Interface and Hardware Commands

bluetooth pin

To configure a new Bluetooth pin, use the **bluetooth pin** command in interface configuration or global configuration mode.

bluetooth pin *pin*

Syntax Description

pin	Pairing pin for the Bluetooth interface. The pin is a 4-digit number.

Command Modes

Interface configuration (config-if)

Global configuration (config)

Command History

Release	Modification
Cisco IOS XE Gibraltar 16.12.1	This command was introduced.

Usage Guidelines

The **bluetooth pin** command can be configured either in the interface configuration or global configuration mode. Cisco recommends using the global configuration mode to configure the Bluetooth pin.

Examples

This example shows how to configure a new Bluetooth pin using the **bluetooth pin** command.

```
Device> enable
Device# configure terminal
Device(config)# bluetooth pin 1111
Device(config)#
```

Related Commands

Command	Description
show platform hardware bluetooth	Displays information about the Bluetooth interface

debug ilpower

To enable debugging of the power controller and Power over Ethernet (PoE) system, use the **debug ilpower** command in privileged EXEC mode. To disable debugging, use the **no** form of this command.

debug ilpower {**cdp** | **event** | **ha** | **port** | **powerman** | **registries** | **scp** | **sense**}
no debug ilpower {**cdp** | **event** | **ha** | **port** | **powerman** | **registries** | **scp** | **sense**}

Syntax Description

cdp	Displays PoE Cisco Discovery Protocol (CDP) debug messages.
event	Displays PoE event debug messages.
ha	Displays PoE high-availability messages.
port	Displays PoE port manager debug messages.
powerman	Displays PoE power management debug messages.
registries	Displays PoE registries debug messages.
scp	Displays PoE SCP debug messages.
sense	Displays PoE sense debug messages.

Command Default

Debugging is disabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

This command is supported only on PoE-capable switches.

When you enable debugging on a switch stack, it is enabled only on the active switch. To enable debugging on a stack member, you can start a session from the active switch by using the **session** *switch-number* EXEC command. Then enter the **debug** command at the command-line prompt of the stack member. You also can use the **remote command** *stack-member-number LINE* EXEC command on the active switc to enable debugging on a member switch without first starting a session.

debug interface

To enable debugging of interface-related activities, use the **debug interface** command in privileged EXEC mode. To disable debugging, use the **no** form of this command.

debug interface {*interface-id* | **counters** {**exceptions** | **protocol memory**} | **null** *interface-number* | **port-channel** *port-channel-number* | **states** | **vlan** *vlan-id*}
no debug interface {*interface-id* | **counters** {**exceptions** | **protocol memory**} | **null** *interface-number* | **port-channel** *port-channel-number* | **states** | **vlan** *vlan-id*}

Syntax Description

interface-id	ID of the physical interface. Displays debug messages for the specified physical port, identified by type switch number/module number/port, for example, gigabitethernet 1/0/2.
null *interface-number*	Displays debug messages for null interfaces. The interface number is always **0**.
port-channel *port-channel-number*	Displays debug messages for the specified EtherChannel port-channel interface. The *port-channel-number* range is 1 to 48.
vlan *vlan-id*	Displays debug messages for the specified VLAN. The vlan range is 1 to 4094.
counters	Displays counters debugging information.
exceptions	Displays debug messages when a recoverable exceptional condition occurs during the computation of the interface packet and data rate statistics.
protocol memory	Displays debug messages for memory operations of protocol counters.
states	Displays intermediary debug messages when an interface's state transitions.

Command Default

Debugging is disabled.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

If you do not specify a keyword, all debug messages appear.

The **undebug interface** command is the same as the **no debug interface** command.

When you enable debugging on a switch stack, it is enabled only on the active switch. To enable debugging on a stack member, you can start a session from the active switch by using the **session** *switch-number* EXEC command. Then enter the **debug** command at the command-line prompt of the stack member. You also can use the **remote command** *stack-member-number LINE* EXEC command on the active switch to enable debugging on a member switch without first starting a session.

debug lldp packets

To enable debugging of Link Layer Discovery Protocol (LLDP) packets, use the **debug lldp packets** command in privileged EXEC mode. To disable debugging, use the **no** form of this command.

debug lldp packets
no debug lldp packets

Syntax Description

This commnd has no arguments or keywords.

Command Default

Debugging is disabled.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

The **undebug lldp packets** command is the same as the **no debug lldp packets** command.

When you enable debugging on a switch stack, it is enabled only on the active switch. To enable debugging on a stack member, you can start a session from the active switch by using the **session** *switch-number* EXEC command.

debug platform poe

To enable debugging of a Power over Ethernet (PoE) port, use the **debug platform poe** command in privileged EXEC mode. To disable debugging, use the **no** form of this command.

debug platform poe [{**error** | **info**}] [**switch** *switch-number*]
no debug platform poe [{**error** | **info**}] [**switch** *switch-number*]

Syntax Description

error	(Optional) Displays PoE-related error debug messages.
info	(Optional) Displays PoE-related information debug messages.
switch *switch-number*	(Optional) Specifies the stack member. This keyword is supported only on stacking-capable switches.

Command Default

Debugging is disabled.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

The **undebug platform poe** command is the same as the **no debug platform poe** command.

debug platform software fed active punt packet-capture start

To enable debugging of packets during high CPU utilization, for a switch, use the **debug platform software fed active punt packet-capture start** command in privileged EXEC mode. To disable debugging of packets during high CPU utilization, for a switch, use the **debug platform software fed active punt packet-capture stop** command in privileged EXEC mode.

debug platform software fed active punt packet-capture start
debug platform software fed active punt packet-capture stop

Syntax Description

active	Displays information about the active switch.
punt	Specifies the punt information.
packet-capture	Specifies information about the captured packet.
start	Enables debugging of the active switch.
stop	Disables debugging of the active switch.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Gibraltar 16.10.1	This command was introduced.

Usage Guidelines

The **debug platform software fed active punt packet-capture start** command starts the debugging of packets during high CPU utilization. The packet capture is stopped when the 4k buffer size is exceeded.

Examples

The following is a sample output from the **debug platform software fed active punt packet-capture start** command:

```
Device# debug platform software fed active packet-capture start
Punt packet capturing started.
```

The following is a sample output from the **debug platform software fed active punt packet-capture stop** command:

```
Device# debug platform software fed active packet-capture stop
Punt packet capturing stopped. Captured 101 packet(s)
```

duplex

To specify the duplex mode of operation for a port, use the **duplex** command in interface configuration mode. To return to the default value, use the **no** form of this command.

duplex {**auto** | **full** | **half**}
no duplex {**auto** | **full** | **half**}

Syntax Description

auto	Enables automatic duplex configuration. The port automatically detects whether it should run in full- or half-duplex mode, depending on the attached device mode.
full	Enables full-duplex mode.
half	Enables half-duplex mode (only for interfaces operating at 10 or 100 Mb/s). You cannot configure half-duplex mode for interfaces operating at 1000 Mb/s, 10,000 Mb/s, 2.5Gb/s, or 5Gb/s.

Command Default

The default is **auto** for Gigabit Ethernet ports.

Duplex options are not supported on the 1000BASE-*x* or 10GBASE-*x* (where -*x* is -BX, -CWDM, -LX, -SX, or -ZX) small form-factor pluggable (SFP) modules.

Command Modes

Interface configuration

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

For Gigabit Ethernet ports, setting the port to **auto** has the same effect as specifying **full** if the attached device does not autonegotiate the duplex parameter.

Note Half-duplex mode is supported on Gigabit Ethernet interfaces if the duplex mode is **auto** and the connected device is operating at half duplex. However, you cannot configure these interfaces to operate in half-duplex mode.

Certain ports can be configured to be either full duplex or half duplex. How this command is applied depends on the device to which the switch is attached.

If both ends of the line support autonegotiation, we highly recommend using the default autonegotiation settings. If one interface supports autonegotiation and the other end does not, configure duplex and speed on both interfaces, and use the **auto** setting on the supported side.

If the speed is set to **auto**, the switch negotiates with the device at the other end of the link for the speed setting and then forces the speed setting to the negotiated value. The duplex setting remains as configured on each end of the link, which could result in a duplex setting mismatch.

You can configure the duplex setting when the speed is set to **auto**.

Caution Changing the interface speed and duplex mode configuration might shut down and re-enable the interface during the reconfiguration.

You can verify your setting by entering the **show interfaces** privileged EXEC command.

Examples

This example shows how to configure an interface for full-duplex operation:

```
Device(config)# interface gigabitethernet1/0/1
Devic(config-if)# duplex full
```

errdisable detect cause

To enable error-disable detection for a specific cause or for all causes, use the **errdisable detect cause** command in global configuration mode. To disable the error-disable detection feature, use the **no** form of this command.

errdisable detect cause {**all** | **arp-inspection** | **bpduguard shutdown vlan** | **dhcp-rate-limit** | **dtp-flap** | **gbic-invalid** | **inline-power** | **link-flap** | **loopback** | **pagp-flap** | **pppoe-ia-rate-limit** | **psp shutdown vlan** | **security-violation shutdown vlan** | **sfp-config-mismatch**}
no errdisable detect cause {**all** | **arp-inspection** | **bpduguard shutdown vlan** | **dhcp-rate-limit** | **dtp-flap** | **gbic-invalid** | **inline-power** | **link-flap** | **loopback** | **pagp-flap** | **pppoe-ia-rate-limit** | **psp shutdown vlan** | **security-violation shutdown vlan** | **sfp-config-mismatch**}

Syntax Description

all	Enables error detection for all error-disabled causes.
arp-inspection	Enables error detection for dynamic Address Resolution Protocol (ARP) inspection.
bpduguard shutdown vlan	Enables per-VLAN error-disable for BPDU guard.
dhcp-rate-limit	Enables error detection for DHCP snooping.
dtp-flap	Enables error detection for the Dynamic Trunking Protocol (DTP) flapping.
gbic-invalid	Enables error detection for an invalid Gigabit Interface Converter (GBIC) module. **Note** This error refers to an invalid small form-factor pluggable (SFP) module.
inline-power	Enables error detection for the Power over Ethernet (PoE) error-disabled cause. **Note** This keyword is supported only on switches with PoE ports.
link-flap	Enables error detection for link-state flapping.
loopback	Enables error detection for detected loopbacks.
pagp-flap	Enables error detection for the Port Aggregation Protocol (PAgP) flap error-disabled cause.
pppoe-ia-rate-limit	Enables error detection for the PPPoE Intermediate Agent rate-limit error-disabled cause.
psp shutdown vlan	Enables error detection for protocol storm protection (PSP).
security-violation shutdown vlan	Enables voice aware 802.1x security.
sfp-config-mismatch	Enables error detection on an SFP configuration mismatch.

Command Default

Detection is enabled for all causes. All causes, except per-VLAN error disabling, are configured to shut down the entire port.

Command Modes

Global configuration

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

A cause (such as a link-flap or dhcp-rate-limit) is the reason for the error-disabled state. When a cause is detected on an interface, the interface is placed in an error-disabled state, an operational state that is similar to a link-down state.

When a port is error-disabled, it is effectively shut down, and no traffic is sent or received on the port. For the bridge protocol data unit (BPDU) guard, voice-aware 802.1x security, and port-security features, you can configure the switch to shut down only the offending VLAN on the port when a violation occurs, instead of shutting down the entire port.

If you set a recovery mechanism for the cause by entering the **errdisable recovery** global configuration command, the interface is brought out of the error-disabled state and allowed to retry the operation when all causes have timed out. If you do not set a recovery mechanism, you must enter the **shutdown** and then the **no shutdown** commands to manually recover an interface from the error-disabled state.

For protocol storm protection, excess packets are dropped for a maximum of two virtual ports. Virtual port error disabling using the **psp** keyword is not supported for EtherChannel and Flexlink interfaces.

To verify your settings, enter the **show errdisable detect** privileged EXEC command.

This example shows how to enable error-disabled detection for the link-flap error-disabled cause:

```
Device(config)# errdisable detect cause link-flap
```

This command shows how to globally configure BPDU guard for a per-VLAN error-disabled state:

```
Device(config)# errdisable detect cause bpduguard shutdown vlan
```

This command shows how to globally configure voice-aware 802.1x security for a per-VLAN error-disabled state:

```
Device(config)# errdisable detect cause security-violation shutdown vlan
```

You can verify your setting by entering the **show errdisable detect** privileged EXEC command.

errdisable recovery cause

To enable the error-disabled mechanism to recover from a specific cause, use the **errdisable recovery cause** command in global configuration mode. To return to the default setting, use the **no** form of this command.

errdisable recovery cause {**all** | **arp-inspection** | **bpduguard** | **channel-misconfig** | **dhcp-rate-limit** | **dtp-flap** | **gbic-invalid** | **inline-power** | **link-flap** | **loopback** | **mac-limit** | **pagp-flap** | **port-mode-failure** | **pppoe-ia-rate-limit** | **psecure-violation** | **psp** | **security-violation** | **sfp-config-mismatch** | **storm-control** | **udld**}
no errdisable recovery cause {**all** | **arp-inspection** | **bpduguard** | **channel-misconfig** | **dhcp-rate-limit** | **dtp-flap** | **gbic-invalid** | **inline-power** | **link-flap** | **loopback** | **mac-limit** | **pagp-flap** | **port-mode-failure** | **pppoe-ia-rate-limit** | **psecure-violation** | **psp** | **security-violation** | **sfp-config-mismatch** | **storm-control** | **udld**}

Syntax Description

all	Enables the timer to recover from all error-disabled causes.
arp-inspection	Enables the timer to recover from the Address Resolution Protocol (ARP) inspection error-disabled state.
bpduguard	Enables the timer to recover from the bridge protocol data unit (BPDU) guard error-disabled state.
channel-misconfig	Enables the timer to recover from the EtherChannel misconfiguration error-disabled state.
dhcp-rate-limit	Enables the timer to recover from the DHCP snooping error-disabled state.
dtp-flap	Enables the timer to recover from the Dynamic Trunking Protocol (DTP) flap error-disabled state.
gbic-invalid	Enables the timer to recover from an invalid Gigabit Interface Converter (GBIC) module error-disabled state. **Note** This error refers to an invalid small form-factor pluggable (SFP) error-disabled state.
inline-power	Enables the timer to recover from the Power over Ethernet (PoE) error-disabled state. This keyword is supported only on switches with PoE ports.
link-flap	Enables the timer to recover from the link-flap error-disabled state.
loopback	Enables the timer to recover from a loopback error-disabled state.
mac-limit	Enables the timer to recover from the mac limit error-disabled state.
pagp-flap	Enables the timer to recover from the Port Aggregation Protocol (PAgP)-flap error-disabled state.

port-mode-failure	Enables the timer to recover from the port mode change failure error-disabled state.
pppoe-ia-rate-limit	Enables the timer to recover from the PPPoE IA rate limit error-disabled state.
psecure-violation	Enables the timer to recover from a port security violation disable state.
psp	Enables the timer to recover from the protocol storm protection (PSP) error-disabled state.
security-violation	Enables the timer to recover from an IEEE 802.1x-violation disabled state.
sfp-config-mismatch	Enables error detection on an SFP configuration mismatch.
storm-control	Enables the timer to recover from a storm control error.
udld	Enables the timer to recover from the UniDirectional Link Detection (UDLD) error-disabled state.

Command Default

Recovery is disabled for all causes.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

A cause (such as all or BDPU guard) is defined as the reason that the error-disabled state occurred. When a cause is detected on an interface, the interface is placed in the error-disabled state, an operational state similar to link-down state.

When a port is error-disabled, it is effectively shut down, and no traffic is sent or received on the port. For the BPDU guard and port-security features, you can configure the switch to shut down only the offending VLAN on the port when a violation occurs, instead of shutting down the entire port.

If you do not enable the recovery for the cause, the interface stays in the error-disabled state until you enter the **shutdown** and the **no shutdown** interface configuration commands. If you enable the recovery for a cause, the interface is brought out of the error-disabled state and allowed to retry the operation again when all the causes have timed out.

Otherwise, you must enter the **shutdown** and then the **no shutdown** commands to manually recover an interface from the error-disabled state.

You can verify your settings by entering the **show errdisable recovery** privileged EXEC command.

Examples

This example shows how to enable the recovery timer for the BPDU guard error-disabled cause:

```
Device# Device#configure terminal
Device(config)# errdisable recovery cause bpduguard
```

errdisable recovery cause

To enable the error-disabled mechanism to recover from a specific cause, use the **errdisable recovery cause** command in global configuration mode. To return to the default setting, use the **no** form of this command.

errdisable recovery cause {**all** | **arp-inspection** | **bpduguard** | **channel-misconfig** | **dhcp-rate-limit** | **dtp-flap** | **gbic-invalid** | **inline-power** | **link-flap** | **loopback** | **mac-limit** | **pagp-flap** | **port-mode-failure** | **pppoe-ia-rate-limit** | **psecure-violation** | **psp** | **security-violation** | **sfp-config-mismatch** | **storm-control** | **udld**}
no errdisable recovery cause {**all** | **arp-inspection** | **bpduguard** | **channel-misconfig** | **dhcp-rate-limit** | **dtp-flap** | **gbic-invalid** | **inline-power** | **link-flap** | **loopback** | **mac-limit** | **pagp-flap** | **port-mode-failure** | **pppoe-ia-rate-limit** | **psecure-violation** | **psp** | **security-violation** | **sfp-config-mismatch** | **storm-control** | **udld**}

Syntax Description

all	Enables the timer to recover from all error-disabled causes.
arp-inspection	Enables the timer to recover from the Address Resolution Protocol (ARP) inspection error-disabled state.
bpduguard	Enables the timer to recover from the bridge protocol data unit (BPDU) guard error-disabled state.
channel-misconfig	Enables the timer to recover from the EtherChannel misconfiguration error-disabled state.
dhcp-rate-limit	Enables the timer to recover from the DHCP snooping error-disabled state.
dtp-flap	Enables the timer to recover from the Dynamic Trunking Protocol (DTP) flap error-disabled state.
gbic-invalid	Enables the timer to recover from an invalid Gigabit Interface Converter (GBIC) module error-disabled state. **Note** This error refers to an invalid small form-factor pluggable (SFP) error-disabled state.
inline-power	Enables the timer to recover from the Power over Ethernet (PoE) error-disabled state. This keyword is supported only on switches with PoE ports.
link-flap	Enables the timer to recover from the link-flap error-disabled state.
loopback	Enables the timer to recover from a loopback error-disabled state.
mac-limit	Enables the timer to recover from the mac limit error-disabled state.
pagp-flap	Enables the timer to recover from the Port Aggregation Protocol (PAgP)-flap error-disabled state.

port-mode-failure	Enables the timer to recover from the port mode change failure error-disabled state.
pppoe-ia-rate-limit	Enables the timer to recover from the PPPoE IA rate limit error-disabled state.
psecure-violation	Enables the timer to recover from a port security violation disable state.
psp	Enables the timer to recover from the protocol storm protection (PSP) error-disabled state.
security-violation	Enables the timer to recover from an IEEE 802.1x-violation disabled state.
sfp-config-mismatch	Enables error detection on an SFP configuration mismatch.
storm-control	Enables the timer to recover from a storm control error.
udld	Enables the timer to recover from the UniDirectional Link Detection (UDLD) error-disabled state.

Command Default

Recovery is disabled for all causes.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

A cause (such as all or BDPU guard) is defined as the reason that the error-disabled state occurred. When a cause is detected on an interface, the interface is placed in the error-disabled state, an operational state similar to link-down state.

When a port is error-disabled, it is effectively shut down, and no traffic is sent or received on the port. For the BPDU guard and port-security features, you can configure the switch to shut down only the offending VLAN on the port when a violation occurs, instead of shutting down the entire port.

If you do not enable the recovery for the cause, the interface stays in the error-disabled state until you enter the **shutdown** and the **no shutdown** interface configuration commands. If you enable the recovery for a cause, the interface is brought out of the error-disabled state and allowed to retry the operation again when all the causes have timed out.

Otherwise, you must enter the **shutdown** and then the **no shutdown** commands to manually recover an interface from the error-disabled state.

You can verify your settings by entering the **show errdisable recovery** privileged EXEC command.

Examples

This example shows how to enable the recovery timer for the BPDU guard error-disabled cause:

```
Device# Device#configure terminal
Device(config)# errdisable recovery cause bpduguard
```

hw-module beacon

To control the beacon LED on a device, use the **hw-module beacon** command in the privileged EXEC mode.

hw-module beacon { **rp** { **active** | **standby** } | **fan-tray** | **power-supply** *ps-slot-number* | **slot** *slot-number* } { **on** | **off** | **status** }

Syntax Description

rp {**active** | **standby**}	Specifies the active or the standby Supervisor to be controlled.
fan-tray	Specifies the fan tray beacon to be controlled.
power-supply *ps-slot-number*	Specifies the power supply beacon to be controlled.
slot *slot-number*	Specifies the slot to be controlled.
on	Turns the beacon on.
off	Turns the beacon off.
status	Displays the status of the beacon.

Command Default

This command has no default settings.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

Use the **hw-module beacon** command to turn on or off the beacon LEDs. You can monitor the power-supply, fan-tray, line card slots, and supervisor units by turning on the respective beacon LEDs. You can also find the status of these units with the **hw-module beacon status** command. Turning on the respective beacon LED helps in identifying the unit on the chassis for administrative purposes.

Use the **hw-module beacon slot** *slot-number* command to enable or disable the module slot LED and also check its status. Blue indicates the slot LED is on and black indicates that it is off.

Use the **hw-module beacon rp active {on | off}** command to enable or disable the active supervisor LED. Similarly the standby supervisor LED can be turned on or off with the **hw-module beacon rp standby {on | off }** command. You can check the status of the supervisor LED using the **hw-module beacon rp {active | standby} status** command. Blue indicates the supervisor LED is on and black indicates the supervisor LED is off.

Use the **hw-module beacon fan-try {on | off | status}** command to enable or disable the fan tray LED or to check the status of the fan tray LED. Blue indicates the fan tray LED is on and black indicates that it is off.

Use the **hw-module beacon power-supply** *ps-slot-number* **{on | off | status}** command to enable or disable the particular power supply LED, or to check its status. Blue indicates the power supply LED is on and black indicates the power supply LED is off.

Note If the switch is operating in SVL mode, then select either the active or standby switch. For example: **hw-module beacon switch** {**active** | **standby**}.

The following example shows how to switch on the LED beacon of the active supervisor:

```
Device> enable
Device# hw-module beacon rp active on
```

hw-module slot upoe-plus

To enable the 802.3bt mode on the device, use the **hw-module slot upoe-plus** comamnd in the Global Configuration mode. To unconfigure the 802.3bt mode, use the **no** form of the command.

hw-module slot *slot-number* **upoe-plus**
no hw-module slot *slot-number* **upoe-plus**

Command Default

The device is in 802.3at mode.

Command Modes

Global Configuration (config)

Command History

Release	Modification
Cisco IOS XE Gibraltar 16.11.1	This command was introduced.

Usage Guidelines

When a line card boots up, it is in 802.3at-compliant mode by default. Use the **hw-module slot***slot-num* upoe-plus command to enable 802.3bt mode that makes the device 802.3bt compliant. This command causes the line card to be power-cycled to enable 802.3bt compliance.

The following command enables 802.3bt mode on the line card located in slot numbered 4 of the device.

```
Device> enable
Device# configure terminal
Device(config)# hw-module slot 4 upoe-plus
Performing oir to update poe fw on chassis 1 slot 4
Device#
*Mar 21 05:39:36.215: %IOSXE_OIR-6-REMSPA: SPA removed from subslot 4/0, interfaces disabled
```

hw-module subslot mode

To control the subscriber line interface (SLI) traffic rate of a device, use the **hw-module subslot mode** command in global configuration mode. To return to the default mode, use the **no** form of this command.

Cisco IOS XE Gibraltar 16.10.x and Earlier Releases

hw-module subslot *slot/subslot* **mode** [{**dynamic** | **performance**}]
no hw-module subslot *slot/subslot* **mode**

Cisco IOS XE Gibraltar 16.11.1 and Later Releases

hw-module subslot *slot/subslot* **mode** [{**dynamic** | **performance** | **static**}]
no hw-module subslot *slot/subslot* **mode**

Syntax Description

slot	Slot number. The range is from 0 to 10.
subslot	Subslot number. The range is from 0 to 0.
dynamic	(Optional) Sets the line card operation modes to dynamic mode.
performance	(Optional) Sets the line card operation modes to performance mode.
static	(Optional) Sets the line card operation modes to static mode.

Command Default

- Until Cisco IOS XE Gibraltar 16.10.x release, the default mode is static.
- Starting in Cisco IOS XE Gibraltar 16.11.1 release, the default mode is dynamic.

Command Modes

Global Configuration (config)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

- **Performance mode**: Allows limited number of front panel interfaces to operate at full 64-byte 10G rate, while keeping the other interfaces in disabled state.

  For 7 slot chassis, 8 10G/MGig line card front panel interfaces get activated and provides full 64-byte 10G rate. For 10 slot chassis, 5 front panel interfaces get activated at full 64-byte 10G rate. The other line card interfaces are disabled and do not link up. Disabled front panel interfaces has amber LED on and the **show interfaces** command displays hardware in disabled state.

- **Dynamic mode**: Monitors the system software on how many SLI links are active based on the front panel port link status, and dynamically configures SLI link 64-byte packet max traffic bandwidth.

  For 7 slot chassis, when the number of active SLI links exceed 8, system software limits SLI 64-byte packet traffic rate down to 7.5G for all 12 SLIs. For 10 slot chassis, when the number of active SLI links exceed 5, SLI 64-byte packet traffic rate is limited to 6.25G for all 8 SLIs. Otherwise, system software allows full l0G traffic with 64-byte packets on the active SLIs.

- **Static mode**: SLI traffic rate is fixed to 7.5G for both 7 slot chassis and 10 slot chassis.

Examples

The following example shows how to set the line card mode to performance:

```
Device> enable
Device# configure terminal
Device(config)# hw-module subslot 1/0 mode performance
```

Related Commands

Command	Description
show hw-module subslot mode	Displays the line card mode of the platform.
show platform hardware iomd portgroups	Displays the port grouping information of the platform.
show platform hardware iomd lc-portmap brief	Displays the line card port map information of the platform.

interface

To configure an interface, use the **interface** command.

interface {**Auto-Template** *interface-number* | **FortyGigabitEthernet** *switch-number/slot-number/port-number* | **GigabitEthernet** *switch-number/slot-number/port-number* | **Group VI** *Group VI interface number* | **Internal Interface** *Internal Interface number* | **Loopback** *interface-number* **Null** *interface-number* **Port-channel** *interface-number* **TenGigabitEthernet** *switch-number/slot-number/port-number* **Tunnel** *interface-number* **Vlan** *interface-number* }

Syntax Description

Auto-Template *interface-number*	Enables you to configure a auto-template interface. The range is from 1 to 999.
FortyGigabitEthernet *switch-number/slot-number/port-number*	Enables you to configure a 40-Gigabit Ethernet interface. • *switch-number* — Switch ID. The range is from 1 to 8. • *slot-number* — Slot number. Value is 1. • *port-number* — Port number. The range is from 1 to 2.
GigabitEthernet *switch-number/slot-number/port-number*	Enables you to configure a Gigabit Ethernet IEEE 802.3z interface. • *switch-number* — Switch ID. The range is from 1 to 8. • *slot-number* — Slot number. The range is from 0 to 1. • *port-number* — Port number. The range is from 1 to 48.
Group VI *Group VI interface number*	Enables you to configure a Group VI interface. The range is from 0 to 9.
Internal Interface Internal Interface	Enables you to configure an internal interface.
Loopback *interface-number*	Enables you to configure a loopback interface. The range is from 0 to 2147483647.
Null *interface-number*	Enables you to configure a null interface. The default value is 0.
Port-channel *interface-number*	Enables you to configure a port-channel interface. The range is from 1 to 128.
TenGigabitEthernet *switch-number/slot-number/port-number*	Enables you to configure a 10-Gigabit Ethernet interface. • *switch-number* — Switch ID. The range is from 1 to 8. • *slot-number* — Slot number. The range is from 0 to 1. • *port-number* — Port number. The range is from 1 to 24 and 37 to 48 .

