Port voltage in volts.
Overload Counter	Counts the number of overload conditions detected.
Short Counter	Counts the number of short conditions detected.
Denied Counter	Counts the number of times power was denied.
Absent Counter	Counts the number of times power was removed because device dropout was detected.
Invalid Signature Counter	Counts the number of times an invalid signature of a device was detected.

```
Following is a list of port status values:
Port is on - Valid capacitor/resistor detected.
Port is on - Valid resistor/capacitor detected.
Port is on - 4 pairs.
Port is on - Forced 4 pairs.
Port is off - Main supply voltage is high.
Port is off - Main supply voltage is low.
Port is off - Hardware pin disables all ports.
Port is off - Non-existing port number.
Port is yet undefined.
Port is off - Internal hardware fault.
Port is off - User setting.
```

```
Port is off - Detection is in process.
Port is off - Non-802 - 3af powered device.
Port is off - Overload & Underload states.
Port is off - Underload state.
Port is off - Overload state.
Port is off - Power budget exceeded.
Port is off - Internal hardware fault.
Port is off - Voltage injection into the port.
Port is off - Improper Capacitor Detection results.
Port is off - Discharged load.
Port is on - Detection regardless (Force On).
Undefined error during Force On.
Supply voltage higher than settings.
Supply voltage lower than settings.
Disable_PDU flag raised during Force On.
Port is forced on, then disabled.
Port is off - Forced power error due to Overload.
Port is off - Out of power budget while in Force On.
Communication error with PoE devices after Force On.
Port is off - Short condition.
Port is off - Over temperature at the port.
Port is off - Device is too hot.
Unknown device port status.
ForcePowerErrorShortCircuit.
ForcePowerErrorChannelOverTemperature.
ForcePowerErrorChipOverTemperature .
PowerManagment - Static Calculated power is bigger than power limit.
PowerManagment - Static OVL PD class report (user predefined power value).
Static Calculated power (power limit during Force On).
Static OVL PD class report (user predefined power value during Force On).
High power port is ON - High power device was detected.
Chip Over Power - Sum of square currents exceeded SumPowerLimit.
Force Power Error Chip Over Power, during Force On.
Port is off - Class Error - Illegal class.
```

show power inline savings

To display information about the device inline power saving, use the **show power inline savings** privileged EXEC mode command.

Syntax

show power inline savings

Command Mode

Privileged EXEC mode

User Guidelines

Use the **show power inline savings** command to display the total power saved by using the PoE time range feature which shuts down PoE to ports in specific times.

Example 1—The following example displays PoE power saving on device.

```
switchxxxxxx(config)# show power inline savings
Current Power Savings: 45W
Cumulative Energy Saved: 180 [Watt*Hour]
* Estimated Annual Power saving: 1800 [Watt*Hour]
* Annual estimate is based on the saving during the previous week
NA - information for previous week is not available
```

clear power inline counters

To clear power inline interface counters, use the **clear power inline counters** Privileged EXEC mode command.

Syntax

clear power inline counters [*interface-id*]

Parameters

interface-id—(Optional) Specifies an interface ID. The interface ID must be an Ethernet port type. If interface ID is not specified - counters for all interfaces are cleared.

Default Configuration

All interface counters are cleared.

Command Mode

Privileged EXEC mode

User Guidelines

The **clear power inline counters** command is used to reset power inline interface counters: Overload, Short, Denied, Absent and Invalid Signature .

The following example clears the power inline counters for gi1/0/2.

```
switchxxxxxx#  clear power inline counters gi1/0/2
```

clear power inline monitor consumption

To clear power inline consumption monitor info on all or on a specific interface or interface list, use the **clear power inline monitor consumption** Privileged EXEC mode command.

Syntax

clear power inline monitor consumption *[interface-id-list]*

Parameters

interface-id-list—(Optional) Specifies a list of interface ID. The interface ID must be an Ethernet port type. If interface ID is not specified - consumption information for all interfaces is cleared.

Default Configuration

All monitored interface info are cleared.

Command Mode

Privileged EXEC mode

Example

The following example clears the monitored statistics for gi1.

```
switchxxxxxx#  clear power inline monitor consumption gi11
```

show power inline monitor consumption

To display the average monitored power consumption info, use the **show power inline monitor consumption** Privileged EXEC mode command

Syntax

show power inline monitor consumption [*interface-id]* {**minutes**|**hours | days |weeks**}

Parameters

- *interface-id* (Optional) Specifies an interface ID. The interface ID must be an Ethernet port. If interface ID is not specified total device PoE consumption info will be displayed.
- **Unit** *unit-id* - Total PoE consumption info for specified unit ID will be displayed
- **minutes** —Average minute consumption. Displays the last 60 samples, sampled every 60 seconds (every round minute according to system time)
- **hours** —Average hour consumption. Displays the last 24 samples, sampled every 60 minutes (every round hour according to system time).
- **days** —Average daily consumption. Displays the last 7 samples, sampled every 24 hours (midnight to midnight according to system time).
- **weeks** —Average Weekly Consumption. Displays the last 52 samples, sampled every 7 days (midnight Saturday to midnight Saturday according to system time).

Default Configuration

This command has no default settings.

Command Mode

Privileged EXEC mode

User Guidelines

The **show power inline monitor** is used to show average power consumption for specified time frame.

Note: only **days** and **weeks** samples are persisted after reload.

Example 1:

The following example displays the average hourly power consumption for the past day gathered for interface gi1.

```
switchxxxxxx#  show power inline monitor consumption gi1 hours
```

Sample Time	Consumption (W)

----------	---------- 7.1 7.1 8.5 9.0
03:00:00	7.1
02:00:00	7.1
01:00:00	8.5
00:00:00	9.0

(~) Not all samples are available.

* time stamp represents end of sampling period

Example 2:

The following example displays the average weekly power consumption for the past 52 weeks gathered for unit 1 .

```
switchxxxxxx#  show power inline monitor  consumption  unit 1  weeks
```

Sample Time	Consumption (W)
----------	----------
Sun 15/11/2015 00:00:00	55.1
Sun 22/11/2015 00:00:00	75.2
Sun 29/11/2015 00:00:00(~)	45.3
00:00:00	9.0

```
 unit 1
```

(~) Not all samples are available.

* time stamp represents end of sampling period