Tunnel *interface-number*	Enables you to configure a tunnel interface. The range is from 0 to 2147483647.
Vlan *interface-number*	Enables you to configure a switch VLAN. The range is from 1 to 4094.

Command Default

None

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

You can not use the "no" form of this command.

The following example shows how to configure a tunnel interface:

```
Device# interface Tunnel 15
```

interface range

To configure an interface range, use the **interface range** command.

interface range {**Auto-Template** *interface-number* | **FortyGigabitEthernet** *switch-number/slot-number/port-number* | **GigabitEthernet** *switch-number/slot-number/port-number* | **Group VI** *Group VI interface number* | **Internal Interface** *Internal Interface number* | **Loopback** *interface-number* **Null** *interface-number* **Port-channel** *interface-number* **TenGigabitEthernet** *switch-number/slot-number/port-number* **Tunnel** *interface-number* **Vlan** *interface-number* }

Syntax Description

Auto-Template *interface-number*	Enables you to configure a auto-template interface. The range is from 1 to 999.
FortyGigabitEthernet *switch-number/slot-number/port-number*	Enables you to configure a 40-Gigabit Ethernet interface. • *switch-number* — Switch ID. The range is from 1 to 8. • *slot-number* — Slot number. Value is 1. • *port-number* — Port number. The range is from 1 to 2.
GigabitEthernet *switch-number/slot-number/port-number*	Enables you to configure a Gigabit Ethernet IEEE 802.3z interface. • *switch-number* — Switch ID. The range is from 1 to 8. • *slot-number* — Slot number. The range is from 0 to 1. • *port-number* — Port number. The range is from 1 to 48.
Group VI *Group VI interface number*	Enables you to configure a Group VI interface. The range is from 0 to 9.
Internal Interface Internal Interface	Enables you to configure an internal interface.
Loopback *interface-number*	Enables you to configure a loopback interface. The range is from 0 to 2147483647.
Null *interface-number*	Enables you to configure a null interface. The default value is 0.
Port-channel *interface-number*	Enables you to configure a port-channel interface. The range is from 1 to 128.

TenGigabitEthernet *switch-number/slot-number/port-number*	• *switch-number* — Switch ID. The range is from 1 to 8. • *slot-number* — Slot number. The range is from 0 to 1. • *port-number* — Port number. The range is from 1 to 24 and 37 to 48. Enables you to configure a 10-Gigabit Ethernet interface.
Tunnel *interface-number*	Enables you to configure a tunnel interface. The range is from 0 to 2147483647.
Vlan *interface-number*	Enables you to configure a switch VLAN. The range is from 1 to 4094.

Command Default

None

Command Modes

Global configuration

Command History

Table 1:

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Examples

This example shows how you can select a set of VLAN interfaces to be configured :

```
Device(config)# interface range vlan 1-100
```

lldp (interface configuration)

To enable Link Layer Discovery Protocol (LLDP) on an interface, use the **lldp** command in interface configuration mode. To disable LLDP on an interface, use the **no** form of this command.

lldp {**med-tlv-select** *tlv* | **receive** | **tlv-select** **power-management** | **transmit**}
no lldp {**med-tlv-select** *tlv* | **receive** | **tlv-select** **power-management** | **transmit**}

Syntax Description

med-tlv-select	Selects an LLDP Media Endpoint Discovery (MED) time-length-value (TLV) element to send.
tlv	String that identifies the TLV element. Valid values are the following: • **inventory-management**— LLDP MED Inventory Management TLV. • **location**— LLDP MED Location TLV. • **network-policy**— LLDP MED Network Policy TLV. • **power-management**— LLDP MED Power Management TLV.
receive	Enables the interface to receive LLDP transmissions.
tlv-select	Selects the LLDP TLVs to send.
power-management	Sends the LLDP Power Management TLV.
transmit	Enables LLDP transmission on the interface.

Command Default

LLDP is disabled.

Command Modes

Interface configuration (config-if)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

This command is supported on 802.1 media types.

If the interface is configured as a tunnel port, LLDP is automatically disabled.

The following example shows how to disable LLDP transmission on an interface:

```
Device(config)# interface gigabitethernet1/0/1
Device(config-if)# no lldp transmit
```

The following example shows how to enable LLDP transmission on an interface:

```
Device(config)# interface gigabitethernet1/0/1
```

```
Device(config-if)# lldp transmit
```

logging event power-inline-status

To enable the logging of Power over Ethernet (PoE) events, use the **logging event power-inline-status** command in interface configuration mode. To disable the logging of PoE status events, use the **no** form of this command.

logging event power-inline-status
no logging event power-inline-status

Syntax Description

This command has no arguments or keywords.

Command Default

Logging of PoE events is enabled.

Command Modes

Interface configuration (config-if)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

The **no** form of this command does not disable PoE error events.

Examples

This example shows how to enable logging of PoE events on a port:

```
Device(config-if)# interface gigabitethernet1/0/1
Device(config-if)# logging event power-inline-status
Device(config-if)#
```

mode (power-stack configuration)

To configure power stack mode for the power stack, use the **mode** command in power-stack configuration mode. To return to the default settings, use the **no** form of the command.

mode {**power-shared** | **redundant**} [**strict**]
no mode

Syntax Description

power-shared	Sets the power stack to operate in power-shared mode. This is the default.
redundant	Sets the power stack to operate in redundant mode. The largest power supply is removed from the power pool to be used as backup power in case one of the other power supplies fails.
strict	(Optional) Configures the power stack mode to run a strict power budget. The stack power needs cannot exceed the available power.

Command Default

The default modes are **power-shared** and nonstrict.

Command Modes

Power-stack configuration (config-stackpower)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

This command is available only on switch stacks running the IP Base or IP Services feature set.

To access power-stack configuration mode, enter the **stack-power stack** *power stack name* global configuration command.

Entering the **no mode** command sets the switch to the defaults of **power-shared** and non-strict mode.

Note For stack power, available power is the total power available for PoE from all power supplies in the power stack, available power is the power allocated to all powered devices connected to PoE ports in the stack, and consumed power is the actual power consumed by the powered devices.

In **power-shared** mode, all of the input power can be used for loads, and the total available power appears as one large power supply. The power budget includes all power from all supplies. No power is set aside for power supply failures. If a power supply fails, load shedding (shutting down of powered devices or switches) might occur.

In **redundant** mode, the largest power supply is removed from the power pool to use as backup power in case one of the other power supplies fails. The available power budget is the total power minus the largest power supply. This reduces the available power in the pool for switches and powered devices, but in case of a failure or an extreme power load, there is less chance of having to shut down switches or powered devices.

In **strict** mode, when a power supply fails and the available power drops below the budgeted power, the system balances the budget through load shedding of powered devices, even if the actual power is less than the available power. In nonstrict mode, the power stack can run in an over-allocated state and is stable as long as

the actual power does not exceed the available power. In this mode, a powered device drawing more than normal power could cause the power stack to start shedding loads. This is normally not a problem because most devices do not run at full power. The chances of multiple powered devices in the stack requiring maximum power at the same time is small.

In both strict and nonstrict modes, power is denied when there is no power available in the power budget.

This is an example of setting the power stack mode for the stack named power1 to power-shared with strict power budgeting. All power in the stack is shared, but when the total available power is allotted, no more devices are allowed power.

```
Device(config)# stack-power stack power1
Device(config-stackpower)# mode power-shared strict
Device(config-stackpower)# exit
```

This is an example of setting the power stack mode for the stack named power2 to redundant. The largest power supply in the stack is removed from the power pool to provide redundancy in case one of the other supplies fails.

```
Device(config)# stack-power stack power2
Device(config-stackpower)# mode redundant
Device(config-stackpower)# exit
```

monitoring

To enable monitoring of all optical transceivers and to specify the time period for monitoring the transceivers, use the **monitoring** command in transceiver type configuration mode. To disable the monitoring, use the **no** form of this command.

monitoring [**interval** *seconds*]
no monitoring [**interval**]

Syntax Description

interval *seconds*	(Optional) Specifies the time interval for monitoring optical transceivers. The range is from 300 to 3600 seconds, and the default interval time is 600 seconds.

Command Default

The interval time is 600 seconds.

Command Modes

Transceiver type configuration (config-xcvr-type)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

You need digital optical monitoring (DOM) feature and transceiver module compatibility information to configure the **monitoring** command. Refer to the compatibility matrix to get the lists of Cisco platforms and minimum required software versions to support Gigabit Ethernet transceiver modules.

Gigabit Ethernet Transceivers transmit and receive Ethernet frames at a rate of a gigabit per second, as defined by the IEEE 802.3-2008 standard. Cisco's Gigabit Ethernet Transceiver modules support Ethernet applications across all Cisco switching and routing platforms. These pluggable transceivers offer a convenient and cost effective solution for the adoption in data center, campus, metropolitan area access and ring networks, and storage area networks.

The **interval** keyword enables you to change the default polling interval. For example, if you set the interval as 1500 seconds, polling happens at every 1500th second. During the polling period entSensorStatus of optical transceivers is set to *Unavailable*, and once the polling finishes entSensorStatus shows the actual status.

Examples

This example shows how to enable monitoring of optical transceivers and set the interval time for monitoring to 1500 seconds:

```
Device# configure terminal
Device(config)# transceiver type all
Device(config-xcvr-type)# monitoring interval 1500
```

This example shows how to disable monitoring for all transceiver types:

```
Device(config-xcvr-type)# no monitoring
```

Related Commands

Command	Description
transceiver type all	Enables monitoring on all transceivers.

network-policy

To apply a network-policy profile to an interface, use the **network-policy** command in interface configuration mode. To remove the policy, use the **no** form of this command.

network-policy *profile-number*
no network-policy

Syntax Description

profile-number	The network-policy profile number to apply to the interface.

Command Default

No network-policy profiles are applied.

Command Modes

Interface configuration (config-if)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

Use the **network-policy** *profile number* interface configuration command to apply a profile to an interface.

You cannot apply the **switchport voice vlan** command on an interface if you first configure a network-policy profile on it. However, if **switchport voice vlan** *vlan-id* is already configured on the interface, you can apply a network-policy profile on the interface. The interface then has the voice or voice-signaling VLAN network-policy profile applied.

This example shows how to apply network-policy profile 60 to an interface:

```
Device(config)# interface gigabitethernet1/0/1
Device(config-if)# network-policy 60
```

network-policy profile (global configuration)

To create a network-policy profile and to enter network-policy configuration mode, use the **network-policy profile** command in global configuration mode. To delete the policy and to return to global configuration mode, use the **no** form of this command.

network-policy profile *profile-number*
no network-policy profile *profile-number*

Syntax Description

profile-number	Network-policy profile number. The range is 1 to 4294967295.

Command Default

No network-policy profiles are defined.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

Use the **network-policy profile** global configuration command to create a profile and to enter network-policy profile configuration mode.

To return to privileged EXEC mode from the network-policy profile configuration mode, enter the **exit** command.

When you are in network-policy profile configuration mode, you can create the profile for voice and voice signaling by specifying the values for VLAN, class of service (CoS), differentiated services code point (DSCP), and tagging mode.

These profile attributes are contained in the Link Layer Discovery Protocol for Media Endpoint Devices (LLDP-MED) network-policy time-length-value (TLV).

This example shows how to create network-policy profile 60:

```
Device(config)# network-policy profile 60
Device(config-network-policy)#
```

power efficient-ethernet auto

To enable Energy Efficient Ethernet (EEE) for an interface, use the **power efficient-ethernet auto** command in interface configuration mode. To disable EEE on an interface, use the **no** form of this command.

power efficient-ethernet auto
no power efficient-ethernet auto

Syntax Description

This command has no arguments or keywords.

Command Default

EEE is disabled.

Command Modes

Interface configuration (config-if)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

You can enable EEE on devices that support low power idle (LPI) mode. Such devices can save power by entering LPI mode during periods of low utilization. In LPI mode, systems on both ends of the link can save power by shutting down certain services. EEE provides the protocol needed to transition into and out of LPI mode in a way that is transparent to upper layer protocols and applications.

The **power efficient-ethernet auto** command is available only if the interface is EEE capable. To check if an interface is EEE capable, use the **show eee capabilities** EXEC command.

When EEE is enabled, the device advertises and autonegotiates EEE to its link partner. To view the current EEE status for an interface, use the **show eee status** EXEC command.

This command does not require a license.

This example shows how to enable EEE for an interface:

```
Device(config-if)# power efficient-ethernet auto
Device(config-if)#
```

This example shows how to disable EEE for an interface:

```
Device(config-if)# no power efficient-ethernet auto
Device(config-if)#
```

power-priority

To configure Cisco StackPower power-priority values for a switch in a power stack and for its high-priority and low-priority PoE ports, use the **power-priority** command in switch stack-power configuration mode. To return to the default setting, use the **no** form of the command.

power-priority {**high** *value* | **low** *value* | **switch** *value*}
no power-priority {**high** | **low** | **switch**}

Syntax Description

high *value*	Sets the power priority for the ports configured as high-priority ports. The range is 1 to 27, with 1 as the highest priority. The **high** value must be lower than the value set for the low-priority ports and higher than the value set for the switch.
low *value*	Sets the power priority for the ports configured as low-priority ports. The range is 1 to 27. The **low** value must be higher than the value set for the high-priority ports and the value set for the switch.
switch *value*	Sets the power priority for the switch. The range is 1 to 27. The **switch** value must be lower than the values set for the low and high-priority ports.

Command Default

If no values are configured, the power stack randomly determines a default priority.

The default ranges are 1 to 9 for switches, 10 to 18 for high-priority ports, 19 to 27 for low-priority ports.

On non-PoE switches, the high and low values (for port priority) have no effect.

Command Modes

Switch stack-power configuration (config-stack)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

To access switch stack-power configuration mode, enter the **stack-power switch** *switch-number* global configuration command.

Cisco StackPower power-priority values determine the order for shutting down switches and ports when power is lost and load shedding must occur. Priority values are from 1 to 27; the highest numbers are shut down first.

We recommend that you configure different priority values for each switch and for its high priority ports and low priority ports to limit the number of devices shut down at one time during a loss of power. If you try to configure the same priority value on different switches in a power stack, the configuration is allowed, but you receive a warning message.

Note This command is available only on switch stacks running the IP Base or IP Services feature set.

Examples

This is an example of setting the power priority for switch 1 in power stack a to 7, for the high-priority ports to 11, and for the low-priority ports to 20.

```
Device(config)# stack-power switch 1
Device(config-switch-stackpower)# stack-id power_stack_a
Device(config-switch-stackpower)# power-priority high 11
Device(config-switch-stackpower)# power-priority low 20
Device(config-switch-stackpower)# power-priority switch 7
Device(config-switch-stackpower)# exit
```

power inline

To configure the power management mode on PoE ports, use the **power inline** command in interface configuration mode. To return to the default settings, use the **no** form of this command.

power inline {**auto** [**max** *max-wattage*] | **consumption** *max-wattage* | **never** | **port** {**1-event** | **2-event** | **priority** *value*} | **static** [**max** *max-wattage*]}
no power inline {**auto** | **consumption** | **never** | **port** {**1-event** | **2-event** | **priority**} | **static**}

Syntax Description

auto	Enables powered-device detection. If enough power is available, automatically allocates power to the PoE port after device detection. Allocation is on the first-come, first-serve basis.
max *max-wattage*	(Optional) Limits the power allowed on a port. The range is 4000 to 30000 mW. If no value is specified, the maximum is allowed.
never	Disables device detection, and disables power to the port.
port	Configures the power priority of the port.
1-event	Enables 1-event classification. This is applicable only when the port is in Universal Power over Ethernet-plus (UPOE) mode.
2-event	Enables 2-event classification.
priority *value*	Sets the power priority of the port. In case of a power supply failure, ports configured as lowest priority (7) are turned off first and ports configured as highest priority (0) are turned off last. The range is 0 to 7.
static	Enables powered-device detection. Pre-allocates (reserves) power for a port before the switch discovers the powered device. This action guarantees that the device connected to the interface receives enough power.

Command Default

The default is **auto** (enabled).

The maximum wattage is 30,000 mW.

The default PoE port priority is **0**.

Command Default

Interface configuration (config-if)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.
Cisco IOS XE Amsterdam 17.3.1	The port priority value was introduced to configure power priority on PoE ports.

Usage Guidelines

This command is supported only on PoE-capable ports. If you enter this command on a port that does not support PoE, the following error message appears:

```
Device(config)# interface gigabitethernet1/0/1
Device(config-if)# power inline auto
                   ^
% Invalid input detected at '^' marker.
```

In a switch stack, this command is supported on all ports in the stack that support PoE.

Use the **max** *max-wattage* option to disallow higher-power powered devices. With this configuration, when the powered device sends Cisco Discovery Protocol messages requesting more power than the maximum wattage, the switch removes power from the port. If the powered-device IEEE class maximum is greater than the maximum wattage, the switch does not power the device. The power is reclaimed into the global power budget.

Note The switch never powers any class 0 or class 3 device if the **power inline max max-wattage** command is configured for less than 30 W.

If the switch denies power to a powered device (the powered device requests more power through Cisco Discovery Protocol messages or if the IEEE class maximum is greater than the maximum wattage), the PoE port is in a power-deny state. The switch generates a system message, and the Oper column in the **show power inline** command output shows *power-deny*.

Use the **power inline static max** command to give a port high priority. The switch allocates PoE to a port configured in static mode before allocating power to a port configured in auto mode. The switch reserves power for the static port when it is configured rather than upon device discovery. The switch reserves the power on a static port even when there is no connected device and whether or not the port is in a shutdown or in a no shutdown state. The switch allocates the configured maximum wattage to the port, and the amount is never adjusted through the IEEE class or by Cisco Discovery Protocol messages from the powered device. Because power is pre-allocated, any powered device that uses less than or equal to the maximum wattage is guaranteed power when it is connected to a static port. However, if the powered device IEEE class is greater than the maximum wattage, the switch does not supply power to it. If the switch learns through Cisco Discovery Protocol messages that the powered device needs more than the maximum wattage, the powered device is shut down.

If the switch cannot pre-allocate power when a port is in static mode (for example, because the entire power budget is already allocated to other auto or static ports), this message appears:

```
Command rejected: power inline static: pwr not available.
```

The port configuration remains unchanged.

When you configure a port by using the **power inline auto** or the **power inline static** command, the port autonegotiates by using the configured speed and duplex settings. This is necessary to determine the power requirements of the connected device (whether or not it is a powered device). After the power requirements have been determined, the switch hardcodes the interface by using the configured speed and duplex settings without resetting the interface.

When you configure a port by using the **power inline never** command, the port reverts to the configured speed and duplex settings.

If a port has a Cisco-powered device connected to it, you should not use the **power inline never** command to configure the port. A false link-up can occur, placing the port in an error-disabled state.

Use the **power inline port priority** command to configure the power priority of a PoE port. Powered devices connected to ports with low port priority are shut down first in case of a power shortage.

You can verify your settings by entering the **show power inline** command.

Examples

This example shows how to enable detection of a powered device and to automatically power a PoE port on a switch:

```
Device> enable
Device# configure terminal
Device(config)# interface gigabitethernet1/0/2
Device(config-if)# power inline auto
```

This example shows how to configure a PoE port on a switch to allow a class 1 or a class 2 powered device:

```
Device> enable
Device# configure terminal
Device(config)# interface gigabitethernet1/0/2
Device(config-if)# power inline auto max 7000
```

This example shows how to disable powered-device detection and to not power a PoE port on a switch:

```
Device> enable
Device# configure terminal
Device(config)# interface gigabitethernet1/0/2
Device(config-if)# power inline never
```

This example shows how to set the priority of a PoE port to the highest, so that it will be one of the last ports to be shut down in case of power supply failure:

```
Device> enable
Device# configure terminal
Device(config)# interface gigabitethernet1/0/1
```

```
Device(config-if)# power inline port priority 0
```

Related Commands

Command	Description
power inline max	Specifies the maximum amount of power, in milliwatts, that a device connected to a port can consume.
power inline static	Allocates power from the system power pool to a switch port.
power inline auto	Turns on the device discovery protocol and applies power to the device.
power inline never	Sets the inline power to the off mode on a switch port.
power inline port priority	Configures port priorities on PoE ports.
show power inline	Displays the power status for the specified port or for all ports.

power inline auto-shutdown

To enable automatic shutdown control on Power over Ethernet (PoE) ports during power shortage, use the **power inline auto-shutdown** command in global configuration mode. To disable the automatic shutdown control on PoE ports, use the **no** form of this command.

power inline auto-shutdown
no power inline auto-shutdown

Syntax Description

This command has no arguments or keywords.

Command Default

Automatic shutdown control on PoE ports is disabled.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS XE Amsterdam 17.3.1	This command was introduced.

Usage Guidelines

This command must be configured for the **power inline port priority** command to work. The **power inline port priority** command configures port priorities on PoE ports.

Examples

This example shows how to enable the automatic shutdown control on PoE ports:

```
Device> enable
Device# configure terminal
Device(config)# power inline auto-shutdown
```

Related Commands

Command	Description
power inline port priority	Configures port priorities on PoE ports.

power inline police

To enable policing of real-time power consumption on a powered device, use the **power inline police** command in interface configuration mode. To disable this feature, use the **no** form of this command

power inline police [**action** {**errdisable** | **log**}]
no power inline police

Syntax Description

action errdisable	(Optional) Configures the device to turn off power to the port if the real-time power consumption exceeds the maximum power allocation on the port. This is the default action.
action log	(Optional) Configures the device to generate a syslog message while still providing power to a connected device if the real-time power consumption exceeds the maximum power allocation on the port.

Command Default

Policing of the real-time power consumption of the powered device is disabled.

Command Modes

Interface configuration (config-if)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

This command is supported only on Power over Ethernet (PoE)-capable ports. If you enter this command on a device or port that does not support PoE, an error message appears.

In a switch stack, this command is supported on all switches or ports in the stack that support PoE and real-time power-consumption monitoring.

When policing of the real-time power consumption is enabled, the device takes action when a powered device consumes more power than the allocated maximum amount.

When PoE is enabled, the device senses the real-time power consumption of the powered device. This feature is called *power monitoring* or *power sensing*. The device also polices the power usage with the *power policing* feature.

When power policing is enabled, the device uses one of the these values as the cutoff power on the PoE port in this order:

1. The user-defined power level that limits the power allowed on the port when you enter the **power inline auto max** *max-wattage* or the **power inline static max** *max-wattage* interface configuration command
2. The device automatically sets the power usage of the device by using CDP power negotiation or by the IEEE classification and LLPD power negotiation.

If you do not manually configure the cutoff-power value, the device automatically determines it by using CDP power negotiation or the device IEEE classification and LLDP power negotiation. If CDP or LLDP are not enabled, the default value of 30 W is applied. However without CDP or LLDP, the device does not allow devices to consume more than 15.4 W of power because values from 15400 to 30000 mW are only allocated based on CDP or LLDP requests. If a powered device consumes more than 15.4 W without CDP or LLDP negotiation, the device might be in violation of the maximum current *Imax* limitation and might experience

an *Icut* fault for drawing more current than the maximum. The port remains in the fault state for a time before attempting to power on again. If the port continuously draws more than 15.4 W, the cycle repeats.

When a powered device connected to a PoE+ port restarts and sends a CDP or LLDP packet with a power TLV, the device locks to the power-negotiation protocol of that first packet and does not respond to power requests from the other protocol. For example, if the device is locked to CDP, it does not provide power to devices that send LLDP requests. If CDP is disabled after the device has locked on it, the device does not respond to LLDP power requests and can no longer power on any accessories. In this case, you should restart the powered device.

If power policing is enabled, the device polices power usage by comparing the real-time power consumption to the maximum power allocated on the PoE port. If the device uses more than the maximum power allocation (or *cutoff power*) on the port, the device either turns power off to the port, or the device generates a syslog message and updates the LEDs (the port LEDs are blinking amber) while still providing power to the device.

- To configure the device to turn off power to the port and put the port in the error-disabled state, use the **power inline police** interface configuration command.
- To configure the device to generate a syslog message while still providing power to the device, use the **power inline police action log** command.

If you do not enter the **action log** keywords, the default action is to shut down the port, turn off power to it, and put the port in the PoE error-disabled state. To configure the PoE port to automatically recover from the error-disabled state, use the **errdisable detect cause inline-power** global configuration command to enable error-disabled detection for the PoE cause and the **errdisable recovery cause inline-power interval** *interval* global configuration command to enable the recovery timer for the PoE error-disabled cause.

Caution If policing is disabled, no action occurs when the powered device consumes more than the maximum power allocation on the port, which could adversely affect the device.

You can verify your settings by entering the **show power inline police** privileged EXEC command.

Examples

This example shows how to enable policing of the power consumption and configuring the device to generate a syslog message on the PoE port on a device:

```
Device(config)# interface gigabitethernet1/0/2
Device(config-if)# power inline police action log
```

power supply

To configure and manage the internal power supplies on a switch, use the **power supply** command in privileged EXEC mode.

power supply *stack-member-number* **slot** {**A** | **B**} {**off** | **on**}

Syntax Description

stack-member-number	Stack member number for which to configure the internal power supplies. The range is 1 to 9, depending on the number of switches in the stack. This parameter is available only on stacking-capable switches.
slot	Selects the switch power supply to set.
A	Selects the power supply in slot A.
B	Selects the power supply in slot B. **Note** Power supply slot B is the closest slot to the outer edge of the switch.
off	Sets the switch power supply to off.
on	Sets the switch power supply to on.

Command Default

The switch power supply is on.

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

The **power supply** command applies to a switch or to a switch stack where all switches are the same platform.

In a switch stack with the same platform switches, you must specify the stack member before entering the **slot** {**A** | **B**} **off** or **on** keywords.

To return to the default setting, use the **power supply** *stack-member-number* **on** command.

You can verify your settings by entering the **show env power** privileged EXEC command.

Examples

This example shows how to set the power supply in slot A to off:

```
Device> power supply 2 slot A off
Disabling Power supply A may result in a power loss to PoE devices and/or switches ...
Continue? (yes/[no]): yes
Device
Jun 10 04:52:54.389: %PLATFORM_ENV-6-FRU_PS_OIR: FRU Power Supply 1 powered off
Jun 10 04:52:56.717: %PLATFORM_ENV-1-FAN_NOT_PRESENT: Fan is not present
```

This example shows how to set the power supply in slot A to on:

```
Device> power supply 1 slot B on
Jun 10 04:54:39.600: %PLATFORM_ENV-6-FRU_PS_OIR: FRU Power Supply 1 powered on
```

This example shows the output of the show env power command:

```
Device> show env power
SW  PID                 Serial#     Status           Sys Pwr  PoE Pwr  Watts
--  ------------------  ----------  ---------------  -------  -------  -----
1A  PWR-1RUC2-640WAC    DCB1705B05B OK               Good     Good     250/390
1B  Not Present
```

power supply autoLC shutdown

To enable automatic shutdown control on linecards, use the **power supply autoLC shutdown** command in global configuration mode. This command is enabled by default and cannot be disabled. The `AutoLC shutdown cannot be disabled` message will be displayed if you try to disable it.

power supply autoLC shutdown
no power supply autoLC shutdown

Syntax Description

This command has no arguments or keywords.

Command Default

Automatic shutdown control on linecards is enabled.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Examples

This example shows how to enable automatic shutdown on linecards:

```
Device> enable
Device# configure terminal
Device(config)# power supply autoLC shutdown
```

shell trigger

To create an event trigger, use the **shell trigger** command in global configuration mode. Use the **no** form of this command to delete the trigger.

shell trigger *identifier description*

no shell trigger *identifier description*

Syntax Description

identifier	Specifies the event trigger identifier. The identifier should have no spaces or hyphens between words.
description	Specifies the event trigger description text.

Command Default

System-defined event triggers:

- CISCO_DMP_EVENT
- CISCO_IPVSC_AUTO_EVENT
- CISCO_PHONE_EVENT
- CISCO_SWITCH_EVENT
- CISCO_ROUTER_EVENT
- CISCO_WIRELESS_AP_EVENT
- CISCO_WIRELESS_LIGHTWEIGHT_AP_EVENT

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

Use this command to create user-defined event triggers for use with the **macro auto device** and the **macro auto execute** commands.

To support dynamic device discovery when using IEEE 802.1x authentication, you need to configure the RADIUS authentication server to support the Cisco attribute-value pair: **auto-smart-port**=*event trigger*.

Example

This example shows how to create a user-defined event trigger called RADIUS_MAB_EVENT:

```
Device(config)# shell trigger RADIUS_MAB_EVENT MAC_AuthBypass Event
Device(config)# end
```

show beacon all

To display the status of beacon LED on the device, use the **show beacon all** command in privileged EXEC mode.

show beacon {**rp** {**active** | **standby**} | **fan-tray** | **power-supply** *ps-slot-number* | **slot** *slot-number* } | **all**}

Syntax Description

rp {**active**	**standby**}	Specifies the active or the standby Supervisor whose beacon LED status is to be displayed.
slot *slot-num*	Specifies the slot whose beacon LED status is to be displayed.
fan-tray	Specifies that the status of fan tray beacon is to be displayed.
power-supply *ps-slot-number*	Specifies the power supply whose beacon LED status is to be displayed.
all	Displays the status of all beacon LEDs.

Command History

Release	Modification
Cisco IOS XE Fuji 16.9.1	This command was introduced.

Command Default

This command has no default settings.

Command Modes

Privileged EXEC (#)

Usage Guidelines

Use the command **show beacon all** to know the status of all beacon LEDs.

Sample output of *show beacon all* command on a 7-slot device.

```
Device#show beacon all
Slot#           Beacon Status
---------------------------------
 1                  OFF
 2                  OFF
 3                  OFF
*4                  OFF
 5                  OFF
 6                  OFF
 7                  OFF
---------------------------------
Power-Supply#   Beacon Status
---------------------------------
 4                  OFF
 8                  OFF
---------------------------------
FANTRAY BEACON:     OFF
Switch#
```

Following is a sample output of *show beacon rp* command on a 7-slot device

```
Device#show beacon rp active
Slot#   Beacon Status
-----------------------
 3                  ON

Switch#show beacon rp standby
Slot#   Beacon Status
-----------------------
 4                  OFF
```

The following example displays the status of fantray:

```
Device#show beacon fantray
--------------------------------
FANTRAY BEACON: ON
Switch#
```

show eee

To display Energy Efficient Ethernet (EEE) information for an interface, use the **show eee** command in EXEC mode.

show eee {**capabilities**| **counters**| **status**} **interface** *interface-id*

Syntax Description

capabilities	Displays EEE capabilities for the specified interface.
counters	Displays EEE counters for the specified interface.
status	Displays EEE status information for the specified interface.
interface *interface-id*	Specifies the interface for which to display EEE capabilities or status information.

Command Default

None

Command Modes

User EXEC

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

You can enable EEE on devices that support low power idle (LPI) mode. Such devices can save power by entering LPI mode during periods of low power utilization. In LPI mode, systems on both ends of the link can save power by shutting down certain services. EEE provides the protocol needed to transition into and out of LPI mode in a way that is transparent to upper layer protocols and applications.

To check if an interface is EEE capable, use the **show eee capabilities** command. You can enable EEE on an interface that is EEE capable by using the **power efficient-ethernet auto** interface configuration command.

To view the EEE status, LPI status, and wake error count information for an interface, use the **show eee status** command.

To view the EEE counters for an interface, use the **show eee counters** command.

Note Starting from Cisco IOS XE Gibraltar 16.12.1, the **show eee counters interface** *interface-id* command is not supported on line cards with Multigigabit (mGig) Ethernet ports.

This is an example of output from the **show eee capabilities** command on an interface where EEE is enabled:

```
Device# show eee capabilities interface gigabitethernet1/0/1
Gi1/0/1
        EEE(efficient-ethernet):  yes (100-Tx and 1000T auto)
```

```
        Link Partner          :  yes (100-Tx and 1000T auto)
```

This is an example of output from the **show eee capabilities** command on an interface where EEE is not enabled:

```
Device# show eee capabilities interface gigabitethernet2/0/1
Gi2/0/1
        EEE(efficient-ethernet):  not enabled
        Link Partner          :  not enabled
```

This is an example of output from the **show eee status** command on an interface where EEE is enabled and operational. The table that follows describes the fields in the display.

```
Device# show eee status interface gigabitethernet1/0/4
Gi1/0/4 is up
        EEE(efficient-ethernet):  Operational
        Rx LPI Status         :  Received
        Tx LPI Status         :  Received
```

This is an example of output from the **show eee status** command on an interface where EEE is operational and the ports are in low power save mode:

```
Device# show eee status interface gigabitethernet1/0/3
Gi1/0/3 is up
        EEE(efficient-ethernet):  Operational
        Rx LPI Status         :  Low Power
        Tx LPI Status         :  Low Power
        Wake Error Count      :  0
```

This is an example of output from the **show eee status** command on an interface where EEE is not enabled because a remote link partner is incompatible with EEE:

```
Device# show eee status interface gigabitethernet1/0/3
Gi1/0/3 is down
        EEE(efficient-ethernet):  Disagreed
        Rx LPI Status         :  None
        Tx LPI Status         :  None
        Wake Error Count      :  0
```

This is an example of output from the **show eee counters** command:

```
Device# show eee counters interface gigabitEthernet 2/0/1
LP Active Tx Time (10us) : 66649648
LP Transitioning Tx : 462
LP Active Rx Time (10us) : 64911682
LP Transitioning Rx : 153
```

Table 2: show eee status Field Descriptions

Field	Description
EEE (efficient-ethernet)	The EEE status for the interface. This field can have any of the following values: • N/A—The port is not capable of EEE. • Disabled—The port EEE is disabled. • Disagreed—The port EEE is not set because a remote link partner might be incompatible with EEE; either it is not EEE capable, or its EEE setting is incompatible. • Operational—The port EEE is enabled and operating. If the interface speed is configured as 10 Mbps, EEE is disabled internally. When the interface speed moves back to auto, 100 Mbps or 1000 Mbps, EEE becomes active again.
Rx/Tx LPI Status	The Low Power Idle (LPI) status for the link partner. These fields can have any of the following values: • N/A—The port is not capable of EEE. • Interrupted—The link partner is in the process of moving to low power mode. • Low Power—The link partner is in low power mode. • None— EEE is disabled or not capable at the link partner side. • Received—The link partner is in low power mode and there is traffic activity. If an interface is configured as half-duplex, the LPI status is None, which means the interface cannot be in low power mode until it is configured as full-duplex.
Wake Error Count	The number of PHY wake-up faults that have occurred. A wake-up fault can occur when EEE is enabled and the connection to the link partner is broken. This information is useful for PHY debugging.

show environment

To display information about the sensors, and status of fan and power supply, use the **show environment** command in EXEC mode.

show environment { **all** | **counters** | **history** | **location** | **sensor** | **status** | **summary** | **table** }

Syntax Description

all	(Optional) Displays the list of sensors.
counters	(Optional) Displays the operational counters of the sensors.
history	(Optional) Displays history of the sensor state changes.
location	(Optional) Displays the sensors by location.
sensor	(Optional) Displays sensor summary.
status	(Optional) Displays the power supply and fan tray status of the switch.
summary	(Optional) Displays a summary of all the environment monitoring sensors.
table	(Optional) Displays sensor state table.

Command Default

None

Command Modes

User EXEC (>)

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

Use the **show environment** EXEC command to display the information for the switch being accessed—a standalone switch or the active switch.

Examples

This example shows a sample output of the **show environment all** command:

```
Device> show environment all

Sensor List:  Environmental Monitoring
 Sensor           Location          State             Reading
 Temp: UADP_0_0   R1                Normal            52 Celsius
 Temp: UADP_0_1   R1                Normal            50 Celsius
 Temp: UADP_0_2   R1                Normal            50 Celsius
 Temp: UADP_0_3   R1                Normal            52 Celsius
 Temp: UADP_0_4   R1                Normal            51 Celsius
 Temp: UADP_0_5   R1                Normal            52 Celsius
 Temp: UADP_0_6   R1                Normal            63 Celsius
 Temp: UADP_0_7   R1                Normal            54 Celsius
..
<output truncated>
```

This example shows a sample output of the **show environment status** command:

```
Device> show environment status

Power                                                          Fan States
Supply  Model No              Type  Capacity  Status         1     2
------  --------------------  ----  --------  -------------  ------------
PS1     C9600-PWR-2KWAC       ac    2000 W    active         good  good
PS4     C9600-PWR-2KWAC       ac    2000 W    active         good  good

PS Current Configuration Mode : Combined
PS Current Operating State    : none

Power supplies currently active    : 2
Power supplies currently available : 2

Fantray : good
Power consumed by Fantray : 300 Watts
Fantray airflow direction : side-to-side
Fantray beacon LED: off
Fantray status LED: green
```

show errdisable detect

To display error-disabled detection status, use the **show errdisable detect** command in EXEC mode.

show errdisable detect

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

User EXEC (>)

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

A gbic-invalid error reason refers to an invalid small form-factor pluggable (SFP) module.

The error-disable reasons in the command output are listed in alphabetical order. The mode column shows how error-disable is configured for each feature.

You can configure error-disabled detection in these modes:

- port mode—The entire physical port is error-disabled if a violation occurs.
- vlan mode—The VLAN is error-disabled if a violation occurs.
- port/vlan mode—The entire physical port is error-disabled on some ports and is per-VLAN error-disabled on other ports.

This is an example of output from the **show errdisable detect** command:

```
Device> show errdisable detect
ErrDisable Reason    Detection    Mode
-----------------    ---------    ----
arp-inspection       Enabled      port
bpduguard            Enabled      vlan
channel-misconfig    Enabled      port
community-limit      Enabled      port
dhcp-rate-limit      Enabled      port
dtp-flap             Enabled      port
gbic-invalid         Enabled      port
inline-power         Enabled      port
invalid-policy       Enabled      port
l2ptguard            Enabled      port
link-flap            Enabled      port
loopback             Enabled      port
lsgroup              Enabled      port
pagp-flap            Enabled      port
psecure-violation    Enabled      port/vlan
security-violatio    Enabled      port
sfp-config-mismat    Enabled      port
storm-control        Enabled      port
```

```
udld                Enabled      port
vmps                Enabled      port
```

show errdisable recovery

To display the error-disabled recovery timer information, use the **show errdisable recovery** command in EXEC mode.

show errdisable recovery

Syntax Description This command has no arguments or keywords.

Command Default None

Command Modes User EXEC (>)

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines A gbic-invalid error-disable reason refers to an invalid small form-factor pluggable (SFP) module interface.

Note Though visible in the output, the unicast-flood field is not valid.

show hardware led

To display the status of hardware components on the device, use the **show hardware led** command in privileged EXEC mode.

show hardware led [**port** [**FortyGigabitEthernet** *interface-number* | **TenGigabitEthernet** *interface-number* | **GigabitEthernet** *interface-number* | **status**]]

Syntax Description

FortyGigabitEthernet *interface-number*	Specifies the FortyGigabit interface whose LED status is to be displayed
TenGigabitEthernet *interface-number*	Specifies the Tengigabit interface whose LED status is to be displayed.
GigabitEthernet *interface-number*	Specifies the One Gigabit interface whose LED status is to be displayed.
status	Displays the status of the ports on the device.

Command History

Release	Modification
Cisco IOS XE Fuji 16.8.1a	This command was introduced.

Command Default

This command has no default settings.

Command Modes

Privileged EXEC (#)

Usage Guidelines

The **show hardware led** command displays the status of ports on the Line Cards and Supervisors, status of PowerSupply and Fan tray modules, and the status of RJ45 console.

On a Supervisor there are four PORT SET ENABLED LEDs, each representing a group of ports. Port numbers 1 to 4 form Group 1 (G1), Port numbers 5 to 8 form Group 2 (G2), Port number 9 is Group 3 (G3) and Port number 10 is Group 4 (G4). Status of each group for an active or standy supervisor is displayed.

The command displays the following colors to indicate status of the PORT LEDs:

- GREEN—Indicates the interface is up.
- BLACK—Indicates the interface is down.
- AMBER—Indicates the interface ADMIN is down.

The command displays the following colors to indicate the status of Line Cards (LC):

- AMBER—Indicates the LC is booting up.
- GREEN—Indicates the LC is up and running.
- RED—Indicates the LC has a problem or is disabled.

Staus of BEACON LED for fantray, power-supply, line cards and supervisor moodules are indicated by the following colours:

- BLUE—Indicates the Beacon LED is On.
- BLACK—Indicates the Beacon LED is Off.

Status of SYSTEM LED is indicated by the following colors:

- GREEN—Indicates all components are up and running.
- RED—Indicates that temperature exceeds either the critical temperature or the shutdown threshold; or fantray is either removed or has failed.
- ORANGE—Indicates that temperature exceeds the warning threshold; or fantray experiences partial fails; or active power supply failed.

For more information on LEDs refer Cisco Catalyst 9400 Series Switches Hardware Installation Guide.

Sample output of *show hardware led* command

```
Device#show hardware led

SWITCH: C9407R

SYSTEM: GREEN


Line Card : 1
PORT STATUS: (24) Te1/0/1:BLACK Te1/0/2:BLACK Te1/0/3:BLACK Te1/0/4:BLACK Te1/0/5:BLACK
Te1/0/6:BLACK Te1/0/7:BLACK Te1/0/8:BLACK Te1/0/9:BLACK Te1/0/10:BLACK Te1/0/11:BLACK
Te1/0/12:BLACK Te1/0/13:BLACK Te1/0/14:BLACK Te1/0/15:BLACK Te1/0/16:BLACK Te1/0/17:BLACK
Te1/0/18:BLACK Te1/0/19:BLACK Te1/0/20:BLACK Te1/0/21:BLACK Te1/0/22:BLACK Te1/0/23:BLACK
Te1/0/24:BLACK
BEACON: BLUE

STATUS: GREEN


Line Card : 2
PORT STATUS: (48) Gi2/0/1:ACT_GREEN Gi2/0/2:ACT_GREEN Gi2/0/3:BLACK Gi2/0/4:BLACK
Gi2/0/5:BLACK Gi2/0/6:BLACK Gi2/0/7:BLACK Gi2/0/8:BLACK Gi2/0/9:BLACK Gi2/0/10:BLACK
Gi2/0/11:BLACK Gi2/0/12:BLACK Gi2/0/13:BLACK Gi2/0/14:BLACK Gi2/0/15:BLACK Gi2/0/16:BLACK
Gi2/0/17:BLACK Gi2/0/18:BLACK Gi2/0/19:BLACK Gi2/0/20:BLACK Gi2/0/21:BLACK Gi2/0/22:BLACK
Gi2/0/23:ACT_GREEN Gi2/0/24:BLACK Gi2/0/25:ACT_GREEN Gi2/0/26:BLACK Gi2/0/27:BLACK
Gi2/0/28:BLACK Gi2/0/29:BLACK Gi2/0/30:BLACK Gi2/0/31:BLACK Gi2/0/32:BLACK Gi2/0/33:BLACK
Gi2/0/34:BLACK Gi2/0/35:BLACK Gi2/0/36:BLACK Gi2/0/37:BLACK Gi2/0/38:BLACK Gi2/0/39:BLACK
Gi2/0/40:BLACK Gi2/0/41:BLACK Gi2/0/42:BLACK Gi2/0/43:BLACK Gi2/0/44:BLACK Gi2/0/45:ACT_GREEN
 Gi2/0/46:BLACK Gi2/0/47:BLACK Gi2/0/48:BLACK
BEACON: BLUE

STATUS: GREEN


SUPERVISOR: ACTIVE
PORT STATUS: (10) Te3/0/1:BLACK Te3/0/2:BLACK Te3/0/3:BLACK Te3/0/4:BLACK Te3/0/5:BLACK
Te3/0/6:BLACK Te3/0/7:BLACK Te3/0/8:BLACK Fo3/0/9:BLACK Fo3/0/10:BLACK

BEACON: BLUE

GROUP LED: UPLINK-G1:GREEN UPLINK-G2:BLACK UPLINK-G3:BLACK UPLINK-G4:BLACK


SUPERVISOR: STANDBY
```

```
PORT STATUS: (10) Te4/0/1:BLACK Te4/0/2:BLACK Te4/0/3:BLACK Te4/0/4:BLACK Te4/0/5:BLACK
Te4/0/6:BLACK Te4/0/7:BLACK Te4/0/8:BLACK Fo4/0/9:BLACK Fo4/0/10:BLACK

BEACON: BLUE

GROUP LED: UPLINK-G1:BLACK UPLINK-G2:BLACK UPLINK-G3:GREEN UPLINK-G4:BLACK


Line Card : 5
PORT STATUS: (48) Gi5/0/1:BLACK Gi5/0/2:BLACK Gi5/0/3:BLACK Gi5/0/4:BLACK Gi5/0/5:BLACK
Gi5/0/6:BLACK Gi5/0/7:BLACK Gi5/0/8:BLACK Gi5/0/9:BLACK Gi5/0/10:BLACK Gi5/0/11:BLACK
Gi5/0/12:BLACK Gi5/0/13:BLACK Gi5/0/14:BLACK Gi5/0/15:BLACK Gi5/0/16:BLACK Gi5/0/17:BLACK
Gi5/0/18:BLACK Gi5/0/19:BLACK Gi5/0/20:BLACK Gi5/0/21:BLACK Gi5/0/22:BLACK Gi5/0/23:ACT_GREEN
 Gi5/0/24:BLACK Gi5/0/25:ACT_GREEN Gi5/0/26:BLACK Gi5/0/27:BLACK Gi5/0/28:BLACK Gi5/0/29:BLACK
 Gi5/0/30:BLACK Gi5/0/31:BLACK Gi5/0/32:BLACK Gi5/0/33:BLACK Gi5/0/34:BLACK Gi5/0/35:BLACK
 Gi5/0/36:BLACK Gi5/0/37:BLACK Gi5/0/38:BLACK Gi5/0/39:BLACK Gi5/0/40:BLACK Gi5/0/41:ACT_GREEN
 Gi5/0/42:BLACK Gi5/0/43:BLACK Gi5/0/44:BLACK Gi5/0/45:ACT_GREEN Gi5/0/46:BLACK Gi5/0/47:BLACK
 Gi5/0/48:ACT_GREEN
BEACON: BLUE
STATUS: GREEN

Line Card : 6
PORT STATUS: (48) Gi6/0/1:BLACK Gi6/0/2:BLACK Gi6/0/3:BLACK Gi6/0/4:BLACK Gi6/0/5:BLACK
Gi6/0/6:BLACK Gi6/0/7:BLACK Gi6/0/8:BLACK Gi6/0/9:BLACK Gi6/0/10:BLACK Gi6/0/11:BLACK
Gi6/0/12:BLACK Gi6/0/13:BLACK Gi6/0/14:BLACK Gi6/0/15:BLACK Gi6/0/16:BLACK Gi6/0/17:BLACK
Gi6/0/18:BLACK Gi6/0/19:BLACK Gi6/0/20:BLACK Gi6/0/21:BLACK Gi6/0/22:BLACK Gi6/0/23:BLACK
Gi6/0/24:BLACK Gi6/0/25:BLACK Gi6/0/26:BLACK Gi6/0/27:BLACK Gi6/0/28:BLACK Gi6/0/29:BLACK
Gi6/0/30:BLACK Gi6/0/31:BLACK Gi6/0/32:BLACK Gi6/0/33:BLACK Gi6/0/34:BLACK Gi6/0/35:BLACK
Gi6/0/36:BLACK Gi6/0/37:BLACK Gi6/0/38:BLACK Gi6/0/39:BLACK Gi6/0/40:BLACK Gi6/0/41:ACT_GREEN
 Gi6/0/42:BLACK Gi6/0/43:BLACK Gi6/0/44:BLACK Gi6/0/45:BLACK Gi6/0/46:BLACK Gi6/0/47:BLACK
 Gi6/0/48:BLACK
BEACON: BLUE
STATUS: GREEN

Line Card : 7
PORT STATUS: (48) Gi7/0/1:BLACK Gi7/0/2:BLACK Gi7/0/3:BLACK Gi7/0/4:BLACK Gi7/0/5:BLACK
Gi7/0/6:BLACK Gi7/0/7:BLACK Gi7/0/8:BLACK Gi7/0/9:BLACK Gi7/0/10:BLACK Gi7/0/11:BLACK
Gi7/0/12:BLACK Gi7/0/13:BLACK Gi7/0/14:BLACK Gi7/0/15:BLACK Gi7/0/16:BLACK Gi7/0/17:BLACK
Gi7/0/18:BLACK Gi7/0/19:BLACK Gi7/0/20:BLACK Gi7/0/21:BLACK Gi7/0/22:BLACK Gi7/0/23:BLACK
Gi7/0/24:BLACK Te7/0/25:BLACK Te7/0/26:BLACK Te7/0/27:BLACK Te7/0/28:BLACK Te7/0/29:BLACK
Te7/0/30:BLACK Te7/0/31:BLACK Te7/0/32:BLACK Te7/0/33:BLACK Te7/0/34:BLACK Te7/0/35:BLACK
Te7/0/36:BLACK Te7/0/37:BLACK Te7/0/38:BLACK Te7/0/39:BLACK Te7/0/40:BLACK Te7/0/41:BLACK
Te7/0/42:BLACK Te7/0/43:BLACK Te7/0/44:BLACK Te7/0/45:BLACK Te7/0/46:BLACK Te7/0/47:BLACK
Te7/0/48:BLACK
BEACON: BLUE
STATUS: GREEN

RJ45 CONSOLE: GREEN
FANTRAY STATUS: GREEN
FANTRAY BEACON: BLUE
POWER-SUPPLY 1 BEACON: BLUE
POWER-SUPPLY 2 BEACON: BLUE
```

show hw-module subslot mode

To display the line card mode of the platform, use the **show hw-module subslot mode** command in privileged EXEC mode.

show hw-module subslot *slot/subslot* **mode**

Syntax Description

slot	Slot number. The range is from 0 to 10.
subslot	Subslot number. The range is from 0 to 0.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Examples

The following is sample output from the **show hw-module subslot mode** command:

```
Device# show hw-module subslot 1/0 mode

subslot [1/0] mode: dynamic
```

show idprom fan-tray

To display the serial number for the fan-tray component and the chassis, use the **show idprom fan-tray** command in privileged EXEC mode.

```
show idprom fan-tray
```

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.
Cisco IOS XE Fuji 16.8.1a	The output of the command was enhanced to include Chassis Serial Number in the command output.

The following is sample output from the **show idprom fan-tray** command:

```
Device#show idprom fan tray
Fan Tray Idprom:

Controller Type          : 3196
Hardware Revision        : 0.1
Top Assy. Revision       : 24
Deviation Number         : 0
PCB Serial Number        : FXS2006018B
Chassis Serial Number    : FXS2009Q09Z
RMA Test History         : 00
RMA Number               : 0-0-0-0
RMA History              : 00
CLEI Code                : 0
ECI Number               : 0
Product Identifier (PID) : WS-XFAN7
Version Identifier (VID) : V00
Manufacturing Test Data  : 00 00 00 00 00 00 00 00
Field Diagnostics Data   : 00 00 00 00 00 00 00 00
Environment Monitor Data : 03 00 00 00 15 E1 5E 00
                           A9
Environment Monitor Data : 00 06 00 FA
```

show ip interface

To display the usability status of interfaces configured for IP, use the **show ip interface** command in privileged EXEC mode.

show ip interface [*type number*] [**brief**]

Syntax Description

type	(Optional) Interface type.
number	(Optional) Interface number.
brief	(Optional) Displays a summary of the usability status information for each interface.

Command Default

The full usability status is displayed for all interfaces configured for IP.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

The Cisco IOS software automatically enters a directly connected route in the routing table if the interface is usable (which means that it can send and receive packets). If an interface is not usable, the directly connected routing entry is removed from the routing table. Removing the entry lets the software use dynamic routing protocols to determine backup routes to the network, if any.

If the interface can provide two-way communication, the line protocol is marked "up." If the interface hardware is usable, the interface is marked "up."

If you specify an optional interface type, information for that specific interface is displayed. If you specify no optional arguments, information on all the interfaces is displayed.

When an asynchronous interface is encapsulated with PPP or Serial Line Internet Protocol (SLIP), IP fast switching is enabled. A **show ip interface** command on an asynchronous interface encapsulated with PPP or SLIP displays a message indicating that IP fast switching is enabled.

You can use the **show ip interface brief** command to display a summary of the device interfaces. This command displays the IP address, the interface status, and other information.

The **show ip interface brief** command does not display any information related to Unicast RPF.

Examples

The following example shows interface information on Gigabit Ethernet interface 1/0/1:

```
Device# show ip interface gigabitethernet 1/0/1

GigabitEthernet1/0/1 is up, line protocol is up
  Internet address is 10.1.1.1/16
  Broadcast address is 255.255.255.255
  Address determined by setup command
  MTU is 1500 bytes
  Helper address is not set
  Directed broadcast forwarding is disabled
```

```
  Outgoing access list is not set
  Inbound access list is not set
  Proxy ARP is enabled
  Local Proxy ARP is disabled
  Security level is default
  Split horizon is enabled
  ICMP redirects are always sent
  ICMP unreachables are always sent
  ICMP mask replies are never sent
  IP fast switching is enabled
  IP fast switching on the same interface is disabled
  IP Flow switching is disabled
  IP CEF switching is enabled
  IP Feature Fast switching turbo vector
  IP VPN Flow CEF switching turbo vector
  IP multicast fast switching is enabled
  IP multicast distributed fast switching is disabled
  IP route-cache flags are Fast, CEF
  Router Discovery is disabled
  IP output packet accounting is disabled
  IP access violation accounting is disabled
  TCP/IP header compression is disabled
  RTP/IP header compression is disabled
  Policy routing is enabled, using route map PBR
  Network address translation is disabled
  BGP Policy Mapping is disabled
  IP Multi-Processor Forwarding is enabled
     IP Input features, "PBR",
         are not supported by MPF and are IGNORED
     IP Output features, "NetFlow",
         are not supported by MPF and are IGNORED
```

The following example shows how to display the usability status for a specific VLAN:

```
Device# show ip interface vlan 1

Vlan1 is up, line protocol is up
  Internet address is 10.0.0.4/24
  Broadcast address is 255.255.255.255
Address determined by non-volatile memory
  MTU is 1500 bytes
  Helper address is not set
  Directed broadcast forwarding is disabled
  Outgoing access list is not set
  Inbound  access list is not set
  Proxy ARP is enabled
  Local Proxy ARP is disabled
  Security level is default
  Split horizon is enabled
  ICMP redirects are always sent
  ICMP unreachables are always sent
  ICMP mask replies are never sent
  IP fast switching is enabled
  IP fast switching on the same interface is disabled
  IP Flow switching is disabled
  IP CEF switching is enabled
  IP Fast switching turbo vector
  IP Normal CEF switching turbo vector
  IP multicast fast switching is enabled
  IP multicast distributed fast switching is disabled
  IP route-cache flags are Fast, CEF
  Router Discovery is disabled
  IP output packet accounting is disabled
```

```
IP access violation accounting is disabled
TCP/IP header compression is disabled
RTP/IP header compression is disabled
Probe proxy name replies are disabled
Policy routing is disabled
Network address translation is disabled
WCCP Redirect outbound is disabled
WCCP Redirect inbound is disabled
WCCP Redirect exclude is disabled
BGP Policy Mapping is disabled
Sampled Netflow is disabled
IP multicast multilayer switching is disabled
Netflow Data Export (hardware) is enabled
```

The table below describes the significant fields shown in the display.

Table 3: show ip interface Field Descriptions

Field	Description
Broadcast address is	Broadcast address.
Peer address is	Peer address.
MTU is	MTU value set on the interface, in bytes.
Helper address	Helper address, if one is set.
Directed broadcast forwarding	Shows whether directed broadcast forwarding is enabled.
Outgoing access list	Shows whether the interface has an outgoing access list set.
Inbound access list	Shows whether the interface has an incoming access list set.
Proxy ARP	Shows whether Proxy Address Resolution Protocol (ARP) is enabled for the interface.
Security level	IP Security Option (IPSO) security level set for this interface.
Split horizon	Shows whether split horizon is enabled.
ICMP redirects	Shows whether redirect messages will be sent on this interface.
ICMP unreachables	Shows whether unreachable messages will be sent on this interface.
ICMP mask replies	Shows whether mask replies will be sent on this interface.
IP fast switching	Shows whether fast switching is enabled for this interface. It is generally enabled on serial interfaces, such as this one.
IP Flow switching	Shows whether Flow switching is enabled for this interface.
IP CEF switching	Shows whether Cisco Express Forwarding switching is enabled for the interface.
IP multicast fast switching	Shows whether multicast fast switching is enabled for the interface.

Field	Description
IP route-cache flags are Fast	Shows whether NetFlow is enabled on an interface. Displays "Flow init" to specify that NetFlow is enabled on the interface. Displays "Ingress Flow" to specify that NetFlow is enabled on a subinterface using the **ip flow ingress**command. Shows "Flow" to specify that NetFlow is enabled on a main interface using the **ip route-cache flow** command.
Router Discovery	Shows whether the discovery process is enabled for this interface. It is generally disabled on serial interfaces.
IP output packet accounting	Shows whether IP accounting is enabled for this interface and what the threshold (maximum number of entries) is.
TCP/IP header compression	Shows whether compression is enabled.
WCCP Redirect outbound is disabled	Shows the status of whether packets received on an interface are redirected to a cache engine. Displays "enabled" or "disabled."
WCCP Redirect exclude is disabled	Shows the status of whether packets targeted for an interface will be excluded from being redirected to a cache engine. Displays "enabled" or "disabled."
Netflow Data Export (hardware) is enabled	NetFlow Data Expert (NDE) hardware flow status on the interface.

The following example shows how to display a summary of the usability status information for each interface:

```
Device# show ip interface brief

Interface              IP-Address      OK? Method Status                Protocol
Vlan1                  unassigned      YES NVRAM  administratively down down
GigabitEthernet0/0     unassigned      YES NVRAM  down                  down
GigabitEthernet1/0/1   unassigned      YES NVRAM  down                  down
GigabitEthernet1/0/2   unassigned      YES unset  down                  down
GigabitEthernet1/0/3   unassigned      YES unset  down                  down
GigabitEthernet1/0/4   unassigned      YES unset  down                  down
GigabitEthernet1/0/5   unassigned      YES unset  down                  down
GigabitEthernet1/0/6   unassigned      YES unset  down                  down
GigabitEthernet1/0/7   unassigned      YES unset  down                  down

<output truncated>
```

Table 4: show ip interface brief Field Descriptions

Field	Description
Interface	Type of interface.
IP-Address	IP address assigned to the interface.
OK?	"Yes" means that the IP Address is valid. "No" means that the IP Address is not valid.

Field	Description
Method	The Method field has the following possible values: • RARP or SLARP: Reverse Address Resolution Protocol (RARP) or Serial Line Address Resolution Protocol (SLARP) request. • BOOTP: Bootstrap protocol. • TFTP: Configuration file obtained from the TFTP server. • manual: Manually changed by the command-line interface. • NVRAM: Configuration file in NVRAM. • IPCP: **ip address negotiated** command. • DHCP: **ip address dhcp** command. • unset: Unset. • other: Unknown.
Status	Shows the status of the interface. Valid values and their meanings are: • up: Interface is up. • down: Interface is down. • administratively down: Interface is administratively down.
Protocol	Shows the operational status of the routing protocol on this interface.

Related Commands

Command	Description
ip interface	Configures a virtual gateway IP interface on a Secure Socket Layer Virtual Private Network (SSL VPN) gateway
show interface status	Displays the status of the interface.

show interfaces

To display the administrative and operational status of all interfaces or for a specified interface, use the **show interfaces** command in the EXEC mode.

show interfaces [{ *interface-id* | **vlan** *vlan-id* }] [{ **accounting** | **capabilities** [**module** *number*] | **description** | **etherchannel** | **flowcontrol** | **link** [**module** *number*] | **pruning** | **stats** | **status** [{ **err-disabled** }] | **trunk** | [{ **platform** }] }]

Syntax Description

interface-id	(Optional) ID of the interface. Valid interfaces include physical ports (including type, stack member for stacking-capable switches, module, and port number) and port channels. The port channel range is 1 to 252.
vlan *vlan-id*	(Optional) VLAN identification. The range is 1 to 4094.
accounting	(Optional) Displays accounting information on the interface, including active protocols and input and output packets and octets. **Note** The display shows only packets processed in software; hardware-switched packets do not appear.
capabilities	(Optional) Displays the capabilities of all interfaces or the specified interface, including the features and options that you can configure on the interface. Though visible in the command line help, this option is not available for VLAN IDs.
module *number*	(Optional) Displays capabilities of all interfaces on the switch or specified stack member. This option is not available if you entered a specific interface ID.
description	(Optional) Displays the administrative status and description set for interfaces.
etherchannel	(Optional) Displays interface EtherChannel information.
flowcontrol	(Optional) Displays interface flow control information.
link [**module***number*]	(Optional) Displays the up time and down time of the interface.
pruning	(Optional) Displays trunk VTP pruning information for the interface.
stats	(Optional) Displays the input and output packets by switching the path for the interface.
status	(Optional) Displays the status of the interface. A status of unsupported in the Type field means that a non-Cisco small form-factor pluggable (SFP) module is inserted in the module slot.
err-disabled	(Optional) Displays interfaces in an error-disabled state.

trunk	(Optional) Displays interface trunk information. If you do not specify an interface, only information for active trunking ports appears.
platform	(Optional) Displays interface status, controller status, and platform information.

Note Though visible in the command-line help strings, the **crb**, **fair-queue**, **irb**, **mac-accounting**, **precedence**, **random-detect**, **rate-limit**, and **shape** keywords are not supported.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.
Cisco IOS XE Gibraltar 16.12.1	The **link** keyword was introduced.
Cisco IOS XE Amsterdam 17.2.1	The **platform** keyword was introduced.

Usage Guidelines

The **show interfaces capabilities** command with different keywords has these results:

- Use the **show interface capabilities module** *number* command to display the capabilities of all interfaces on that switch in the stack. If there is no switch with that module number in the stack, there is no output.
- Use the **show interfaces** *interface-id* **capabilities** to display the capabilities of the specified interface.
- Use the **show interfaces capabilities** (with no module number or interface ID) to display the capabilities of all interfaces in the stack.

Note The field **Last Input** displayed in the command output indicates the number of hours, minutes, and seconds since the last packet was successfully received by an interface and processed by the CPU on the device. This information can be used to know when a dead interface failed.

Last Input is not updated by fast-switched traffic.

The field **output** displayed in the command output indicates the number of hours, minutes, and seconds since the last packet was successfully transmitted by the interface. The information provided by this field can useful for knowing when a dead interface failed.

The **show interfaces link** command with different keywords has these results:

- Use the **show interface link module** *number* command to display the up time and down time of all interfaces on that switch in the stack. If there is no switch with that module number in the stack, there is no output.

Note On a standalone switch, the **module** *number* refers to the slot number.

- Use the **show interfaces** *interface-id* **link** to display the up time and down time of the specified interface.
- Use the **show interfaces link** (with no module number or interface ID) to display the up time and down time of all interfaces in the stack.
- If the interface is up, the up time displays the time (hours, minutes, and seconds) and the down time displays 00:00:00.
- If the interface is down, only the down time displays the time (hours, minutes, and seconds).

Examples

This is an example of output from the **show interfaces** *interface* **description** command when the interface has been described as *Connects to Marketing* by using the **description** interface configuration command:

```
Device# show interfaces gigabitethernet1/0/2 description

Interface                      Status         Protocol Description
Gi1/0/2                        up             down     Connects to Marketing
```

This is an example of output from the **show interfaces** *interface-id* **pruning** command when pruning is enabled in the VTP domain:

```
Device# show interfaces gigabitethernet1/0/2 pruning

Port      Vlans pruned for lack of request by neighbor
Gi1/0/2   3,4

Port      Vlans traffic requested of neighbor
Gi1/0/2   1-3
```

This is an example of output from the **show interfaces stats** command for a specified VLAN interface:

```
Device# show interfaces vlan 1 stats

Switching path    Pkts In    Chars In    Pkts Out    Chars Out
     Processor    1165354   136205310      570800     91731594
   Route cache          0           0           0            0
         Total    1165354   136205310      570800     91731594
```

This is an example of output from the **show interfaces status err-disabled** command. It displays the status of interfaces in the error-disabled state:

```
Device# show interfaces status err-disabled

Port      Name       Status         Reason
Gi1/0/2              err-disabled   gbic-invalid
Gi2/0/3              err-disabled   dtp-flap
```

This is an example of output from the **show interfaces** *interface-id* **pruning** command:

```
Device# show interfaces gigabitethernet1/0/2 pruning
```

```
Port Vlans pruned for lack of request by neighbor


Device# show interfaces gigabitethernet1/0/1 trunk

Port        Mode             Encapsulation  Status        Native vlan
Gi1/0/1     on               802.1q         other         10

Port        Vlans allowed on trunk
Gi1/0/1     none

Port        Vlans allowed and active in management domain
Gi1/0/1     none

Port        Vlans in spanning tree forwarding state and not pruned
Gi1/0/1     none
```

This is a sample output of the **show interfaces** *interface-id* **capabilities** command on a Cisco Catalyst 9400 Series Switch:

```
Device# show interface fi2/0/1 capabilities
 FiveGigabitEthernet2/0/1
  Model:                 C9400-LC-48HN
  Type:                  100/1000/2.5G/5GBaseTX
  Speed:                 100,1000,2500,5000,auto
  Duplex:                full,auto
  Trunk encap. type:     802.1Q
  Trunk mode:            on,off,desirable,nonegotiate
  Channel:               yes
  Broadcast suppression: percentage(0-100)
  Unicast suppression:   percentage(0-100)
  Multicast suppression: percentage(0-100)
  Flowcontrol:           rx-(off,on,desired),tx-(none)
  Fast Start:            yes
  QoS scheduling:        rx-(not configurable on per port basis),
                         tx-(2p6q3t)
  CoS rewrite:           yes
  ToS rewrite:           yes
  UDLD:                  yes
  Inline power:          yes
  SPAN:                  source/destination
  PortSecure:            yes
  Dot1x:                 yes
  Diagnostic Monitoring: N/A
  Breakout Support:      not applicable
```

This is a sample output of the **show interfaces statusmodule** command on a Cisco Catalyst 9400 Series Switch:

```
Device# show interface status module 2
 Port         Name               Status       Vlan       Duplex  Speed Type
Fi2/0/1                       connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/2                       connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/3                       connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/4                       connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/5                       connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/6                       connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/7                       connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/8                       connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/9                       connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/10                      connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/11                      connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
```

```
Fi2/0/12                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/13                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/14                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/15                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/16                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/17                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/18                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/19                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/20                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/21                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/22                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/23                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/24                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/25                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/26                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/27                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/28                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/29                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/30                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/31                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/32                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/33                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/34                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/35                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/36                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/37                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/38                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/39                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/40                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/41                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/42                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/43                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/44                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/45                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/46                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/47                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
Fi2/0/48                    connected    1          a-full a-5000 100/1000/2.5G/5GBaseTX
```

The following is a sample output of the **show interfaces link** command:

```
Device> enable
Device# show interfaces link
Port           Name               Down Time      Up Time
Gi1/0/1                           6w0d
Gi1/0/2                           6w0d
Gi1/0/3                           00:00:00       5w3d
Gi1/0/4                           6w0d
Gi1/0/5                           6w0d
Gi1/0/6                           6w0d
Gi1/0/7                           6w0d
Gi1/0/8                           6w0d
Gi1/0/9                           6w0d
Gi1/0/10                          6w0d
Gi1/0/11                          2d17h
Gi1/0/12                          6w0d
Gi1/0/13                          6w0d
Gi1/0/14                          6w0d
Gi1/0/15                          6w0d
Gi1/0/16                          6w0d
Gi1/0/17                          6w0d
Gi1/0/18                          6w0d
Gi1/0/19                          6w0d
```

```
Gi1/0/20                        6w0d
Gi1/0/21                        6w0d
```

show interfaces counters

To display various counters for the switch or for a specific interface, use the **show interfaces counters** command in privileged EXEC mode.

show interfaces [*interface-id*] **counters** [{**errors** | **etherchannel** | **module** *member-number* | **protocol status** | **trunk**}]

Syntax Description

interface-id	(Optional) ID of the physical interface, including type, stack member (stacking-capable switches only) module, and port number.
errors	(Optional) Displays error counters.
etherchannel	(Optional) Displays EtherChannel counters, including octets, broadcast packets, multicast packets, and unicast packets received and sent.
module *member-number*	(Optional) Displays counters for the specified member.
protocol status	(Optional) Displays the status of protocols enabled on interfaces.
trunk	(Optional) Displays trunk counters.

Note Though visible in the command-line help string, the **vlan** *vlan-id* keyword is not supported.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

If you do not enter any keywords, all counters for all interfaces are included.

This is an example of partial output from the **show interfaces counters** command. It displays all counters for the switch.

```
Device# show interfaces counters
Port            InOctets    InUcastPkts    InMcastPkts    InBcastPkts
Gi1/0/1                0              0              0              0
Gi1/0/2                0              0              0              0
Gi1/0/3         95285341          43115        1178430           1950
Gi1/0/4                0              0              0              0

<output truncated>
```

This is an example of partial output from the **show interfaces counters module** command for module 2. It displays all counters for the specified switch in the module.

```
Device# show interfaces counters module 2
Port            InOctets    InUcastPkts    InMcastPkts    InBcastPkts
Gi1/0/1              520              2              0              0
Gi1/0/2              520              2              0              0
Gi1/0/3              520              2              0              0
Gi1/0/4              520              2              0              0

<output truncated>
```

This is an example of partial output from the **show interfaces counters protocol status** command for all interfaces:

```
Device# show interfaces counters protocol status
Protocols allocated:
Vlan1: Other, IP
Vlan20: Other, IP, ARP
Vlan30: Other, IP, ARP
Vlan40: Other, IP, ARP
Vlan50: Other, IP, ARP
Vlan60: Other, IP, ARP
Vlan70: Other, IP, ARP
Vlan80: Other, IP, ARP
Vlan90: Other, IP, ARP
Vlan900: Other, IP, ARP
Vlan3000: Other, IP
Vlan3500: Other, IP
GigabitEthernet1/0/1: Other, IP, ARP, CDP
GigabitEthernet1/0/2: Other, IP
GigabitEthernet1/0/3: Other, IP
GigabitEthernet1/0/4: Other, IP
GigabitEthernet1/0/5: Other, IP
GigabitEthernet1/0/6: Other, IP
GigabitEthernet1/0/7: Other, IP
GigabitEthernet1/0/8: Other, IP
GigabitEthernet1/0/9: Other, IP
GigabitEthernet1/0/10: Other, IP, CDP

<output truncated>
```

This is an example of output from the **show interfaces counters trunk** command. It displays trunk counters for all interfaces.

```
Device# show interfaces counters trunk
Port        TrunkFramesTx   TrunkFramesRx   WrongEncap
Gi1/0/1                 0               0            0
Gi1/0/2                 0               0            0
Gi1/0/3             80678               0            0
Gi1/0/4             82320               0            0
Gi1/0/5                 0               0            0

<output truncated>
```

show interfaces downshift

To display downshift status details of the specified interfaces and modules, use the **show interfaces downshift** command in privileged EXEC mode.

show interfaces *interface-id* **downshift** [**module** *module-number*]

Syntax Description

interface-id	(Optional) ID of the physical interface, including type and port number.
module *module-number*	(Optional) Displays the downshift status details of the specified slot number.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Amsterdam 17.2.1	This command was introduced.

Usage Guidelines

The **show interfaces downshift** command with different keywords has these results:

Note This command is currently supported only on standalone devices.

- Use the **show interface downsift module** *number* command to display the downshift status details on the specified slot on the switch
- Use the **show interfaces** *interface-id* **downshift** to display the downshift status details of the specified interface.
- Use the **show interfaces downshift** (with no module number or interface ID) to display the downshift status details of all interfaces on the switch.

Examples

The following is a sample output from the **show interfaces** *interface-id* **downshift** command.

```
Device# show interfaces Te2/7/0/25 downshift
Port         Enabled         Active         AdminSpeed        OperSpeed
Te2/7/0/25     yes             yes            auto              2500
```

The following is a sample output from the **show interfaces downshift** command.

```
Device# show interfaces downshift
Port         Enabled         Active         AdminSpeed        OperSpeed
Te1/0/25       yes             no             auto              auto
Te1/0/26       yes             no             auto              auto
Te1/0/27       yes             no             auto              auto
Te1/0/28       yes             no             auto              auto
Te1/0/29       yes             no             auto              10G
Te1/0/30       yes             no             auto              auto
Te1/0/31       yes             no             auto              10G
Te1/0/32       yes             no             auto              10G
```

```
Te1/0/33        yes             no              auto            auto
Te1/0/34        yes             no              auto            auto
Te1/0/35        yes             no              auto            auto
Te1/0/36        yes             no              auto            10G
Te1/0/37        yes             no              auto            auto
Te1/0/38        yes             no              auto            auto
Te1/0/39        yes             no              auto            auto
Te1/0/40        yes             no              auto            auto
Te1/0/41        yes             no              auto            auto
Te1/0/42        yes             no              auto            auto
Te1/0/43        yes             no              auto            auto
Te1/0/44        yes             no              auto            auto
Te1/0/45        yes             no              auto            auto
Te1/0/46        yes             no              auto            auto
Te1/0/47        yes             no              auto            auto
Te1/0/48        yes             no              auto            auto
Te4/0/25        yes             no              auto            auto
Te4/0/26        yes             no              auto            auto
Te4/0/27        yes             no              auto            auto
Te4/0/28        yes             no              auto            auto
Te4/0/29        yes             no              auto            auto
Te4/0/30        yes             no              auto            auto
Te4/0/31        yes             no              auto            auto
Te4/0/32        yes             no              auto            auto
Te4/0/33        yes             no              auto            auto
Te4/0/34        yes             no              auto            auto
Te4/0/35        yes             no              auto            auto
Te4/0/36        yes             no              auto            auto
Te4/0/37        yes             no              auto            auto
Te4/0/38        yes             no              auto            auto
Te4/0/39        yes             no              auto            auto
Te4/0/40        yes             no              auto            auto
Te4/0/41        yes             no              auto            auto
Te4/0/42        yes             no              auto            auto
Te4/0/43        yes             no              auto            auto
Te4/0/44        yes             no              auto            auto
Te4/0/45        yes             no              auto            auto
Te4/0/46        yes             no              auto            auto
Te4/0/47        yes             no              auto            auto
Te4/0/48        yes             no              auto            auto
```

The following is a sample output from the **show interfaces downshift module** command.

```
Device# show interfaces downshift module 6
Port          Enabled         Active          AdminSpeed        OperSpeed
Fi6/0/1         yes             no              auto              5000M
Fi6/0/2         yes             no              auto              5000M
Fi6/0/3         yes             no              auto              5000M
Fi6/0/4         yes             no              auto              5000M
Fi6/0/5         yes             no              auto              5000M
Fi6/0/6         yes             no              auto              5000M
Fi6/0/7         yes             no              auto              5000M
Fi6/0/8         yes             no              auto              5000M
Fi6/0/9         yes             no              auto              5000M
Fi6/0/10        yes             no              auto              5000M
Fi6/0/11        yes             no              auto              5000M
Fi6/0/12        yes             no              auto              5000M
Fi6/0/13        yes             no              auto              5000M
Fi6/0/14        yes             no              auto              5000M
Fi6/0/15        yes             no              auto              5000M
Fi6/0/16        yes             no              auto              5000M
Fi6/0/17        yes             no              auto              5000M
Fi6/0/18        yes             no              auto              5000M
Fi6/0/19        yes             no              auto              5000M
Fi6/0/20        yes             no              auto              5000M
```

Fi6/0/21	yes	no	auto	5000M
Fi6/0/22	yes	no	auto	5000M
Fi6/0/23	yes	no	auto	5000M
Fi6/0/24	yes	no	auto	5000M
Fi6/0/25	yes	no	auto	5000M
Fi6/0/26	yes	no	auto	5000M
Fi6/0/27	yes	no	auto	5000M
Fi6/0/28	yes	no	auto	5000M
Fi6/0/29	yes	no	auto	5000M
Fi6/0/30	yes	no	auto	5000M
Fi6/0/31	yes	no	auto	5000M
Fi6/0/32	yes	no	auto	5000M
Fi6/0/33	yes	no	auto	5000M
Fi6/0/34	yes	no	auto	5000M
Fi6/0/35	yes	no	auto	5000M
Fi6/0/36	yes	no	auto	5000M
Fi6/0/37	yes	no	auto	5000M
Fi6/0/38	yes	no	auto	5000M
Fi6/0/39	yes	no	auto	5000M
Fi6/0/40	yes	no	auto	5000M
Fi6/0/41	yes	no	auto	5000M
Fi6/0/42	yes	no	auto	5000M
Fi6/0/43	yes	no	auto	5000M
Fi6/0/44	yes	no	auto	5000M
Fi6/0/45	yes	no	auto	5000M
Fi6/0/46	yes	no	auto	5000M
Fi6/0/47	yes	no	auto	5000M
Fi6/0/48	yes	no	auto	5000M

show interfaces switchport

To display the administrative and operational status of a switching (nonrouting) port, including port blocking and port protection settings, use the **show interfaces switchport** command in privileged EXEC mode.

show interfaces [*interface-id*] **switchport** [{**module** *number*}]

Syntax Description

interface-id	(Optional) ID of the interface. Valid interfaces include physical ports (including type, stack member for stacking-capable switches, module, and port number) and port channels. The port channel range is 1 to 48.
module *number*	(Optional) Displays switchport configuration of all interfaces on the switch or specified stack member. This option is not available if you entered a specific interface ID.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

Use the **show interface switchport module** *number* command to display the switch port characteristics of all interfaces on that switch in the stack. If there is no switch with that module number in the stack, there is no output.

This is an example of output from the **show interfaces switchport** command for a port. The table that follows describes the fields in the display.

```
Device# show interfaces gigabitethernet1/0/1 switchport
Name: Gi1/0/1
Switchport: Enabled
Administrative Mode: trunk
Operational Mode: down
Administrative Trunking Encapsulation: dot1q
Negotiation of Trunking: On
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 10 (VLAN0010)
Administrative Native VLAN tagging: enabled
Voice VLAN: none
Administrative private-vlan host-association: none
Administrative private-vlan mapping: none
Administrative private-vlan trunk native VLAN: none
Administrative private-vlan trunk Native VLAN tagging: enabled
Administrative private-vlan trunk encapsulation: dot1q
Administrative private-vlan trunk normal VLANs: none
Administrative private-vlan trunk associations: none
Administrative private-vlan trunk mappings: none
Operational private-vlan: none
Trunking VLANs Enabled: 11-20
Pruning VLANs Enabled: 2-1001
Capture Mode Disabled
```

```
Capture VLANs Allowed: ALL

Protected: false
Unknown unicast blocked: disabled
Unknown multicast blocked: disabled
Appliance trust: none
```

Field	Description
Name	Displays the port name.
Switchport	Displays the administrative and operational status of the port. In this display, the port is in switchport mode.
Administrative Mode Operational Mode	Displays the administrative and operational modes.
Administrative Trunking Encapsulation Operational Trunking Encapsulation Negotiation of Trunking	Displays the administrative and operational encapsulation method and whether trunking negotiation is enabled.
Access Mode VLAN	Displays the VLAN ID to which the port is configured.
Trunking Native Mode VLAN Trunking VLANs Enabled Trunking VLANs Active	Lists the VLAN ID of the trunk that is in native mode. Lists the allowed VLANs on the trunk. Lists the active VLANs on the trunk.
Pruning VLANs Enabled	Lists the VLANs that are pruning-eligible.
Protected	Displays whether or not protected port is enabled (True) or disabled (False) on the interface.
Unknown unicast blocked Unknown multicast blocked	Displays whether or not unknown multicast and unknown unicast traffic is blocked on the interface.
Voice VLAN	Displays the VLAN ID on which voice VLAN is enabled.
Appliance trust	Displays the class of service (CoS) setting of the data packets of the IP phone.

show interfaces transceiver

To display the physical properties of a small form-factor pluggable (SFP) module interface, use the **show interfaces transceiver** command in EXEC mode.

show interfaces [*interface-id*] **transceiver** [{**detail** | **module** *number* | **properties** | **supported-list** | **threshold-table**}]

Syntax Description

interface-id	(Optional) ID of the physical interface, including type, stack member (stacking-capable switches only) module, and port number.
detail	(Optional) Displays calibration properties, including high and low numbers and any alarm information for any Digital Optical Monitoring (DoM)-capable transceiver if one is installed in the switch.
module *number*	(Optional) Limits display to interfaces on module on the switch. This option is not available if you entered a specific interface ID.
properties	(Optional) Displays speed, duplex, and inline power settings on an interface.
supported-list	(Optional) Lists all supported transceivers.
threshold-table	(Optional) Displays alarm and warning threshold table.

Command Modes

User EXEC (>)

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Examples

This is an example of output from the **show interfaces** *interface-id* **transceiver properties** command:

```
Device# show interfaces transceiver

If device is externally calibrated, only calibrated values are printed.
++ : high alarm, +  : high warning, -  : low warning, -- : low alarm.
NA or N/A: not applicable, Tx: transmit, Rx: receive.
mA: milliamperes, dBm: decibels (milliwatts).

                                          Optical   Optical
           Temperature  Voltage  Current   Tx Power  Rx Power
Port       (Celsius)    (Volts)  (mA)      (dBm)     (dBm)
---------  -----------  -------  --------  --------  --------
Gi5/1/2      42.9       3.28      22.1      -5.4      -8.1
Te5/1/3      32.0       3.28      19.8       2.4      -4.2


Device# show interfaces gigabitethernet1/1/1 transceiver properties
  Name : Gi1/1/1
  Administrative Speed: auto
```

```
  Operational Speed: auto
  Administrative Duplex: auto
  Administrative Power Inline: enable
  Operational Duplex: auto
  Administrative Auto-MDIX: off
  Operational Auto-MDIX: off
```

This is an example of output from the **show interfaces** *interface-id* **transceiver detail** command:

```
Device# show interfaces gigabitethernet1/1/1 transceiver detail
  ITU Channel not available (Wavelength not available),
  Transceiver is internally calibrated.
  mA:milliamperes, dBm:decibels (milliwatts), N/A:not applicable.
  ++:high alarm, +:high warning, -:low warning, -- :low alarm.
  A2D readouts (if they differ), are reported in parentheses.
  The threshold values are uncalibrated.

                           High Alarm  High Warn  Low Warn   Low Alarm
           Temperature     Threshold   Threshold  Threshold  Threshold
  Port     (Celsius)      (Celsius)   (Celsius)  (Celsius)  (Celsius)
  -------  -------------  ----------  ---------  ---------  ---------
  Gi1/1/1  29.9           74.0        70.0       0.0        -4.0
                           High Alarm  High Warn  Low Warn   Low Alarm
           Voltage         Threshold   Threshold  Threshold  Threshold
  Port     (Volts)         (Volts)     (Volts)    (Volts)    (Volts)
  -------  ------------    ----------  ---------  ---------  ---------
  Gi1/1/1  3.28            3.60        3.50       3.10       3.00

           Optical         High Alarm  High Warn  Low Warn   Low Alarm
           Transmit Power  Threshold   Threshold  Threshold  Threshold
  Port     (dBm)           (dBm)       (dBm)      (dBm)      (dBm)
  -------  --------------  ----------  ---------  ---------  ---------
  Gi1/1/1  1.8             7.9         3.9        0.0        -4.0

           Optical         High Alarm  High Warn  Low Warn   Low Alarm
           Receive Power   Threshold   Threshold  Threshold  Threshold
  Port     (dBm)           (dBm)       (dBm)      (dBm)      (dBm)
  -------  --------------  ----------  ---------  ---------  ---------
  Gi1/1/1  -23.5           -5.0        -9.0       -28.2      -32.2

Device# show interfaces transceiver supported-list
Transceiver Type          Cisco p/n min version
                              supporting DOM
------------------       -------------------------

   DWDM GBIC               ALL
   DWDM SFP                ALL
   RX only WDM GBIC        ALL
   DWDM XENPAK             ALL
   DWDM X2                 ALL
   DWDM XFP                ALL
   CWDM GBIC               NONE
   CWDM X2                 ALL
   CWDM XFP                ALL
   XENPAK ZR               ALL
   X2 ZR                   ALL
   XFP ZR                  ALL
   Rx_only_WDM_XENPAK      ALL
   XENPAK_ER               10-1888-04
   X2_ER                   ALL
   XFP_ER                  ALL
   XENPAK_LR               10-1838-04
```

```
  X2_LR                    ALL
  XFP_LR                   ALL
  XENPAK_LW                ALL
  X2_LW                    ALL
  XFP_LW                   NONE
  XENPAK SR                NONE
  X2 SR                    ALL
  XFP SR                   ALL
  XENPAK LX4               NONE
  X2 LX4                   NONE
  XFP LX4                  NONE
  XENPAK CX4               NONE
  X2 CX4                   NONE
  XFP CX4                  NONE
  SX GBIC                  NONE
  LX GBIC                  NONE
  ZX GBIC                  NONE
  CWDM_SFP                 ALL
  Rx_only_WDM_SFP          NONE
  SX_SFP                   ALL
  LX_SFP                   ALL
  ZX_SFP                   ALL
  EX_SFP                   ALL
  SX SFP                   NONE
  LX SFP                   NONE
  ZX SFP                   NONE
  GIgE BX U SFP            NONE
  GigE BX D SFP            ALL
  X2 LRM                   ALL
  SR_SFPP                  ALL
  LR_SFPP                  ALL
  LRM_SFPP                 ALL
  ER_SFPP                  ALL
  ZR_SFPP                  ALL
  DWDM_SFPP                ALL
  GIgE BX 40U SFP          ALL
  GigE BX 40D SFP          ALL
  GigE BX 40DA SFP         ALL
  GIgE BX 80U SFP          ALL
  GigE BX 80D SFP          ALL
  GIG BXU_SFPP             ALL
  GIG BXD_SFPP             ALL
  GIG BX40U_SFPP           ALL
  GIG BX40D_SFPP           ALL
  GigE Dual Rate LX SFP    ALL
  CWDM_SFPP                ALL
  CPAK_SR10                ALL
  CPAK_LR4                 ALL
  QSFP_LR                  ALL
  QSFP_SR                  ALL
```

This is an example of output from the **show interfaces transceiver threshold-table** command:

```
Device# show interfaces transceiver threshold-table
             Optical Tx     Optical Rx    Temp     Laser Bias    Voltage
                                                   current
            -------------  -------------  ------   ------------  ---------

 DWDM GBIC
Min1             -4.00        -32.00        -4           N/A          4.65
Min2              0.00        -28.00        0            N/A          4.75
Max2              4.00         -9.00        70           N/A          5.25
Max1              7.00         -5.00        74           N/A          5.40
 DWDM SFP
```

```
Min1             -4.00        -32.00        -4            N/A           3.00
Min2              0.00        -28.00        0             N/A           3.10
Max2              4.00         -9.00        70            N/A           3.50
Max1              8.00         -5.00        74            N/A           3.60
 RX only WDM GBIC
Min1              N/A          -32.00        -4            N/A           4.65
Min2              N/A          -28.30        0             N/A           4.75
Max2              N/A           -9.00        70            N/A           5.25
Max1              N/A           -5.00        74            N/A           5.40
 DWDM XENPAK
Min1             -5.00        -28.00        -4            N/A           N/A
Min2             -1.00        -24.00        0             N/A           N/A
Max2              3.00         -7.00        70            N/A           N/A
Max1              7.00         -3.00        74            N/A           N/A
 DWDM X2
Min1             -5.00        -28.00        -4            N/A           N/A
Min2             -1.00        -24.00        0             N/A           N/A
Max2              3.00         -7.00        70            N/A           N/A
Max1              7.00         -3.00        74            N/A           N/A
 DWDM XFP
Min1             -5.00        -28.00        -4            N/A           N/A
Min2             -1.00        -24.00        0             N/A           N/A
Max2              3.00         -7.00        70            N/A           N/A
Max1              7.00         -3.00        74            N/A           N/A
 CWDM X2
Min1              N/A           N/A          0             N/A           N/A
Min2              N/A           N/A          0             N/A           N/A
Max2              N/A           N/A          0             N/A           N/A
Max1              N/A           N/A          0             N/A           N/A

<output truncated>
```

Related Commands

Command	Description
transceiver type all	Enters the transceiver type configuration mode.
monitoring	Enables digital optical monitoring.

show inventory

To display the product inventory listing of all Cisco products installed in the networking device, use the **show inventory** command in user EXEC or privileged EXEC mode.

show inventory {**fru** | **oid** | **raw**} [**entity**]

fru	(Optional) Retrieves information about all Field Replaceable Units (FRUs) installed in the Cisco networking device.
oid	(Optional) Retrieves information about the vendor specific hardware registration identifier referred to as object identifier (OID). The OID identifies the MIB object's location in the MIB hierarchy, and provides a means of accessing the MIB object in a network of managed devices
raw	(Optional) Retrieves information about all Cisco products referred to as entities installed in the Cisco networking device, even if the entities do not have a product ID (PID) value, a unique device identifier (UDI), or other physical identification.
entity	(Optional) Name of a Cisco entity (for example, chassis, backplane, module, or slot). A quoted string may be used to display very specific UDI information; for example "sfslot 1" will display the UDI information for slot 1 of an entity named sfslot.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

The **show inventory** command retrieves and displays inventory information about each Cisco product in the form of a UDI. The UDI is a combination of three separate data elements: a product identifier (PID), a version identifier (VID), and the serial number (SN).

The PID is the name by which the product can be ordered; it has been historically called the "Product Name" or "Part Number." This is the identifier that one would use to order an exact replacement part.

The VID is the version of the product. Whenever a product has been revised, the VID will be incremented. The VID is incremented according to a rigorous process derived from Telcordia GR-209-CORE, an industry guideline that governs product change notices.

The SN is the vendor-unique serialization of the product. Each manufactured product will carry a unique serial number assigned at the factory, which cannot be changed in the field. This is the means by which to identify an individual, specific instance of a product.

The UDI refers to each product as an entity. Some entities, such as a chassis, will have subentities like slots. Each entity will display on a separate line in a logically ordered presentation that is arranged hierarchically by Cisco entities.

Use the **show inventory** command without options to display a list of Cisco entities installed in the networking device that are assigned a PID.

The following is sample output from the **`show inventory`** command:

```
Device# show inventory
NAME: "Chassis", DESCR: "Cisco Catalyst 9400 Series 7 Slot Chassis"
PID: C9407R            , VID: V01  , SN: FXS2128Q13X

NAME: "Slot 2 - Linecard", DESCR: "Cisco Catalyst 9400 Series 48-Port UPOE 10/100/1000
(RJ-45)"
PID: C9400-LC-48U      , VID: V01  , SN: JAE213102KS

NAME: "Slot 5 - Linecard", DESCR: "Cisco Catalyst 9400 Series 48-Port UPOE 10/100/1000
(RJ-45)"
PID: C9400-LC-48U      , VID: V01  , SN: JAE2132070M

NAME: "Slot 3 - Supervisor", DESCR: "Cisco Catalyst 9400 Series Supervisor 1 Module"
PID: C9400-SUP-1       , VID:      , SN:

NAME: "TenGigabitEthernet3/0/1", DESCR: "10GE CU5M"
PID: N/A                , VID: T    , SN: TED2116C4SV

NAME: "Slot 4 - Supervisor", DESCR: "Cisco Catalyst 9400 Series Supervisor 1 Module"
PID: C9400-SUP-1       , VID: V01  , SN: JAE221703LD

NAME: "TenGigabitEthernet4/0/1", DESCR: "10GE CU5M"
PID: N/A                , VID: T    , SN: TED2116C4EG

NAME: "Power Supply Module 1", DESCR: "Cisco Catalyst 9400 Series 3200W AC Power Supply"
PID: C9400-PWR-3200AC  , VID: V01  , SN: DTM212200X2

NAME: "Fan Tray", DESCR: "Cisco Catalyst 9400 Series 7 Slot Chassis Fan Tray"
PID: C9407-FAN         , VID: V01  , SN: FXS212206DG
```

Table 5: show inventory Field Descriptions

Field	Description
NAME	Physical name (text string) assigned to the Cisco entity. For example, console or a simple component number (port or module number), such as “1,” depending on the physical component naming syntax of the device.
DESCR	Physical description of the Cisco entity that characterizes the object. The physical description includes the hardware serial number and the hardware revision.
PID	Entity product identifier. Equivalent to the entPhysicalModelName MIB variable in RFC 2737.
VID	Entity version identifier. Equivalent to the entPhysicalHardwareRev MIB variable in RFC 2737.
SN	Entity serial number. Equivalent to the entPhysicalSerialNum MIB variable in RFC 2737.

For diagnostic purposes, the **show inventory**command can be used with the **raw** keyword to display every RFC 2737 entity including those without a PID, UDI, or other physical identification.

Note The **raw** keyword option is primarily intended for troubleshooting problems with the **show inventory** command itself.

Enter the **show inventory** command with an *entity* argument value to display the UDI information for a specific type of Cisco entity installed in the networking device. In this example, a list of Cisco

entities that match the sfslot argument string is displayed. You can request even more specific UDI information with the *entity* argument value enclosed in quotation marks.

```
9407R#show inv "Slot 2 Linecard"
NAME: "Slot 2 Linecard", DESCR: "Cisco Catalyst 9400 Series 48-Port UPOE 10/100/1000 (RJ-45)"
PID: C9400-LC-48U      , VID: V01  , SN: JAE213102KS
```

show logg onboard slot

To display the status of a line card use the **show logg onboard slot** *slot-num* **state** command in the global configuration mode.

show logg onboard slot *slot-num* **state**

Syntax Description

slot-num	Specifies the line card.
state	Displays the status of the line card.

Command Default

This command has no default settings.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Fuji 16.8.1a	This command was introduced.

Usage Guidelines

Use this command to monitor the state of a line card. The status is AMBER during the boot-up of the line card; RED when the linecard is disabled or has a problem; GREEN when the linecard is up and running.

show memory platform

To display memory statistics of a platform, use the **show memory platform** command in privileged EXEC mode.

show memory platform [{**compressed-swap** | **information** | **page-merging**}]

Syntax Description

compressed-swap	(Optional) Displays platform memory compressed-swap information.
information	(Optional) Displays general information about the platform.
page-merging	(Optional) Displays platform memory page-merging information.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

Free memory is accurately computed and displayed in the Free Memory field of the command output.

Examples

The following is sample output from the **show memory platform** command:

```
Switch# show memory platform

 Virtual memory   : 12874653696
  Pages resident   : 627041
  Major page faults: 2220
  Minor page faults: 2348631

  Architecture     : mips64
  Memory (kB)
    Physical       : 3976852
    Total          : 3976852
    Used           : 2761276
    Free           : 1215576
    Active         : 2128196
    Inactive       : 1581856
    Inact-dirty    : 0
    Inact-clean    : 0
    Dirty          : 0
    AnonPages      : 1294984
    Bounce         : 0
    Cached         : 1978168
    Commit Limit   : 1988424
    Committed As   : 3343324
    High Total     : 0
    High Free      : 0
    Low Total      : 3976852
    Low Free       : 1215576
    Mapped         : 516316
    NFS Unstable   : 0
    Page Tables    : 17124
    Slab           : 0
```

```
    VMmalloc Chunk : 1069542588
    VMmalloc Total : 1069547512
    VMmalloc Used  : 2588
    Writeback      : 0
    HugePages Total: 0
    HugePages Free : 0
    HugePages Rsvd : 0
    HugePage Size  : 2048

  Swap (kB)
    Total          : 0
    Used           : 0
    Free           : 0
    Cached         : 0

  Buffers (kB)     : 437136

  Load Average
    1-Min          : 1.04
    5-Min          : 1.16
    15-Min         : 0.94
```

The following is sample output from the **show memory platform information** command:

```
Device# show memory platform information

 Virtual memory   : 12870438912
  Pages resident   : 626833
  Major page faults: 2222
  Minor page faults: 2362455

  Architecture     : mips64
  Memory (kB)
    Physical       : 3976852
    Total          : 3976852
    Used           : 2761224
    Free           : 1215628
    Active         : 2128060
    Inactive       : 1584444
    Inact-dirty    : 0
    Inact-clean    : 0
    Dirty          : 284
    AnonPages      : 1294656
    Bounce         : 0
    Cached         : 1979644
    Commit Limit   : 1988424
    Committed As   : 3342184
    High Total     : 0
    High Free      : 0
    Low Total      : 3976852
    Low Free       : 1215628
    Mapped         : 516212
    NFS Unstable   : 0
    Page Tables    : 17096
    Slab           : 0
    VMmalloc Chunk : 1069542588
    VMmalloc Total : 1069547512
    VMmalloc Used  : 2588
    Writeback      : 0
    HugePages Total: 0
    HugePages Free : 0
    HugePages Rsvd : 0
    HugePage Size  : 2048
```

```
Swap (kB)
  Total           : 0
  Used            : 0
  Free            : 0
  Cached          : 0

Buffers (kB)      : 438228

Load Average
  1-Min           : 1.54
  5-Min           : 1.27
  15-Min          : 0.99
```

show module

To display module information such as switch number, model number, serial number, hardware revision number, software version, MAC address and so on, use this command in user EXEC or privileged EXEC mode.

```
show module [{switch-num}]
```

Syntax Description

switch-num	(Optional) Number of the switch.

Command Default

None

Command Modes

User EXEC (>)

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

Entering the **show module** command without the *switch-num* argument is the same as entering the show module all command.

The following example displays information for all modules on a Cisco Catalyst 9400 Series Switch:

```
Device# show module
Chassis Type: C9410R

Mod Ports Card Type                                  Model          Serial No.
---+-----+--------------------------------------+--------------+--------------
1   48   48-Port UPOE w/ 24p mGig 24p RJ-45          C9400-LC-48UX    JAE2229053D
2   48   48-Port 5Gig/mGig 90W BT (RJ-45)            C9400-LC-48HN    JAE24530BF3
3   48   48-Port UPOE w/ 24p mGig 24p RJ-45          C9400-LC-48UX    JAE2128068Z
4   48   48-Port 5Gig/mGig 90W BT (RJ-45)            C9400-LC-48HN    JAE24241WAY
5   11   Supervisor 1 Module                         C9400-SUP-1      JAE22280PL8
6   11   Supervisor 1 Module                         C9400-SUP-1      JAE22280PHT
7   48   48-Port UPOE w/ 24p mGig 24p RJ-45          C9400-LC-48UX    JAE2229055N
8   48   48-Port UPOE w/ 24p mGig 24p RJ-45          C9400-LC-48UX    JAE22280DBU
9   48   48-Port UPOE w/ 24p mGig 24p RJ-45          C9400-LC-48UX    JAE22080BWS
10  48   48-Port UPOE w/ 24p mGig 24p RJ-45          C9400-LC-48UX    JAE230707YP

Mod MAC addresses                     Hw   Fw           Sw                 Status
---+--------------------------------+----+------------+------------------+--------
1   BC26.C7A4.E738 to BC26.C7A4.E767 1.0  17.5.1r       17.05.01           ok
2   ECCE.13E2.B670 to ECCE.13E2.B69F 1.0  17.5.1r       17.05.01           ok
3   E4AA.5D59.A868 to E4AA.5D59.A897 1.0  17.5.1r       17.05.01           ok
4   A0B4.3982.43C0 to A0B4.3982.43EF 1.0  17.5.1r       17.05.01           ok
5   2C5A.0F1C.1EEC to 2C5A.0F1C.1EF6 2.0  17.5.1r       17.05.01           ok
6   2C5A.0F1C.1EF6 to 2C5A.0F1C.1F00 2.0  17.5.1r       17.05.01           ok
7   BC26.C7A4.D820 to BC26.C7A4.D84F 1.0  17.5.1r       17.05.01           ok
8   BC26.C772.E91C to BC26.C772.E94B 1.0  17.5.1r       17.05.01           ok
9   707D.B9C8.B5F8 to 707D.B9C8.B627 2.1  17.5.1r       17.05.01           ok
10  70EA.1ADB.7E74 to 70EA.1ADB.7EA3 3.0  17.5.1r       17.05.01           ok

Mod Redundancy Role     Operating Mode  Configured Mode  Redundancy Status
---+------------------+---------------+---------------+------------------
```

```
5   Active              sso             sso             Active
6   Standby             sso             sso             Standby Hot

Chassis MAC address range: 44 addresses from 2c5a.0f1c.1ec0 to 2c5a.0f1c.1eeb
```

show mgmt-infra trace messages ilpower

To display inline power messages within a trace buffer, use the **show mgmt-infra trace messages ilpower** command in privileged EXEC mode.

show mgmt-infra trace messages ilpower [**switch** *stack-member-number*]

Syntax Description

switch *stack-member-number*	(Optional) Specifies the stack member number for which to display inline power messages within a trace buffer.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

This is an output example from the **show mgmt-infra trace messages ilpower** command:

```
Device# show mgmt-infra trace messages ilpower
[10/23/12 14:05:10.984 UTC 1 3] Initialized inline power system configuration fo
r slot 1.
[10/23/12 14:05:10.984 UTC 2 3] Initialized inline power system configuration fo
r slot 2.
[10/23/12 14:05:10.984 UTC 3 3] Initialized inline power system configuration fo
r slot 3.
[10/23/12 14:05:10.984 UTC 4 3] Initialized inline power system configuration fo
r slot 4.
[10/23/12 14:05:10.984 UTC 5 3] Initialized inline power system configuration fo
r slot 5.
[10/23/12 14:05:10.984 UTC 6 3] Initialized inline power system configuration fo
r slot 6.
[10/23/12 14:05:10.984 UTC 7 3] Initialized inline power system configuration fo
r slot 7.
[10/23/12 14:05:10.984 UTC 8 3] Initialized inline power system configuration fo
r slot 8.
[10/23/12 14:05:10.984 UTC 9 3] Initialized inline power system configuration fo
r slot 9.
[10/23/12 14:05:10.984 UTC a 3] Inline power subsystem initialized.
[10/23/12 14:05:18.908 UTC b 264] Create new power pool for slot 1
[10/23/12 14:05:18.909 UTC c 264] Set total inline power to 450 for slot 1
[10/23/12 14:05:20.273 UTC d 3] PoE is not supported on .
[10/23/12 14:05:20.288 UTC e 3] PoE is not supported on .
[10/23/12 14:05:20.299 UTC f 3] PoE is not supported on .
[10/23/12 14:05:20.311 UTC 10 3] PoE is not supported on .
[10/23/12 14:05:20.373 UTC 11 98] Inline power process post for switch 1
[10/23/12 14:05:20.373 UTC 12 98] PoE post passed on switch 1
[10/23/12 14:05:20.379 UTC 13 3] Slot #1: PoE initialization for board id 16387
[10/23/12 14:05:20.379 UTC 14 3] Set total inline power to 450 for slot 1
[10/23/12 14:05:20.379 UTC 15 3] Gi1/0/1 port config Initialized
[10/23/12 14:05:20.379 UTC 16 3] Interface Gi1/0/1 initialization done.
[10/23/12 14:05:20.380 UTC 17 3] Gi1/0/24 port config Initialized
[10/23/12 14:05:20.380 UTC 18 3] Interface Gi1/0/24 initialization done.
[10/23/12 14:05:20.380 UTC 19 3] Slot #1: initialization done.
```

```
[10/23/12 14:05:50.440 UTC 1a 3] Slot #1: PoE initialization for board id 16387
[10/23/12 14:05:50.440 UTC 1b 3] Duplicate init event
```

show mgmt-infra trace messages ilpower-ha

To display inline power high availability messages within a trace buffer, use the **show mgmt-infra trace messages ilpower-ha** command in privileged EXEC mode.

show mgmt-infra trace messages ilpower-ha [**switch** *stack-member-number*]

Syntax Description

switch *stack-member-number*	(Optional) Specifies the stack member number for which to display inline power messages within a trace buffer.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

This is an output example from the **show mgmt-infra trace messages ilpower-ha** command:

```
Device# show mgmt-infra trace messages ilpower-ha
[10/23/12 14:04:48.087 UTC 1 3] NG3K_ILPOWER_HA: Created NGWC ILP CF client succ
essfully.
```

show mgmt-infra trace messages platform-mgr-poe

To display platform manager Power over Ethernet (PoE) messages within a trace buffer, use the **show mgmt-infra trace messages platform-mgr-poe** privileged EXEC command.

show mgmt-infra trace messages platform-mgr-poe [**switch** *stack-member-number*]

Syntax Description

switch *stack-member-number*	(Optional) Specifies the stack member number for which to display messages within a trace buffer.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

This is an example of partial output from the **show mgmt-infra trace messages platform-mgr-poe** command:

```
Device# show mgmt-infra trace messages platform-mgr-poe
[10/23/12 14:04:06.431 UTC 1 5495] PoE Info: get power controller param sent:
[10/23/12 14:04:06.431 UTC 2 5495] PoE Info: POE_SHUT sent for port 1 (0:0)
[10/23/12 14:04:06.431 UTC 3 5495] PoE Info: POE_SHUT sent for port 2 (0:1)
[10/23/12 14:04:06.431 UTC 4 5495] PoE Info: POE_SHUT sent for port 3 (0:2)
[10/23/12 14:04:06.431 UTC 5 5495] PoE Info: POE_SHUT sent for port 4 (0:3)
[10/23/12 14:04:06.431 UTC 6 5495] PoE Info: POE_SHUT sent for port 5 (0:4)
[10/23/12 14:04:06.431 UTC 7 5495] PoE Info: POE_SHUT sent for port 6 (0:5)
[10/23/12 14:04:06.431 UTC 8 5495] PoE Info: POE_SHUT sent for port 7 (0:6)
[10/23/12 14:04:06.431 UTC 9 5495] PoE Info: POE_SHUT sent for port 8 (0:7)
[10/23/12 14:04:06.431 UTC a 5495] PoE Info: POE_SHUT sent for port 9 (0:8)
[10/23/12 14:04:06.431 UTC b 5495] PoE Info: POE_SHUT sent for port 10 (0:9)
[10/23/12 14:04:06.431 UTC c 5495] PoE Info: POE_SHUT sent for port 11 (0:10)
[10/23/12 14:04:06.431 UTC d 5495] PoE Info: POE_SHUT sent for port 12 (0:11)
[10/23/12 14:04:06.431 UTC e 5495] PoE Info: POE_SHUT sent for port 13 (e:0)
[10/23/12 14:04:06.431 UTC f 5495] PoE Info: POE_SHUT sent for port 14 (e:1)
[10/23/12 14:04:06.431 UTC 10 5495] PoE Info: POE_SHUT sent for port 15 (e:2)
[10/23/12 14:04:06.431 UTC 11 5495] PoE Info: POE_SHUT sent for port 16 (e:3)
[10/23/12 14:04:06.431 UTC 12 5495] PoE Info: POE_SHUT sent for port 17 (e:4)
[10/23/12 14:04:06.431 UTC 13 5495] PoE Info: POE_SHUT sent for port 18 (e:5)
[10/23/12 14:04:06.431 UTC 14 5495] PoE Info: POE_SHUT sent for port 19 (e:6)
[10/23/12 14:04:06.431 UTC 15 5495] PoE Info: POE_SHUT sent for port 20 (e:7)
[10/23/12 14:04:06.431 UTC 16 5495] PoE Info: POE_SHUT sent for port 21 (e:8)
[10/23/12 14:04:06.431 UTC 17 5495] PoE Info: POE_SHUT sent for port 22 (e:9)
[10/23/12 14:04:06.431 UTC 18 5495] PoE Info: POE_SHUT sent for port 23 (e:10)
```

show network-policy profile

To display the network-policy profiles, use the **show network policy profile** command in privileged EXEC mode.

show network-policy profile [*profile-number*] [**detail**]

Syntax Description

profile-number	(Optional) Displays the network-policy profile number. If no profile is entered, all network-policy profiles appear.
detail	(Optional) Displays detailed status and statistics information.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

This is an example of output from the **show network-policy profile** command:

```
Device# show network-policy profile
Network Policy Profile 10
   voice vlan 17 cos 4
  Interface:
   none
Network Policy Profile 30
   voice vlan 30 cos 5
  Interface:
   none
Network Policy Profile 36
   voice vlan 4 cos 3
  Interface:
   Interface_id
```

show platform hardware bluetooth

To display information about Bluetooth interface, use the **show platform hardware bluetooth** command in privileged EXEC mode.

show platform hardware bluetooth

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Gibraltar 16.12.1	This command was introduced.

Usage Guidelines

The **show platform hardware bluetooth** command is to be used when an external USB Bluetooth dongle is connected on the device.

Examples

This example shows how to display the information of the Bluetooth interface using the **show platform hardware bluetooth** command.

```
Device> enable
Device# show platform hardware bluetooth
Controller: 0:1a:7d:da:71:13
Type: Primary
Bus: USB
State: DOWN
Name:
HCI Version:
```

show platform hardware fed active forward

To display device-specific hardware information, use the **show platform hardware fed active** command.

This topic elaborates only the forwarding-specific options, that is, the options available with the **show platform hardware fed** { **active** | **standby** } **forward** command.

The output of the **show platform hardware fed active forward** displays all the details about the forwarding decision taken for the packet.

show platform hardware fed {**active** | **standby**} **forward**

Syntax Description

{ | **active** | **standby** }	The switch for which you want to display information. You have the following options : • **active**—Displays information relating to the active switch. • **standby**—Displays information relating to the standby switch, if available.
forward	Displays packet forwarding information.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

Do not use this command unless a technical support representative asks you to. Use this command only when you are working directly with a technical support representative while troubleshooting a problem.

Fields displayed in the command output are explained below.

- Station Index : The Station Index is the result of the layer 2 lookup and points to a station descriptor which provides the following:
  - Destination Index : Determines the egress port(s) to which the packets should be sent to. Global Port Number(GPN) can be used as the destination index. A destination index with15 down to 12 bits set indicates the GPN to be used. For example, destination index - 0xF04E corresponds to GPN - 78 (0x4e).
  - Rewrite Index : Determines what needs to be done with the packets. For layer 2 switching, this is typically a bridging action
  - Flexible Lookup Pipeline Stages(FPS) : Indicates the forwarding decision that was taken for the packet - routing or bridging
  - Replication Bit Map : Determines if the packets should be sent to CPU or stack
    - Local Data Copy = 1
    - Remote Data copy = 0
    - Local CPU Copy = 0

- Remote CPU Copy = 0

show platform hardware fed forward interface

To debug forwarding information and to trace the packet path in the hardware forwarding plane, use the **show platform hardware fed forward interface** command. This command simulates a user-defined packet and retrieves the forwarding information from the hardware forwarding plane. A packet is generated on the ingress port based on the packet parameters that you have specified in this command. You can also provide a complete packet from the captured packets stored in a PCAP file.

This topic elaborates only the interface forwarding-specific options, that is, the options available with the **show platform hardware fed** { **active** | **standby** } **forward interface** command.

show platform hardware fed {**active** | **standby**} **forward interface** *interface-type interface-number* **source-mac-address***destination-mac-address* {*protocol-number* | **arp** | **cos** | **ipv4** | **ipv6** | **mpls**}

show platform hardware fed {**active** | **standby**} **forward interface** *interface-type interface-number* **pcap** *pcap-file-name* **number** *packet-number* **data**

show platform hardware fed {**active** | **standby**} **forward interface** *interface-type interface-number* **vlan** *vlan-id source-mac-address destination-mac-address*{*protocol-number* | **arp** | **cos** | **ipv4** | **ipv6** | **mpls**}

Syntax Description

{ **active** | **standby** }	The switch on which packet tracing has to be scheduled. The input port should be available on this switch. You have the following options : • **active**—indicates the active switch on which the the ingress port is present. • **standby**—indicates the standby switch on which the ingress port is present. **Note** This keyword is not supported.
interface *interface-type interface-number*	The input interface on which packet trace is simulated.
source-mac-address	The source MAC address of the packet you want to simulate.
destination-mac-address	The MAC address of the destination interface in hexadecimal format.
protocol-number	The number assigned to any L3 protocol.
arp	The Address Resolution Protocol (ARP) parameters.
ipv4	The IPv4 packet parameters.
ipv6	The IPv6 packet parameters.
mpls	The Multiprotocol Label Switching (MPLS) label parameters.
cos	The class of service (CoS) number from 0 to 7 to set priority.

pcap *pcap-file-name*	Name of the pcap file in internal flash (flash:). Ensure that the file already exists in flash:.
number *packet-number*	Specifies the packet number in the pcap file.
vlan *vlan-id*	VLAN id of the dot1q header in the simulated packet. The range is 1 to 4096.

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.
Cisco IOS XE Fuji 16.9.1	The command was enhanced to support MPLS/ARP/VxLAN packet parameters and trace packets captured in a PCAP file.
Cisco IOS XE Gibraltar 16.10.1	The command was enhanced to support data capture across a stack.

Usage Guidelines

Do not use this command unless a technical support representative asks you to. Use this command only when you are working directly with a technical support representative while troubleshooting a problem.

This command supports the following packet types:

- Non-IP packets with any L3 protocol
- ARP packets
- IPv4 packets with any L4 protocol
- IPv4 packets with TCP/UDP/IGMP/ICMP/SCTP payload
- VxLAN packets
- MPLS packets with up to 3 Labels and meta data
- MPLS packets with IPv4/IPv6 payload
- IPv6 packets with TCP/UDP/IGMP/ICMP/SCTP payload

In a stack environment, you can trace packets across the stack irrespective of the number of stack members and topology. The **show platform hardware fed forward interface** *interface-type interface-number* command consolidates packet-forwarding information of all the stack members on the ingress switch. To achieve this, ensure that the *interface-number* argument is of the input switch.

To trace any particular packet from the captured packets stored in a PCAP file, use the **show platform hardware fed forward interface** *interface-type interface-number* **pcap** *pcap-file-name number packet-number* **data** command.

Example

This is an example of output from the **show platform hardware fed** {**active** | **standby**} **forward interface** command.

```
Device#show platform hardware fed active forward interface gigabitEthernet 1/0/35
0000.0022.0055 0000.0055.0066 ipv4 44.44.0.2 55.55.0.2 udp 1222 3333

Show forward is running in the background. After completion, syslog will be generated.

*Sep 24 05:57:36.614: %SHFWD-6-PACKET_TRACE_DONE: Switch 1 R0/0: fed: Packet Trace Complete:
  Execute (show platform hardware fed <> forward last summary|detail)
*Sep 24 05:57:36.614: %SHFWD-6-PACKET_TRACE_FLOW_ID: Switch 1 R0/0: fed: Packet Trace Flow
 id is 150323855361
```

Related Commands

Command	Description
monitor capture interface	Configures monitor capture points specifying an attachment point and the packet flow direction.
monitor capture start	Starts the capture of packet data at a traffic trace point into a buffer.
monitor capture stop	Stops the capture of packet data at a traffic trace point.
monitor capture export	Saves the captured packets in the buffer. Use this command to export the monitor capture buffer to a pcap file in flash: that you can use as an input in the **show forward** with **pcap**.

show platform hardware fed forward last summary

To display a summary of packet tracing data from a switch or switches in a stack, use the **show platform hardware fed forward last summary** command.

The output of the **show platform hardware fed forward last summary** command displays all the details about the forwarding decision taken for the packet from the last time the **show forward** command was run.

show platform hardware fed {**active** | **standby**} **forward last summary**

Syntax Description

active | **standby**	The switch on which you want to schedule a packet capture for a port. You have the following options : • **active**—indicates the active switch on which the the ingress port is present. • **standby**—indicates the standby switch on which the ingress port is present. **Note** This keyword is not supported.
forward last summary	Displays packet forwarding information.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.
Cisco IOS XE Everest 16.6.1 and later releases	Support for the keyword **summary** was discontinued.
Cisco IOS XE Fuji 16.9.1	Support for keywords **last** and **summary** is introduced.
Cisco IOS XE Gibraltar 16.10.1	The output of the command was enhanced to display the details about all the copies of the packets and the corresponding outgoing ports.

Usage Guidelines

Do not use this command unless a technical support representative asks you to. Use this command only when you are working directly with a technical support representative while troubleshooting a problem.

With Cisco IOS XE Gibraltar 16.10.1, **show platform hardware fed forward last summary** command is enhanced to:

- Inject the debug packets from the CPU to simulate the incoming port and packets
- Use the debug packets to trace the packet in hardware data-path to provide forwarding details such as lookup, adjacency, rewrite information, drop decision, outgoing port and so on
- Drop the original packets at egress so as not to transmit the packet to the outgoing port

- Send a copy of all the packets to the CPU and display the details in the packet tracing output

Example

This is an example of output from the **show platform hardware fed** {**active** | **standby** } **forward last summary** command.

```
Device#show platform hardware fed active forward last summary
Input Packet Details:
###[ Ethernet ]###
  dst       = 01:00:5e:01:01:02
  src       = 00:00:00:03:00:05
  type      = 0x0
###[ Raw ]###
     load      = '00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
     00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
     00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
     00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00'
Ingress:
   Port                      : GigabitEthernet1/0/11
   Global Port Number        : 11
   Local Port Number         : 11
   Asic Port Number          : 10
   Asic Instance             : 1
   Vlan                      : 20
   Mapped Vlan ID            : 6
   STP Instance              : 4
   BlockForward              : 0
   BlockLearn                : 0
   L3 Interface              : 39
       IPv4 Routing          : enabled
       IPv6 Routing          : enabled
       Vrf Id                : 0
   Adjacency:
       Station Index         : 3      [SI_DIET_L2]
       Destination Index     : 18
       Rewrite Index         : 2
       Replication Bit Map   : 0x15   ['localData', 'remoteData', 'coreData']
   Decision:
       Destination Index     : 24     [DI_DIET_L2]
       Rewrite Index         : 2      [RI_L2]
       Dest Mod Index        : 9      [DMI_IGMP_CTRL_Q]
       CPU Map Index         : 0      [CMI_NULL]
       Forwarding Mode       : 0      [Bridging]
       Replication Bit Map   :        ['localData', 'remoteData', 'coreData']
       Winner                :        L2DESTMACVLAN LOOKUP
       Qos Label             : 65
       SGT                   : 0
       DGTID                 : 0
Egress:
   Possible Replication      :
       Port                  : GigabitEthernet1/0/11
       Port                  : GigabitEthernet1/0/22
       Port                  : GigabitEthernet2/0/1
   Output Port Data          :
     Port                    : GigabitEthernet1/0/22
       Global Port Number    : 22
       Local Port Number     : 22
       Asic Port Number      : 21
       Asic Instance         : 0
       Unique RI             : 2
       Rewrite Type          : 1      [L2_BRIDGE]
```

```
       Mapped Rewrite Type   : 1      [L2_BRIDGE]
       Vlan                  : 20
       Mapped Vlan ID        : 6
     Port                    : GigabitEthernet2/0/1
       Global Port Number    : 97
       Local Port Number     : 1
       Asic Port Number      : 0
       Asic Instance         : 1
       Unique RI             : 2
       Rewrite Type          : 1      [L2_BRIDGE]
       Mapped Rewrite Type   : 1      [L2_BRIDGE]
       Vlan                  : 20
       Mapped Vlan ID        : 6

Output Packet Details:
   Port                      : GigabitEthernet1/0/22
###[ Ethernet ]###
  dst       = 01:00:5e:01:01:02
  src       = 00:00:00:03:00:05
  type      = 0x0
###[ Raw ]###
     load      = '00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
     00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
     00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
     00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00'
   Port                      : GigabitEthernet2/0/1
###[ Ethernet ]###
  dst       = 01:00:5e:01:01:02
  src       = 00:00:00:03:00:05
  type      = 0x0
###[ Raw ]###
     load      = '00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
     00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
     00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
     00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00'
********************************************************************************
```

show platform hardware fed switch fwd-asic counters tla

To display the register information of a counter from the forwarding ASIC, use the **show platform hardware fed switch fwd-asic counters tla** command in the Privileged EXEC mode.

show platform hardware fed switch {*switch_num* | **active** | **standby**} **fwd-asic counters tla** *tla_counter*{**detail** | **drop** | **statistics**} [**asic** *asic_num*] **output** *location:filename*

Syntax Description

switch {*switch_num* | **active** | **standby** }	The switch for which you want to display information. You have the following options : • *switch_num*: ID of the switch. • **active**: Displays information relating to the active switch. • **standby**: Displays information relating to the standby switch, if available.

tla*tla_counter*	*tla_counter* can be any of the following Three Letter Acronym (TLA) counters: • AQM Active Queue Management • ASE ACL Search Engine • DPP DopplerE Point to Point • EGR Egress Global Resolution • EPF Egress Port FIFO • ESM Egress Scheduler Module • EQC Egress Queue Controller • FPE Flexible Parser • FPS Flexible Pipe Stage • FSE Fib Search Engine • IGR Ingress Global Resolution • IPF Ingress Port FIFO • IQS Ingress Queues and Scheduler • MSC Macsec Engine • NFL Netflow • NIF Network Interface • PBC Packet Buffer Complex • PIM Protocol Independent Multicast • PLC Policer • RMU Recirculation Multiplexer Unit • RRE Reassembly Engine • RWE Rewrite Engine • SEC Security Engine • SIF Stack Interface • SPQ Supervisor Packet Queuing Engine • SQS Stack Queues And Scheduler • SUP Supervisor Interface
detail	Displays the contents of the registers of all non-zero counters.
drop	Displays the contents of the registers of all non-zero drop counters.
statistics	Displays the contents of the registers of all non-zero statistical counters.

asci *asic_num*	(Optional) Specifies the ASIC.
output *location:filename*	Specifies an output file to which the contents of the counters registers are to be dumped.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.
Cisco IOS XE Amsterdam 17.3.1	The command output was modified to be presented in a readable tabular format. The size of the output file was also reduced by not printing fields that had zero values. The **change** keyword was deprecated.

Usage Guidelines

Do not use this command unless a technical support representative asks you to. Use this command only when you are working directly with a technical support representative while troubleshooting a problem.

Note Some TLAs may not have any registers to display as part of **drop** or **statistics** options because of the lack of these drop or statistics registers for them. In such a case, a message, `No <detail|drop|statistics> counters to display for tla <TLA_NAME>` is displayed and no output file is generated.

Example

This is an example output from the **show platform hardware fed active fwd-asic counters tla aqm** command.

```
Device#show platform hardware fed active fwd-asic counters tla aqm detail output flash:aqm
command to get counters for tla AQM succeeded
Device#
Device# more flash:aqm
================================================================================================

 asic | core | Register Name             | Fields                              | value
================================================================================================

  0     0      AqmRepTransitUsageCnt[0][0]
                                          totalCntHighMark                    : 0x4
                                          transitWait4DoneHighMark            : 0x2
  0     1      AqmRepTransitUsageCnt[0][0]
                                          totalCntHighMark                    : 0x2
                                          transitWait4DoneHighMark            : 0x2
================================================================================================

 asic | core | Register Name             | Fields                              | value
================================================================================================

  0     0      AqmGlobalHardBufCnt[0][0]
```

```
                                             highWaterMark                          : 0x3
==============================================================================================

 asic | core | Register Name             | Fields                                 | value
==============================================================================================

  0      0      AqmRedQueueStats[0][673]
                                             acceptByteCnt2                         : 0x4e44e
                                             acceptFrameCnt2                        : 0x5e1
  0      0      AqmRedQueueStats[0][674]
                                             acceptByteCnt1                         : 0x88
                                             acceptByteCnt2                         : 0xa7c
                                             acceptFrameCnt1                        : 0x2
                                             acceptFrameCnt2                        : 0x16
  0      0      AqmRedQueueStats[0][676]
                                             acceptByteCnt2                         : 0xfbf06
                                             acceptFrameCnt2                        : 0x2440
  0      0      AqmRedQueueStats[0][677]
                                             acceptByteCnt2                         : 0xcc
                                             acceptFrameCnt2                        : 0x3
  0      0      AqmRedQueueStats[0][687]
                                             acceptByteCnt2                         : 0x2caea0
                                             acceptFrameCnt2                        : 0xa836
  0      0      AqmRedQueueStats[0][691]
                                             acceptByteCnt2                         : 0x2dc
                                             acceptFrameCnt2                        : 0x6
  0      0      AqmRedQueueStats[0][692]
                                             acceptByteCnt2                         : 0xc518
                                             acceptFrameCnt2                        : 0x2e6
```

show platform hardware iomd lc-portmap brief

To display the line card port map information of the platform, use the **show platform hardware iomd lc-portmap brief** command in privileged EXEC mode.

show platform hardware iomd *slot/card* **lc-portmap brief**

Syntax Description

slot	Slot number. The range is from 0 to 10.
card	Card number. The range is from 0 to 0.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Examples

The following is sample output from the **show platform hardware iomd lc-portmap brief** command:

```
Device# show platform hardware iomd 1/0 lc-portmap brief

id  1 asic 0 port  0 intl_port_sup0  8 intl_port_sup1  0 max_speed DEV_PORT_SPEED_10G
id  2 asic 0 port  1 intl_port_sup0  8 intl_port_sup1  0 max_speed DEV_PORT_SPEED_10G
id  3 asic 0 port  2 intl_port_sup0  8 intl_port_sup1  0 max_speed DEV_PORT_SPEED_10G
id  4 asic 0 port  3 intl_port_sup0 10 intl_port_sup1  2 max_speed DEV_PORT_SPEED_10G
id  5 asic 0 port  4 intl_port_sup0 10 intl_port_sup1  2 max_speed DEV_PORT_SPEED_10G
id  6 asic 0 port  5 intl_port_sup0 10 intl_port_sup1  2 max_speed DEV_PORT_SPEED_10G
id  7 asic 1 port  6 intl_port_sup0  9 intl_port_sup1  1 max_speed DEV_PORT_SPEED_10G
id  8 asic 1 port  7 intl_port_sup0  9 intl_port_sup1  1 max_speed DEV_PORT_SPEED_10G
id  9 asic 1 port  8 intl_port_sup0  9 intl_port_sup1  1 max_speed DEV_PORT_SPEED_10G
id 10 asic 1 port  9 intl_port_sup0 10 intl_port_sup1  2 max_speed DEV_PORT_SPEED_10G
id 11 asic 1 port 10 intl_port_sup0 10 intl_port_sup1  2 max_speed DEV_PORT_SPEED_10G
id 12 asic 1 port 11 intl_port_sup0 10 intl_port_sup1  2 max_speed DEV_PORT_SPEED_10G
id 13 asic 2 port 12 intl_port_sup0  8 intl_port_sup1  0 max_speed DEV_PORT_SPEED_10G
id 14 asic 2 port 13 intl_port_sup0  8 intl_port_sup1  0 max_speed DEV_PORT_SPEED_10G
id 15 asic 2 port 14 intl_port_sup0  8 intl_port_sup1  0 max_speed DEV_PORT_SPEED_10G
id 16 asic 2 port 15 intl_port_sup0 10 intl_port_sup1  2 max_speed DEV_PORT_SPEED_10G
id 17 asic 2 port 16 intl_port_sup0 10 intl_port_sup1  2 max_speed DEV_PORT_SPEED_10G
id 18 asic 2 port 17 intl_port_sup0 10 intl_port_sup1  2 max_speed DEV_PORT_SPEED_10G
id 19 asic 3 port 18 intl_port_sup0  8 intl_port_sup1  0 max_speed DEV_PORT_SPEED_10G
id 20 asic 3 port 19 intl_port_sup0  8 intl_port_sup1  0 max_speed DEV_PORT_SPEED_10G
id 21 asic 3 port 20 intl_port_sup0  8 intl_port_sup1  0 max_speed DEV_PORT_SPEED_10G
id 22 asic 3 port 21 intl_port_sup0 10 intl_port_sup1  2 max_speed DEV_PORT_SPEED_10G
id 23 asic 3 port 22 intl_port_sup0 10 intl_port_sup1  2 max_speed DEV_PORT_SPEED_10G
id 24 asic 3 port 23 intl_port_sup0 10 intl_port_sup1  2 max_speed DEV_PORT_SPEED_10G
```

show platform hardware iomd portgroups

To display the port grouping information of the platform, use the **show platform hardware iomd portgroups** command in privileged EXEC mode.

show platform hardware iomd *slot/card* **portgroups**

Syntax Description

slot	Slot number. The range is from 0 to 10.
card	Card number. The range is from 0 to 0.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Examples

The following is sample output from the **show platform hardware iomd portgroups** command:

```
Device# show platform hardware iomd 1/0 portgroups

Port  Interface                       Status    Interface  Group Max
Group                                           Bandwith   Bandwidth

1     TenGigabitEthernet1/0/1         up         10G
1     TenGigabitEthernet1/0/2         up         10G
1     TenGigabitEthernet1/0/3         down       10G       10G

2     TenGigabitEthernet1/0/4         up         10G
2     TenGigabitEthernet1/0/5         down       10G
2     TenGigabitEthernet1/0/6         down       10G       10G

3     TenGigabitEthernet1/0/7         up         10G
3     TenGigabitEthernet1/0/8         down       10G
3     TenGigabitEthernet1/0/9         down       10G       10G

4     TenGigabitEthernet1/0/10        up         10G
4     TenGigabitEthernet1/0/11        down       10G
4     TenGigabitEthernet1/0/12        down       10G       10G

5     TenGigabitEthernet1/0/13        up         10G
5     TenGigabitEthernet1/0/14        down       10G
5     TenGigabitEthernet1/0/15        down       10G       10G

6     TenGigabitEthernet1/0/16        down       10G
6     TenGigabitEthernet1/0/17        up         10G
6     TenGigabitEthernet1/0/18        down       10G       10G

7     TenGigabitEthernet1/0/19        down       10G
7     TenGigabitEthernet1/0/20        down       10G
7     TenGigabitEthernet1/0/21        down       10G       10G

8     TenGigabitEthernet1/0/22        down       10G
8     TenGigabitEthernet1/0/23        down       10G
```

```
8      TenGigabitEthernet1/0/24        down       10G       10G
```

show platform hardware fed active fwd-asic resource tcam utilization

To display hardware information about the Ternary Content Addressable Memory (TCAM) usage, use the **show platform hardware fed active fwd-asic resource tcam utilization** command in privileged EXEC mode.

show platform hardware fed active fwd-asic resource tcam utilization[{*asic-number* }]

Syntax Description

asic-number	ASIC number. Valid values are from 0 to 7.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Amsterdam 17.2.1	This command was introduced in a release prior to Cisco IOS XE Amsterdam 17.2.1 .

Usage Guidelines

On stackable switches, this command has the **switch** keyword, **show platform hardware fed switch active fwd-asic resource tcam utilization**. On non-stackable switches, the **switch** keyword is not available.

Example

The following is sample output from the **show platform hardware fed active fwd-asic resource tcam utilization** command:

```
Device# show platform hardware fed active fwd-asic resource tcam utilization

Codes: EM - Exact_Match, I - Input, O - Output, IO - Input & Output, NA - Not Applicable

CAM Utilization for ASIC  [0]
 Table                  Subtype      Dir      Max     Used    %Used       V4       V6
MPLS    Other

----------------------------------------------------------------------------------------------------

 OPENFLOW Table0        TCAM         I        5000        5       0%        3        0
    0        2
 OPENFLOW Table0 Ext.   EM           I        8192        3       0%        0        0
    0        3
 OPENFLOW Table1        TCAM         I        3600        1       0%        1        0
    0        0
 OPENFLOW Table1 Ext.   EM           I        8192        1       0%        0        0
    0        1
 OPENFLOW Table2        TCAM         I        3500        1       0%        1        0
    0        0
 OPENFLOW Table2 Ext.   EM           I        8192        1       0%        0        0
    0        1
 OPENFLOW Table3 Ext.   EM           I        8192        0       0%        0        0
    0        0
 OPENFLOW Table4 Ext.   EM           I        8192        0       0%        0        0
    0        0
```

```
OPENFLOW Table5 Ext.    EM           I         8192        0        0%         0         0
   0        0
OPENFLOW Table6 Ext.    EM           I         8192        0        0%         0         0
   0        0
OPENFLOW Table7 Ext.    EM           I         8192        0        0%         0         0
   0        0
```

The table below lists the significant fields shown in the display.

Table 6: show platform hardware fed active fwd-asic resource tcam utilization Field Descriptions

Field	Description
Table	OpenFlow table numbers.
Subtype	What are the different subtypes available?
Dir	
Max	
Used	
%Used	
V4	
V6	
MPLS	
Other	

show platform resources

To display platform resource information, use the **show platform reources** command in privileged EXEC mode.

show platform resources

This command has no arguments or keywords.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

The output of this command displays the used memory, which is total memory minus the accurate free memory.

Example

The following is sample output from the **show platform resources** command:

```
Switch# show platform resources

**State Acronym: H - Healthy, W - Warning, C - Critical

Resource                Usage                Max            Warning         Critical
     State
------------------------------------------------------------------------------------------------

 Control Processor      7.20%                100%           90%             95%
     H
  DRAM                  2701MB(69%)          3883MB         90%             95%
     H
```

show platform software audit

To display the SE Linux Audit logs, use the **show platform software audit** command in privileged EXEC mode.

show platform software audit {**all** | **summary** | [**switch** {*switch-number* | **active** | **standby**}] {**0** | **F0** | **R0** | {**FP** | **RP**} {**active**}}}

Syntax Description

all	Shows the audit log from all the slots.
summary	Shows the audit log summary count from all the slots.
switch	Shows the audit logs for a slot on a specific switch.
switch-number	Selects the switch with the specified switch number.
switch active	Selects the active instance of the switch.
standby	Selects the standby instance of the switch.
0	Shows the audit log for the SPA-Inter-Processor slot 0.
F0	Shows the audit log for the Embedded-Service-Processor slot 0.
R0	Shows the audit log for the Route-Processor slot 0.
FP active	Shows the audit log for the active Embedded-Service-Processor slot.
RP active	Shows the audit log for the active Route-Processor slot.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Gibraltar 16.10.1	This command was introduced.

Usage Guidelines

This command was introduced in the Cisco IOS XE Gibraltar 16.10.1 as a part of the SELinux Permissive Mode feature. The **show platform software audit** command displays the system logs containing the access violation events.

In Cisco IOS XE Gibraltar 16.10.1, operation in a permissive mode is available - with the intent of confining specific components (process or application) of the IOS-XE platform. In the permissive mode, access violation events are detected and system logs are generated, but the event or operation itself is not blocked. The solution operates mainly in an access violation detection mode.

The following is a sample output of the **show software platform software audit summary** command:

```
Device# show platform software audit summary

==================================
AUDIT LOG ON switch 1
----------------------------------
AVC Denial count: 58
==================================
```

The following is a sample output of the **show software platform software audit all** command:

```
Device# show platform software audit all

==================================
AUDIT LOG ON switch 1
----------------------------------
========== START ============
type=AVC msg=audit(1539222292.584:100): avc:  denied  { read } for  pid=14017
comm="mcp_trace_filte" name="crashinfo" dev="rootfs" ino=13667
scontext=system_u:system_r:polaris_trace_filter_t:s0
tcontext=system_u:object_r:polaris_disk_crashinfo_t:s0 tclass=lnk_file permissive=1
type=AVC msg=audit(1539222292.584:100): avc:  denied  { getattr } for  pid=14017
comm="mcp_trace_filte" path="/mnt/sd1" dev="sda1" ino=2
scontext=system_u:system_r:polaris_trace_filter_t:s0
tcontext=system_u:object_r:polaris_disk_crashinfo_t:s0 tclass=dir permissive=1
type=AVC msg=audit(1539222292.586:101): avc:  denied  { getattr } for  pid=14028 comm="ls"
 path="/tmp/ufs/crashinfo" dev="tmpfs" ino=58407
scontext=system_u:system_r:polaris_trace_filter_t:s0
tcontext=system_u:object_r:polaris_ncd_tmp_t:s0 tclass=dir permissive=1
type=AVC msg=audit(1539222292.586:102): avc:  denied  { read } for  pid=14028 comm="ls"
name="crashinfo" dev="tmpfs" ino=58407 scontext=system_u:system_r:polaris_trace_filter_t:s0
 tcontext=system_u:object_r:polaris_ncd_tmp_t:s0 tclass=dir permissive=1
type=AVC msg=audit(1539438600.896:119): avc:  denied  { execute } for  pid=8300 comm="sh"
name="id" dev="loop0" ino=6982 scontext=system_u:system_r:polaris_auto_upgrade_server_rp_t:s0
 tcontext=system_u:object_r:bin_t:s0 tclass=file permissive=1
type=AVC msg=audit(1539438600.897:120): avc:  denied  { execute_no_trans } for  pid=8300
comm="sh"
path="/tmp/sw/mount/cat9k-rpbase.2018-10-02_00.13_mhungund.SSA.pkg/nyquist/usr/bin/id"
dev="loop0" ino=6982 scontext=system_u:system_r:polaris_auto_upgrade_server_rp_t:s0
tcontext=system_u:object_r:bin_t:s0 tclass=file permissive=1
type=AVC msg=audit(1539438615.535:121): avc:  denied  { name_connect } for  pid=26421
comm="nginx" dest=8098 scontext=system_u:system_r:polaris_nginx_t:s0
tcontext=system_u:object_r:polaris_caf_api_port_t:s0 tclass=tcp_socket permissive=1
type=AVC msg=audit(1539438624.916:122): avc:  denied  { execute_no_trans } for  pid=8600
comm="auto_upgrade_se" path="/bin/bash" dev="rootfs" ino=7276
scontext=system_u:system_r:polaris_auto_upgrade_server_rp_t:s0
tcontext=system_u:object_r:shell_exec_t:s0 tclass=file permissive=1
type=AVC msg=audit(1539438648.936:123): avc:  denied  { execute_no_trans } for  pid=9307
comm="auto_upgrade_se" path="/bin/bash" dev="rootfs" ino=7276
scontext=system_u:system_r:polaris_auto_upgrade_server_rp_t:s0
tcontext=system_u:object_r:shell_exec_t:s0 tclass=file permissive=1
type=AVC msg=audit(1539438678.649:124): avc:  denied  { name_connect } for  pid=26421
comm="nginx" dest=8098 scontext=system_u:system_r:polaris_nginx_t:s0
tcontext=system_u:object_r:polaris_caf_api_port_t:s0 tclass=tcp_socket permissive=1
type=AVC msg=audit(1539438696.969:125): avc:  denied  { execute_no_trans } for  pid=10057
comm="auto_upgrade_se" path="/bin/bash" dev="rootfs" ino=7276
scontext=system_u:system_r:polaris_auto_upgrade_server_rp_t:s0
tcontext=system_u:object_r:shell_exec_t:s0 tclass=file permissive=1
type=AVC msg=audit(1539438732.973:126): avc:  denied  { execute_no_trans } for  pid=10858
comm="auto_upgrade_se" path="/bin/bash" dev="rootfs" ino=7276
scontext=system_u:system_r:polaris_auto_upgrade_server_rp_t:s0
tcontext=system_u:object_r:shell_exec_t:s0 tclass=file permissive=1
type=AVC msg=audit(1539438778.008:127): avc:  denied  { execute_no_trans } for  pid=11579
comm="auto_upgrade_se" path="/bin/bash" dev="rootfs" ino=7276
scontext=system_u:system_r:polaris_auto_upgrade_server_rp_t:s0
tcontext=system_u:object_r:shell_exec_t:s0 tclass=file permissive=1
```

```
type=AVC msg=audit(1539438800.156:128): avc:  denied  { name_connect } for  pid=26421
comm="nginx" dest=8098 scontext=system_u:system_r:polaris_nginx_t:s0
tcontext=system_u:object_r:polaris_caf_api_port_t:s0 tclass=tcp_socket permissive=1
type=AVC msg=audit(1539438834.099:129): avc:  denied  { execute_no_trans } for  pid=12451
comm="auto_upgrade_se" path="/bin/bash" dev="rootfs" ino=7276
scontext=system_u:system_r:polaris_auto_upgrade_server_rp_t:s0
tcontext=system_u:object_r:shell_exec_t:s0 tclass=file permissive=1
type=AVC msg=audit(1539440246.697:149): avc:  denied  { name_connect } for  pid=26421
comm="nginx" dest=8098 scontext=system_u:system_r:polaris_nginx_t:s0
tcontext=system_u:object_r:polaris_caf_api_port_t:s0 tclass=tcp_socket permissive=1
type=AVC msg=audit(1539440299.119:150): avc:  denied  { name_connect } for  pid=26421
comm="nginx" dest=8098 scontext=system_u:system_r:polaris_nginx_t:s0
tcontext=system_u:object_r:polaris_caf_api_port_t:s0 tclass=tcp_socket permissive=1
========== END ============
===================================
```

The following is a sample output of the **show software platform software audit switch** command:

```
Device# show platform software audit switch active R0

========== START ============
type=AVC msg=audit(1539222292.584:100): avc:  denied  { read } for  pid=14017
comm="mcp_trace_filte" name="crashinfo" dev="rootfs" ino=13667
scontext=system_u:system_r:polaris_trace_filter_t:s0
tcontext=system_u:object_r:polaris_disk_crashinfo_t:s0 tclass=lnk_file permissive=1
type=AVC msg=audit(1539222292.584:100): avc:  denied  { getattr } for  pid=14017
comm="mcp_trace_filte" path="/mnt/sd1" dev="sda1" ino=2
scontext=system_u:system_r:polaris_trace_filter_t:s0
tcontext=system_u:object_r:polaris_disk_crashinfo_t:s0 tclass=dir permissive=1
type=AVC msg=audit(1539222292.586:101): avc:  denied  { getattr } for  pid=14028 comm="ls"
 path="/tmp/ufs/crashinfo" dev="tmpfs" ino=58407
scontext=system_u:system_r:polaris_trace_filter_t:s0
tcontext=system_u:object_r:polaris_ncd_tmp_t:s0 tclass=dir permissive=1
type=AVC msg=audit(1539222292.586:102): avc:  denied  { read } for  pid=14028 comm="ls"
name="crashinfo" dev="tmpfs" ino=58407 scontext=system_u:system_r:polaris_trace_filter_t:s0
 tcontext=system_u:object_r:polaris_ncd_tmp_t:s0 tclass=dir permissive=1
type=AVC msg=audit(1539438624.916:122): avc:  denied  { execute_no_trans } for  pid=8600
comm="auto_upgrade_se" path="/bin/bash" dev="rootfs" ino=7276
scontext=system_u:system_r:polaris_auto_upgrade_server_rp_t:s0
tcontext=system_u:object_r:shell_exec_t:s0 tclass=file permissive=1
type=AVC msg=audit(1539438648.936:123): avc:  denied  { execute_no_trans } for  pid=9307
comm="auto_upgrade_se" path="/bin/bash" dev="rootfs" ino=7276
scontext=system_u:system_r:polaris_auto_upgrade_server_rp_t:s0
tcontext=system_u:object_r:shell_exec_t:s0 tclass=file permissive=1
type=AVC msg=audit(1539438678.649:124): avc:  denied  { name_connect } for  pid=26421
comm="nginx" dest=8098 scontext=system_u:system_r:polaris_nginx_t:s0
tcontext=system_u:object_r:polaris_caf_api_port_t:s0 tclass=tcp_socket permissive=1
type=AVC msg=audit(1539438696.969:125): avc:  denied  { execute_no_trans } for  pid=10057
comm="auto_upgrade_se" path="/bin/bash" dev="rootfs" ino=7276
scontext=system_u:system_r:polaris_auto_upgrade_server_rp_t:s0
tcontext=system_u:object_r:shell_exec_t:s0 tclass=file permissive=1
type=AVC msg=audit(1539438732.973:126): avc:  denied  { execute_no_trans } for  pid=10858
comm="auto_upgrade_se" path="/bin/bash" dev="rootfs" ino=7276
scontext=system_u:system_r:polaris_auto_upgrade_server_rp_t:s0
tcontext=system_u:object_r:shell_exec_t:s0 tclass=file permissive=1
type=AVC msg=audit(1539438778.008:127): avc:  denied  { execute_no_trans } for  pid=11579
comm="auto_upgrade_se" path="/bin/bash" dev="rootfs" ino=7276
scontext=system_u:system_r:polaris_auto_upgrade_server_rp_t:s0
tcontext=system_u:object_r:shell_exec_t:s0 tclass=file permissive=1
type=AVC msg=audit(1539438800.156:128): avc:  denied  { name_connect } for  pid=26421
comm="nginx" dest=8098 scontext=system_u:system_r:polaris_nginx_t:s0
tcontext=system_u:object_r:polaris_caf_api_port_t:s0 tclass=tcp_socket permissive=1
type=AVC msg=audit(1539438834.099:129): avc:  denied  { execute_no_trans } for  pid=12451
comm="auto_upgrade_se" path="/bin/bash" dev="rootfs" ino=7276
scontext=system_u:system_r:polaris_auto_upgrade_server_rp_t:s0
```

```
tcontext=system_u:object_r:shell_exec_t:s0 tclass=file permissive=1
type=AVC msg=audit(1539438860.907:130): avc:  denied  { name_connect } for  pid=26421
comm="nginx" dest=8098 scontext=system_u:system_r:polaris_nginx_t:s0
tcontext=system_u:object_r:polaris_caf_api_port_t:s0 tclass=tcp_socket permissive=1
========== END ============
==================================
```

show platform software fed active punt cpuq rates

To display the rate at which packets are punted, including the drops in the punted path, use the **show platform software fed active punt cpuq rates** command in privileged EXEC mode.

show platform software fed {**active** | **standby** } **punt cpuq rates**

Syntax Description

active | **standby**	Displays information about the switch. You have the following options: • **active** —Displays information relating to the active switch. • **standby**—Displays information relating to the standby switch, if available. **Note** This keyword is not supported.
punt	Specifies the punt informtion.
cpuq	Specifies information about CPU receive queue.
rates	Specifies the rate at which the packets are punted.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Gibraltar 16.10.1	This command was introduced.

Usage Guidelines

The output of this command displays the rate in packets per second at intervals of 10 seconds, 1 minute and 5 minutes.

Example

The following is sample output from the **show platform software fed active punt cpuq rates** command.

```
Device#show platform software fed active punt cpuq rates

Punt Rate CPU Q Statistics


Packets per second averaged over 10 seconds, 1 min and 5 mins
================================================================================================
 Q  |         Queue             |  Rx    |  Rx    |  Rx    |  Drop  |  Drop   |  Drop
 no |         Name              |  10s   |  1min  |  5min  |  10s   |  1min   |  5min
================================================================================================
 0  CPU_Q_DOT1X_AUTH               0        0        0        0        0        0
 1  CPU_Q_L2_CONTROL                0        0        0        0        0        0
 2  CPU_Q_FORUS_TRAFFIC             336      266      320      0        0        0
 3  CPU_Q_ICMP_GEN                  0        0        0        0        0        0
 4  CPU_Q_ROUTING_CONTROL           0        0        0        0        0        0
```

```
 5  CPU_Q_FORUS_ADDR_RESOLUTION      0         0         0         0         0         0
 6  CPU_Q_ICMP_REDIRECT              0         0         0         0         0         0
 7  CPU_Q_INTER_FED_TRAFFIC          0         0         0         0         0         0
 8  CPU_Q_L2LVX_CONTROL_PKT          0         0         0         0         0         0
 9  CPU_Q_EWLC_CONTROL               0         0         0         0         0         0
10 CPU_Q_EWLC_DATA                  0         0         0         0         0         0
11 CPU_Q_L2LVX_DATA_PKT             0         0         0         0         0         0
12 CPU_Q_BROADCAST                  0         0         0         0         0         0
13 CPU_Q_LEARNING_CACHE_OVFL        0         0         0         0         0         0
14 CPU_Q_SW_FORWARDING              0         0         0         0         0         0
15 CPU_Q_TOPOLOGY_CONTROL           0         0         0         0         0         0
16 CPU_Q_PROTO_SNOOPING             0         0         0         0         0         0
17 CPU_Q_DHCP_SNOOPING              0         0         0         0         0         0
18 CPU_Q_TRANSIT_TRAFFIC            0         0         0         0         0         0
19 CPU_Q_RPF_FAILED                 0         0         0         0         0         0
20 CPU_Q_MCAST_END_STATION_SERVICE  0         0         0         0         0         0
21 CPU_Q_LOGGING                    0         0         0         0         0         0
22 CPU_Q_PUNT_WEBAUTH               0         0         0         0         0         0
23 CPU_Q_HIGH_RATE_APP              0         0         0         0         0         0
24 CPU_Q_EXCEPTION                  0         0         0         0         0         0
25 CPU_Q_SYSTEM_CRITICAL            0         0         0         0         0         0
26 CPU_Q_NFL_SAMPLED_DATA           0         0         0         0         0         0
27 CPU_Q_LOW_LATENCY                0         0         0         0         0         0
28 CPU_Q_EGR_EXCEPTION              0         0         0         0         0         0
29 CPU_Q_FSS                        0         0         0         0         0         0
30 CPU_Q_MCAST_DATA                 0         0         0         0         0         0
31 CPU_Q_GOLD_PKT                   0         0         0         0         0         0

------------------------------------------------------------------------------------------
```

The table below describes the significant fields shown in the display.

Table 7: show platform software fed active punt cpuq rates Field Descriptions

Field	Description
Queue Name	Name of the queue.
Rx	The per second rate at which the packets are received in 10s, 1 minute and 5 minutes.
Drop	The per second rate at which the packets are dropped in 10s, 1 minute and 5 minutes.

show platform software fed punt packet-capture display

To display packet capture information during high CPU utilization, use the **show platform software fed active punt packet-capture display** command in privileged EXEC mode.

show platform software fed active punt packet-capture display { **detailed** | **hexdump**}

Syntax Description

{**active** | **standby**}	Displays information about a switch. You have the following options: • **active** —Displays information relating to the active switch. • **standby**—Displays information relating to the standby switch, if available. **Note** The **standby** keyword is not supported.
punt	Specifies punt information.
packet-capture display	Specifies information about the captured packet.
detailed	Specifies detailed information about the captured packet.
hex-dump	Specifies information about the captured packet, in hex format.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Gibraltar 16.10.1	This command was introduced.

Usage Guidelines

The output of this command displays the periodic and persistent logs of CPU-bound packets, inband CPU traffic rates, and running CPU processes when the CPU passes a high CPU utilization threshold.

Examples

The following is a sample output from the **show platform software fed active punt packet-capture display detailed** command:

```
Device# show platform software fed active punt packet-capture display detailed
Punt packet capturing: disabled. Buffer wrapping: disabled
Total captured so far: 101 packets. Capture capacity : 4096 packets

------ Packet Number: 1, Timestamp: 2018/09/04 23:22:10.179 ------
 interface : GigabitEthernet2/0/2 [if-id: 0x00000032] (physical)
 ether hdr : dest mac: 0100.0ccc.cccd, src mac: 2c36.f8fc.4884
 ether hdr : ethertype: 0x0032

 Doppler Frame Descriptor :
```

```
   0000000044004E04  C00F402D94510000  0000000000000100  0000400401000000
   0000000001000050  000000006D000100  0000000025836200  0000000000000000

 Packet Data Dump (length: 68 bytes) :
   01000CCCCCCD2C36  F8FC48840032AAAA  0300000C010B0000  00000080012C36F8
   FC48800000000080  012C36F8FC488080  0400001400002000F  0071000000020001
   244E733E

------ Packet Number: 2, Timestamp: 2018/09/04 23:22:10.179 ------
 interface : GigabitEthernet2/0/2 [if-id: 0x00000032] (physical)
 ether hdr : dest mac: 0180.c200.0000, src mac: 2c36.f8fc.4884
 ether hdr : ethertype: 0x0026
!
!
!
```

show platform software ilpower

To display the inline power details of all the PoE ports on the device, use the **show platform software ilpower** command in privileged EXEC mode.

show platform software ilpower {**details** | **port** {**GigabitEthernet** *interface-number* } | **system** *slot-number* }

Syntax Description

details	Displays inline power details for all the interfaces.
port	Displays inline power port configuration.
GigabitEthernet *interface-number*	The GigabitEthernet interface number. Values range from 0 to 9.
system *slot-number*	Displays inline power system configuration.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	The command was introduced.

Examples

The following is sample output from the **show platform software ilpower details** command:

```
Device# show platform software ilpower details
ILP Port Configuration for interface Gi1/0/1
    Initialization Done:   Yes
    ILP Supported:         Yes
    ILP Enabled:           Yes
    POST:                  Yes
    Detect On:             No
    Powered Device Detected            No
    Powered Device Class Done          No
    Cisco Powered Device:              No
    Power is On:           No
    Power Denied:          No
    Powered Device Type:               Null
    Powerd Device Class:              Null
    Power State:           NULL
    Current State:         NGWC_ILP_DETECTING_S
    Previous State:        NGWC_ILP_SHUT_OFF_S
    Requested Power in milli watts:       0
    Short Circuit Detected:                 0
    Short Circuit Count:             0
    Cisco Powerd Device Detect Count: 0
    Spare Pair mode:       0
        IEEE Detect:       Stopped
        IEEE Short:        Stopped
        Link Down:         Stopped
        Voltage sense:            Stopped
    Spare Pair Architecture:       1
    Signal Pair Power allocation in milli watts: 0
    Spare Pair Power On:   0
    Powered Device power state:        0
    Timer:
```

```
Power Good:        Stopped
Power Denied:      Stopped
Cisco Powered Device Detect:   Stopped
```

show platform software memory

To display memory information for a specified switch, use the **show platform software memory** command in privileged EXEC mode.

show platform software memory [{**chunk** | **database** | **messaging**}] *process slot*

Syntax Description

Syntax Description

chunk	(Optional) Displays chunk memory information for the specified process.
database	(Optional) Displays database memory information for the specified process.
messaging	(Optional) Displays messaging memory information for the specified process. The information displayed is for internal debugging purposes only.

process

Level that is being set. Options include:

- **bt-logger**—The Binary-Tracing Logger process.
- **btrace-manager**—The Btrace Manager process.
- **chassis-manager**—The Chassis Manager process.
- **cli-agent**—The CLI Agent process.
- **cmm**—The CMM process.
- **dbm**—The Database Manager process.
- **dmiauthd**—The DMI Authentication Daemon process.
- **emd**—The Environmental Monitoring process.
- **fed**—The Forwarding Engine Driver process.
- **forwarding-manager**—The Forwarding Manager process.
- **geo**—The Geo Manager process.
- **gnmi**—The GNMI process.
- **host-manager**—The Host Manager process.
- **interface-manager**—The Interface Manager process.
- **iomd**—The Input/Output Module daemon (IOMd) process.
- **ios**—The IOS process.
- **iox-manager**—The IOx Manager process.
- **license-manager**—The License Manager process.
- **logger**—The Logging Manager process.
- **mdt-pubd**—The Model Defined Telemetry Publisher process.
- **ndbman**—The Netconf DataBase Manager process.
- **nesd**—The Network Element Synchronizer Daemon process.
- **nginx**—The Nginx Webserver process.
- **nif_mgr**—The NIF Manager process.
- **platform-mgr**—The Platform Manager process.
- **pluggable-services**—The Pluggable Services process.
- **replication-mgr**—The Replication Manager process.
- **shell-manager**—The Shell Manager process.
- **sif**—The Stack Interface (SIF) Manager process.
- **smd**—The Session Manager process.
- **stack-mgr**—The Stack Manager process.

- **syncfd**—The SyncmDaemon process.
- **table-manager**—The Table Manager Server.
- **thread-test**—The Multithread Manager process.
- **virt-manager**—The Virtualization Manager process.

slot	Hardware slot where the process for which the level is set, is running. Options include:
	• *number*—Number of the SIP slot of the hardware module where the level is set. For instance, if you want to specify the SIP in SIP slot 2 of the switch, enter 2.
	• *SIP-slot / SPA-bay*—Number of the SIP switch slot and the number of the shared port adapter (SPA) bay of that SIP. For instance, if you want to specify the SPA in bay 2 of the SIP in switch slot 3, enter 3/2.
	• **F0**—The Embedded Service Processor slot 0.
	• **FP active**—The active Embedded Service Processor.
	• **FP standby**—The standby Embedded Service Processor.
	• **R0**—The route processor in slot 0.
	• **RP active**—The active route processor.
	• **RP standby**—The standby route processor.
	• **switch active**—The active switch.
	• **switch standby**—The standby switch.
	  • *number*—Number of the SIP slot of the hardware module where the level is set. For instance, if you want to specify the SIP in SIP slot 2 of the switch, enter 2.
	  • *SIP-slot / SPA-bay*—Number of the SIP switch slot and the number of the shared port adapter (SPA) bay of that SIP. For instance, if you want to specify the SPA in bay 2 of the SIP in switch slot 3, enter 3/2.
	  • **F0**—The Embedded Service Processor in slot 0.
	  • **FP active**—The active Embedded Service Processor.
	  • **R0**—The route processor in slot 0.
	  • **RP active**—The active route processor.

Command Default No default behavior or values.

Command Modes Privileged EXEC (#)

Command History

Command History

Release	Modificatio
Cisco IOS XE Everest 16.6.1	This comm

The following is a sample output displaying the abbreviated (brief keyword) memory information for the Forwarding Manager process for Cisco Catalyst 9000 Series ESP slot 0:

```
Device# show platform software memory forwarding-manager switch 1 fp active brief

  module                  allocated     requested     allocs        frees
  ------------------------------------------------------------------------------
  Summary                 5702540       5619788       121888        116716
  AOM object              1920374       1920310       4             0
  AOM links array         880379        880315        4             0
  smc_message             819575        819511        4             0
  AOM update state        640380        640316        4             0
  dpidb-config            208776        203544        351           24
  fman-infra-avl          178016        153680        1521          0
  AOM batch               152373        152309        4             0
  AOM asynchronous conte  128388        128324        4             0
  AOM basic data          124824        124760        5             1
  eventutil               118939        118299        50            10
  AOM tree node           96465         96385         5             0
  AOM tree root           72377         72313         4             0
  acl                     36090         31914         504           243
  fman-infra-ipc          35326         24366         115097        114412
  AOM uplink update node  32386         32322         4             0
  unknown                 30528         23808         424           4
  uipeer                  27232         27152         5             0
  fman-infra-qos          26872         24712         164           29
  cce-class               19427         15411         251           0
  l2 control protocol     15472         12896         325           164
  fman-infra-cce          15272         13576         106           0
  smc_channel             15223         15159         4             0
  unknown                 14208         8736          447           105
  chunk                   12513         12033         33            3
  cce-bind                8496          7552          82            23
  MATM mac entry          8040          5928          544           412
  adj                     7064          6312          157           110
  route-pfx               6116          5412          157           113
  Filter_rules            4912          4896          1             0
  fman-infra-dpidb        4130          2338          112           0
  SMC Buffer              3794          3202          43            6
  urpf-list               3028          2100          85            27
  lookup                  2480          2160          30            10
  MATM mac table          2432          1600          148           96
  cdllib                  1688          1672          1             0
  route-tbl               1600          1264          21            0
  FNF Flowdef             1492          1460          3             1
  acl-ref                 1120          1024          8             2
  cgm-lib                 1120          880           410           395
  pbr_if_cfg              1088          976           205           198
  FNF Monitor             1048          1032          1             0
  pbr_routemap            960           864           18            12
!
!
!
```

The following table describes the significant fields shown in the display.

Table 8: show platform software memory brief Field Descriptions

Field	Description
module	Name of submodule.
allocated	Memory, allocated in bytes.
requested	Number of bytes requested by application.
allocs	Number of discrete allocation event attempts.
frees	Number of free events.

show platform software process list

To display the list of running processes on a platform, use the **show platform software process list** command in privileged EXEC mode.

show platform software process list switch {*switch-number* | **active** | **standby**} {**0** | **F0** | **R0**} [{**name** *process-name* | **process-id** *process-ID* | **sort memory** | **summary**}]

Syntax Description

switch *switch-number*	Displays information about the switch. Valid values for *switch-number* argument are from 0 to 9.
active	Displays information about the active instance of the switch.
standby	Displays information about the standby instance of the switch.
0	Displays information about the shared port adapters (SPA) Interface Processor slot 0.
F0	Displays information about the Embedded Service Processor (ESP) slot 0.
R0	Displays information about the Route Processor (RP) slot 0.
name *process-name*	(Optional) Displays information about the specified process. Enter the process name.
process-id *process-ID*	(Optional) Displays information about the specified process ID. Enter the process ID.
sort	(Optional) Displays information sorted according to processes.
memory	(Optional) Displays information sorted according to memory.
summary	(Optional) Displays a summary of the process memory of the host device.

Command Modes

Privileged EXE (#)

Command History

Release	Modification
Cisco IOS XE Gibraltar 16.10.1	The Size column in the output was modified to display Resident Set Size (RSS) in KB.
Cisco IOS XE Everest 16.6.1	The command was introduced.

Examples

The following is sample output from the **show platform software process list switch active R0** command:

```
Switch# show platform software process list switch active R0 summary

Total number of processes: 278
  Running          : 2
  Sleeping         : 276
  Disk sleeping    : 0
  Zombies          : 0
```

```
Stopped          : 0
Paging           : 0

Up time          : 8318
Idle time        : 0
User time        : 216809
Kernel time      : 78931

Virtual memory   : 12933324800
Pages resident   : 634061
Major page faults: 2228
Minor page faults: 3491744

Architecture     : mips64
Memory (kB)
  Physical       : 3976852
  Total          : 3976852
  Used           : 2766952
  Free           : 1209900
  Active         : 2141344
  Inactive       : 1589672
  Inact-dirty    : 0
  Inact-clean    : 0
  Dirty          : 4
  AnonPages      : 1306800
  Bounce         : 0
  Cached         : 1984688
  Commit Limit   : 1988424
  Committed As   : 3358528
  High Total     : 0
  High Free      : 0
  Low Total      : 3976852
  Low Free       : 1209900
  Mapped         : 520528
  NFS Unstable   : 0
  Page Tables    : 17328
  Slab           : 0
  VMmalloc Chunk : 1069542588
  VMmalloc Total : 1069547512
  VMmalloc Used  : 2588
  Writeback      : 0
  HugePages Total: 0
  HugePages Free : 0
  HugePages Rsvd : 0
  HugePage Size  : 2048

Swap (kB)
  Total          : 0
  Used           : 0
  Free           : 0
  Cached         : 0

Buffers (kB)     : 439528

Load Average
  1-Min          : 1.13
  5-Min          : 1.18
  15-Min         : 0.92
```

The following is sample output from the **show platform software process list switch active R0** command:

```
Device# show platform software process list switch active R0
Name                         Pid     PPid  Group Id  Status    Priority  Size
------------------------------------------------------------------------------
systemd                        1        0         1  S               20  7892
kthreadd                       2        0         0  S               20  0
ksoftirqd/0                    3        2         0  S               20  0
kworker/0:0H                   5        2         0  S                0  0
rcu_sched                      7        2         0  S               20  0
rcu_bh                         8        2         0  S               20  0
migration/0                    9        2         0  S       4294967196  0
migration/1                   10        2         0  S       4294967196  0
ksoftirqd/1                   11        2         0  S               20  0
kworker/1:0H                  13        2         0  S                0  0
migration/2                   14        2         0  S       4294967196  0
ksoftirqd/2                   15        2         0  S               20  0
kworker/2:0H                  17        2         0  S                0  0
systemd-journal              221        1       221  S               20  4460
kworker/1:3                  246        2         0  S               20  0
systemd-udevd                253        1       253  S               20  5648
kvm-irqfd-clean              617        2         0  S                0  0
scsi_eh_6                    620        2         0  S               20  0
scsi_tmf_6                   621        2         0  S                0  0
usb-storage                  622        2         0  S               20  0
scsi_eh_7                    625        2         0  S               20  0
scsi_tmf_7                   626        2         0  S                0  0
usb-storage                  627        2         0  S               20  0
kworker/7:1                  630        2         0  S               20  0
bioset                       631        2         0  S                0  0
kworker/3:1H                 648        2         0  S                0  0
kworker/0:1H                 667        2         0  S                0  0
kworker/1:1H                 668        2         0  S                0  0
bioset                       669        2         0  S                0  0
kworker/6:2                  698        2         0  S               20  0
kworker/2:2                  699        2         0  S               20  0
kworker/2:1H                 703        2         0  S                0  0
kworker/7:1H                 748        2         0  S                0  0
kworker/5:1H                 749        2         0  S                0  0
kworker/6:1H                 754        2         0  S                0  0
kworker/7:2                  779        2         0  S               20  0
auditd                       838        1       838  S               16  2564
.
.
.
```

The table below describes the significant fields shown in the displays.

Table 9: show platform software process list Field Descriptions

Field	Description
Name	Displays the command name associated with the process. Different threads in the same process may have different command values.
Pid	Displays the process ID that is used by the operating system to identify and keep track of the processes.
PPid	Displays process ID of the parent process.
Group Id	Displays the group ID

Field	Description
Status	Displays the process status in human readable form.
Priority	Displays the negated scheduling priority.
Size	Prior to Cisco IOS XE Gibraltar 16.10.1: Displays Virtual Memory size. From Cisco IOS XE Gibraltar 16.10.1 onwards: Displays the Resident Set Size (RSS) that shows how much memory is allocated to that process in the RAM.

show platform software process memory

To display the amount of memory used by each system process, use the **show platform software process memory** command in privileged EXEC mode.

show platform process memory
switch {*switch-number* | **active** | **standby**} {**0** | **F0** | **FP** | **R0**} {**all** [**sorted** | **virtual** [**sorted**]] | **name** *process-name* {**maps** | **smaps** [**summary**] } | **process-id** *process-id* {**maps** | **smaps** [**summary**] } }

Syntax Description

switch *switch-number*	Displays information about the switch. Enter the switch number.
active	Specifies the active instance of the device.
standby	Specifies the standby instance of the device.
0	Specifies the Shared Port Adapter (SPA) Interface Processor slot 0.
F0	Specifies the Embedded Service Processor (ESP) slot 0.
FP	Specifies the Embedded Service Processor (ESP).
R0	Specifies the Route Processor (RP) slot 0.
all	Lists all processes.
sorted	(Optional) Sorts the output based on Resident Set Size (RSS).
virtual	(Optional) Specifies virtual memory.
name *process-name*	Specifies a process name.
maps	Specifies the memory maps of a process.
smaps summary	Specifies the smaps summary of a process.
process-id *process-id*	Specifies a process identifier.

Command History

Release	Modification
Cisco IOS XE Gibraltar 16.10.1	This command was introduced.

Command Modes

Privileged EXEC(#)

Examples:

The following is a sample output from the **show platform software process memory active R0 all** command:

```
Device# show platform software process memory switch active R0 all

   Pid        RSS        PSS       Heap     Shared    Private              Name
-------------------------------------------------------------------------------
     1       4876       3229       1064       1808       3068           systemd
   118       3184       1327        132       2352        832   systemd-journal
   159       3008       1191        396       1996       1012     systemd-udevd
   407       3192       1262        132       2196        996       dbus-daemon
  3406       4772       3064        264       1940       2832          virtlogd
  3411       5712       3474       2964       2344       3368       droputil.sh
  3416       2588        358        132       2336        252       libvirtd.sh
  3420       5708       3484       2976       2308       3400      reflector.sh
  3424       1804        263        132       1632        172            xinetd
  3425        964        118        132        872         92             sleep
  3434       3060        844        528       2304        756            oom.sh
  3442       2068        606        132       1604        464           rpcbind
  3485       2380        845        132       1636        744         rpc.statd
  3486       1632        338        132       1348        284   boothelper_evt.
  3493       1136        156        132       1004        132      inotifywait
  3504       2048        753        132       1372        676        rpc.mountd
  3584       2868        620         36       2384        484             rotee
  3649       1032        116        132        944         88             sleep
  3705       2784        613         36       2296        488             rotee
  3718       2856        610         36       2376        480             rotee
  3759       1292        184        132       1136        156       inotifywait
  3787       4256       2040       1640       2300       1956          iptbl.sh
  3894       2948        637         36       2460        488             rotee
  4017       1380        175        132       1236        144       inotifywait
  4866       1820        287        132       1624        196            xinetd
  5887       1692        257        132       1508        184            xinetd
  5891       7248       4984       4584       2348       4900   rollback_timer.
  5893       1764        257        132       1588        176            xinetd
  6031       2804        601         36       2332        472             rotee
  6037       1228        163        132       1092        136       inotifywait
  6077       4736       3389       2992       1368       3368           psvp.sh
  6115       1620        476         36       1152        468             rotee
  6122        624        149        132        480        144       inotifywait
  6127       5440       4077       3680       1384       4056            pvp.sh
  6165       1736        592         36       1152        584             rotee
  6245        624        149        132        480        144       inotifywait
  6353       2592       1260        924       1352       1240           pman.sh
  6470       1632        488         36       1152        480             rotee
  6499       2588       1262        924       1348       1240           pman.sh
  6666       1640        496         36       1152        488             rotee
  6718       2584       1258        800       1348       1236           pman.sh
  6736       8360       7020       6640       1360       7000   auto_upgrade_cl
  6909       1636        492         36       1152        484             rotee
  6955       2588       1262        928       1348       1240           pman.sh
  7029       2196        679         40       1552        644   auto_upgrade_se
  7149       1636        492         36       1152        484             rotee
  7224      13200       4595         48       9368       3832         bt_logger
  7295       2588       1262        800       1348       1240           pman.sh
.
.
.
```

The table below describes the significant fields shown in the displays.

Table 10: show platform software process memory Field Descriptions

Field	Description
PID	Displays the process ID that is used by the operating system to identify and keep track of the processes.
RSS	Displays the Resident Set Size (in kilobytes (KB)) that shows how much memory is allocated to that process in the RAM.
PSS	Displays the Proportional Set Size of a process. This is the count of pages it has in memory, where each page is divided by the number of processes sharing it.
Heap	Displays where all user-allocated memory is located.
Shared	Shared clean + Shared dirty
Private	Private clean + Private dirty
Name	Displays the command name associated with the process. Different threads in the same process may have different command values.

show platform software process slot switch

To display platform software process switch information, use the **show platform software process slot switch** command in privileged EXEC mode.

show platform software process slot switch {*switch-number* | **active** | **standby**} {**0** | **F0** | **R0**} **monitor** [{**cycles** *no-of-times* [{**interval** *delay* [{**lines** *number*}]}]}]

Syntax Description

switch-number	Switch number.
active	Specifies the active instance.
standby	Specifies the standby instance.
0	Specifies the shared port adapter (SPA) interface processor slot 0.
F0	Specifies the Embedded Service Processor (ESP) slot 0.
R0	Specifies the Route Processor (RP) slot 0.
monitor	Monitors the running processes.
cycles *no-of-tmes*	(Optional) Sets the number of times to run monitor command. Valid values are from 1 to 4294967295. The default is 5.
interval *delay*	(Optional) Sets a delay after each . Valid values are from 0 to 300. The default is 3.
lines *number*	(Optional) Sets the number of lines of output displayed. Valid values are from 0 to 512. The default is 0.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
	This command was introduced.

Usage Guidelines

The output of the **show platform software process slot switch** and **show processes cpu platform monitor location** commands display the output of the Linux **top** command. The output of these commands display Free memory and Used memory as displayed by the Linux **top** command. The values displayed for the Free memory and Used memory by these commands do not match the values displayed by the output of other platform-memory related CLIs.

Examples

The following is sample output from the **show platform software process slot monitor** command:

```
Switch# show platform software process slot switch active R0 monitor
```

```
top - 00:01:52 up 1 day, 11:20,  0 users,  load average: 0.50, 0.68, 0.83
Tasks: 311 total,   2 running, 309 sleeping,   0 stopped,   0 zombie
Cpu(s):  7.4%us,  3.3%sy,  0.0%ni, 89.2%id,  0.0%wa,  0.0%hi,  0.1%si,  0.0%st
Mem:   3976844k total,  3955036k used,    21808k free,   419312k buffers
Swap:        0k total,        0k used,        0k free,  1946764k cached

  PID USER      PR  NI  VIRT  RES  SHR S %CPU %MEM    TIME+  COMMAND
 5693 root      20   0  3448 1368  912 R    7  0.0   0:00.07 top
17546 root      20   0 2044m 244m  79m S    7  6.3 186:49.08 fed main event
18662 root      20   0 1806m 678m 263m S    5 17.5 215:32.38 linux_iosd-imag
30276 root      20   0  171m  42m  33m S    5  1.1 125:06.77 repm
17835 root      20   0  935m  74m  63m S    4  1.9  82:28.31 sif_mgr
18534 root      20   0  182m 150m  10m S    2  3.9   8:12.08 smand
    1 root      20   0  8440 4740 2184 S    0  0.1   0:09.52 systemd
    2 root      20   0     0    0    0 S    0  0.0   0:00.00 kthreadd
    3 root      20   0     0    0    0 S    0  0.0   0:02.86 ksoftirqd/0
    5 root       0 -20     0    0    0 S    0  0.0   0:00.00 kworker/0:0H
    7 root      RT   0     0    0    0 S    0  0.0   0:01.44 migration/0
    8 root      20   0     0    0    0 S    0  0.0   0:00.00 rcu_bh
    9 root      20   0     0    0    0 S    0  0.0   0:23.08 rcu_sched
   10 root      20   0     0    0    0 S    0  0.0   0:58.04 rcuc/0
   11 root      20   0     0    0    0 S    0  0.0  21:35.60 rcuc/1
   12 root      RT   0     0    0    0 S    0  0.0   0:01.33 migration/1
```

Related Commands

Command	Description
show processes cpu platform monitor location	Displays information about the CPU utilization of the IOS-XE processes.

show platform software status control-processor

To display platform software control-processor status, use the **show platform software status control-processor** command in privileged EXEC mode.

show platform software status control-processor [{**brief**}]

Syntax Description

brief	(Optional) Displays a summary of the platform control-processor status.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Examples

The following is sample output from the **show platform memory software status control-processor** command:

```
Switch# show platform software status control-processor

2-RP0: online, statistics updated 7 seconds ago
Load Average: healthy
  1-Min: 1.00, status: healthy, under 5.00
  5-Min: 1.21, status: healthy, under 5.00
  15-Min: 0.90, status: healthy, under 5.00
Memory (kb): healthy
  Total: 3976852
  Used: 2766284 (70%), status: healthy
  Free: 1210568 (30%)
  Committed: 3358008 (84%), under 95%
Per-core Statistics
CPU0: CPU Utilization (percentage of time spent)
  User:  4.40, System:  1.70, Nice:  0.00, Idle: 93.80
  IRQ:  0.00, SIRQ:  0.10, IOwait:  0.00
CPU1: CPU Utilization (percentage of time spent)
  User:  3.80, System:  1.20, Nice:  0.00, Idle: 94.90
  IRQ:  0.00, SIRQ:  0.10, IOwait:  0.00
CPU2: CPU Utilization (percentage of time spent)
  User:  7.00, System:  1.10, Nice:  0.00, Idle: 91.89
  IRQ:  0.00, SIRQ:  0.00, IOwait:  0.00
CPU3: CPU Utilization (percentage of time spent)
  User:  4.49, System:  0.69, Nice:  0.00, Idle: 94.80
  IRQ:  0.00, SIRQ:  0.00, IOwait:  0.00

3-RP0: unknown, statistics updated 2 seconds ago
Load Average: healthy
  1-Min: 0.24, status: healthy, under 5.00
  5-Min: 0.27, status: healthy, under 5.00
  15-Min: 0.32, status: healthy, under 5.00
Memory (kb): healthy
  Total: 3976852
  Used: 2706768 (68%), status: healthy
  Free: 1270084 (32%)
  Committed: 3299332 (83%), under 95%
Per-core Statistics
CPU0: CPU Utilization (percentage of time spent)
```

```
  User:  4.50, System:  1.20, Nice:  0.00, Idle: 94.20
  IRQ:  0.00, SIRQ:  0.10, IOwait:  0.00
CPU1: CPU Utilization (percentage of time spent)
  User:  5.20, System:  0.50, Nice:  0.00, Idle: 94.29
  IRQ:  0.00, SIRQ:  0.00, IOwait:  0.00
CPU2: CPU Utilization (percentage of time spent)
  User:  3.60, System:  0.70, Nice:  0.00, Idle: 95.69
  IRQ:  0.00, SIRQ:  0.00, IOwait:  0.00
CPU3: CPU Utilization (percentage of time spent)
  User:  3.00, System:  0.60, Nice:  0.00, Idle: 96.39
  IRQ:  0.00, SIRQ:  0.00, IOwait:  0.00

4-RP0: unknown, statistics updated 2 seconds ago
Load Average: healthy
  1-Min: 0.21, status: healthy, under 5.00
  5-Min: 0.24, status: healthy, under 5.00
  15-Min: 0.24, status: healthy, under 5.00
Memory (kb): healthy
  Total: 3976852
  Used: 1452404 (37%), status: healthy
  Free: 2524448 (63%)
  Committed: 1675120 (42%), under 95%
Per-core Statistics
CPU0: CPU Utilization (percentage of time spent)
  User:  2.30, System:  0.40, Nice:  0.00, Idle: 97.30
  IRQ:  0.00, SIRQ:  0.00, IOwait:  0.00
CPU1: CPU Utilization (percentage of time spent)
  User:  4.19, System:  0.69, Nice:  0.00, Idle: 95.10
  IRQ:  0.00, SIRQ:  0.00, IOwait:  0.00
CPU2: CPU Utilization (percentage of time spent)
  User:  4.79, System:  0.79, Nice:  0.00, Idle: 94.40
  IRQ:  0.00, SIRQ:  0.00, IOwait:  0.00
CPU3: CPU Utilization (percentage of time spent)
  User:  2.10, System:  0.40, Nice:  0.00, Idle: 97.50
  IRQ:  0.00, SIRQ:  0.00, IOwait:  0.00

9-RP0: unknown, statistics updated 4 seconds ago
Load Average: healthy
  1-Min: 0.20, status: healthy, under 5.00
  5-Min: 0.35, status: healthy, under 5.00
  15-Min: 0.35, status: healthy, under 5.00
Memory (kb): healthy
  Total: 3976852
  Used: 1451328 (36%), status: healthy
  Free: 2525524 (64%)
  Committed: 1675932 (42%), under 95%
Per-core Statistics
CPU0: CPU Utilization (percentage of time spent)
  User:  1.90, System:  0.50, Nice:  0.00, Idle: 97.60
  IRQ:  0.00, SIRQ:  0.00, IOwait:  0.00
CPU1: CPU Utilization (percentage of time spent)
  User:  4.39, System:  0.19, Nice:  0.00, Idle: 95.40
  IRQ:  0.00, SIRQ:  0.00, IOwait:  0.00
CPU2: CPU Utilization (percentage of time spent)
  User:  5.70, System:  1.00, Nice:  0.00, Idle: 93.30
  IRQ:  0.00, SIRQ:  0.00, IOwait:  0.00
CPU3: CPU Utilization (percentage of time spent)
  User:  1.30, System:  0.60, Nice:  0.00, Idle: 98.00
  IRQ:  0.00, SIRQ:  0.10, IOwait:  0.00
```

The following is sample output from the **show platform memory software status control-processor brief** command:

```
Switch# show platform software status control-processor brief

Load Average
 Slot  Status  1-Min  5-Min 15-Min
2-RP0 Healthy   1.10   1.21   0.91
3-RP0 Healthy   0.23   0.27   0.31
4-RP0 Healthy   0.11   0.21   0.22
9-RP0 Healthy   0.10   0.30   0.34

Memory (kB)
 Slot  Status    Total     Used (Pct)     Free (Pct) Committed (Pct)
2-RP0 Healthy  3976852  2766956 (70%)  1209896 (30%)   3358352 (84%)
3-RP0 Healthy  3976852  2706824 (68%)  1270028 (32%)   3299276 (83%)
4-RP0 Healthy  3976852  1451888 (37%)  2524964 (63%)   1675076 (42%)
9-RP0 Healthy  3976852  1451580 (37%)  2525272 (63%)   1675952 (42%)

CPU Utilization
 Slot  CPU   User System   Nice   Idle    IRQ   SIRQ IOwait
2-RP0    0   4.10   2.00   0.00  93.80   0.00   0.10   0.00
         1   4.60   1.00   0.00  94.30   0.00   0.10   0.00
         2   6.50   1.10   0.00  92.40   0.00   0.00   0.00
         3   5.59   1.19   0.00  93.20   0.00   0.00   0.00
3-RP0    0   2.80   1.20   0.00  95.90   0.00   0.10   0.00
         1   4.49   1.29   0.00  94.20   0.00   0.00   0.00
         2   5.30   1.60   0.00  93.10   0.00   0.00   0.00
         3   5.80   1.20   0.00  93.00   0.00   0.00   0.00
4-RP0    0   1.30   0.80   0.00  97.89   0.00   0.00   0.00
         1   1.30   0.20   0.00  98.50   0.00   0.00   0.00
         2   5.60   0.80   0.00  93.59   0.00   0.00   0.00
         3   5.09   0.19   0.00  94.70   0.00   0.00   0.00
9-RP0    0   3.99   0.69   0.00  95.30   0.00   0.00   0.00
         1   2.60   0.70   0.00  96.70   0.00   0.00   0.00
         2   4.49   0.89   0.00  94.60   0.00   0.00   0.00
         3   2.60   0.20   0.00  97.20   0.00   0.00   0.00
```

show platform software thread list

To display the list of threads on a platform, use the **show platform software thread list** command in privileged EXEC mode.

show platform software thread list switch {*switch-number* | **active** | **standby**} {**0** | **F0** | **FP active** | **R0**} **pname** {**cdman** | **vidman** | **all**} **tname** {**main** | **pktio** | **rt** | **all**}

Syntax Description

switch *switch-number*	Displays information about the switch. Enter the switch number.
active	Specifies the active instance of the device.
standby	Specifies standby instance of the device.
0	Specifies the Shared Port Adapter (SPA) Interface Processor slot 0.
F0	Specifies the Embedded Service Processor (ESP) slot 0.
FP active	Specifies the active instance of Embedded Service Processor (ESP).
R0	Specifies the Route Processor (RP) slot 0.
pname	Specifies a process name. The possible values are **cdman**, **vidman**, and **all**.
tname	Specifies a thread name. The possible values are **main**, **pktio**, **rt**, and **all**.

Command History

Release	Modification
Cisco IOS XE Gibraltar 16.10.1	This command was introduced.

Command Modes

Privileged EXEC(#)

Examples:

The following is sample output from the **show platform software thread list switch active R0 pname cdman tname all** command:

```
Device# show platform software thread list switch active R0 pname cdman tname all

Name           Tid    PPid  Group Id  Core    Vcswch   Nvcswch  Status    Priority
TIME+  Size
-------------------------------------------------------------------------------------------------
cdman         8407    7295      8407     1         0         0  S               20
12309  36976
```

The table below describes the significant fields shown in the displays.

Table 11: show platform software thread list Field Descriptions

Field	Description
Name	Displays the command name associated with the process. Different threads in the same process may have different command values.
Tid	Displays the process ID.
PPid	Displays the process ID of the parent process.
Group Id	Displays the group ID.
Core	Displays processor information.
Vcswch	Displays the number of voluntary context switches.
Nvcswch	Displays the number of non-voluntary context switches.
Status	Displays the process status in human readable form.
Priority	Displays the negated scheduling priority.
TIME+	Displays the time since the start of the process.
Size	Displays the Resident Set Size (in kilobytes (KB)) that shows how much memory is allocated to that process in the RAM.

show processes cpu platform

To display information about the CPU utilization of the IOS-XE processes, use the **show processes cpu platform** command in privileged EXEC mode.

show processes cpu platform [[**sorted** [**1min** | **5min** | **5sec**]] **location**
switch { *switch-number* | **active** | **standby** } { **F0** | **FP active** | **R0** | **RP active** }]

Syntax Description

sorted	(Optional) Displays output sorted based on percentage of CPU usage on a platform.
1min	(Optional) Sorts based on 1 minute intervals.
5min	(Optional) Sorts based on 5 minute intervals.
5sec	(Optional) Sorts based on 5 second intervals.
location	Specifies the Field Replaceable Unit (FRU) location.
switch *switch-number*	Displays information about the switch. Enter the switch number.
active	Specifies the active instance of the device.
standby	Specifies the standby instance of the device.
F0	Specifies the Embedded Service Processor (ESP) slot 0.
FP active	Specifies active instances on the Embedded Service Processor (ESP).
R0	Specifies the Route Processor (RP) slot 0.
RP active	Specifies active instances on the Route Processor (RP).

Command History

Release	Modification
Cisco IOS XE Gibraltar 16.10.1	This command was introduced.

Command Modes

Privileged EXEC (#)

Examples:

The following is sample output from the **show processes cpu platform** command:

```
Device# show processes cpu platform

CPU utilization for five seconds:  1%, one minute:  3%, five minutes:  2%
Core 0: CPU utilization for five seconds:  2%, one minute:  2%, five minutes:  2%
Core 1: CPU utilization for five seconds:  2%, one minute:  1%, five minutes:  1%
Core 2: CPU utilization for five seconds:  3%, one minute:  1%, five minutes:  1%
Core 3: CPU utilization for five seconds:  2%, one minute:  5%, five minutes:  2%
   Pid    PPid    5Sec    1Min    5Min  Status        Size  Name
-------------------------------------------------------------------------------
     1       0      0%      0%      0%  S             4876  systemd
```

```
     2       0      0%      0%      0%  S                0  kthreadd
     3       2      0%      0%      0%  S                0  ksoftirqd/0
     5       2      0%      0%      0%  S                0  kworker/0:0H
     7       2      0%      0%      0%  S                0  rcu_sched
     8       2      0%      0%      0%  S                0  rcu_bh
     9       2      0%      0%      0%  S                0  migration/0
    10       2      0%      0%      0%  S                0  watchdog/0
    11       2      0%      0%      0%  S                0  watchdog/1
    12       2      0%      0%      0%  S                0  migration/1
    13       2      0%      0%      0%  S                0  ksoftirqd/1
    15       2      0%      0%      0%  S                0  kworker/1:0H
    16       2      0%      0%      0%  S                0  watchdog/2
    17       2      0%      0%      0%  S                0  migration/2
    18       2      0%      0%      0%  S                0  ksoftirqd/2
    20       2      0%      0%      0%  S                0  kworker/2:0H
    21       2      0%      0%      0%  S                0  watchdog/3
    22       2      0%      0%      0%  S                0  migration/3
    23       2      0%      0%      0%  S                0  ksoftirqd/3
    24       2      0%      0%      0%  S                0  kworker/3:0
    25       2      0%      0%      0%  S                0  kworker/3:0H
    26       2      0%      0%      0%  S                0  kdevtmpfs
    27       2      0%      0%      0%  S                0  netns
    28       2      0%      0%      0%  S                0  perf
    29       2      0%      0%      0%  S                0  khungtaskd
    30       2      0%      0%      0%  S                0  writeback
    31       2      7%      8%      8%  S                0  ksmd
    32       2      0%      0%      0%  S                0  khugepaged
    33       2      0%      0%      0%  S                0  crypto
    34       2      0%      0%      0%  S                0  bioset
    35       2      0%      0%      0%  S                0  kblockd
    36       2      0%      0%      0%  S                0  ata_sff
    37       2      0%      0%      0%  S                0  rpciod
    63       2      0%      0%      0%  S                0  kswapd0
    64       2      0%      0%      0%  S                0  vmstat
    65       2      0%      0%      0%  S                0  fsnotify_mark
.
.
.
```

The following is sample output from the **show processes cpu platform sorted 5min location switch 5 R0**

```
Device# show processes cpu platform sorted 5min location switch 5 R0

CPU utilization for five seconds:  0%, one minute:  0%, five minutes:  0%
Core 0: CPU utilization for five seconds:  1%, one minute:  1%, five minutes:  1%
Core 1: CPU utilization for five seconds:  1%, one minute:  1%, five minutes:  1%
Core 2: CPU utilization for five seconds:  1%, one minute:  1%, five minutes:  1%
Core 3: CPU utilization for five seconds:  2%, one minute:  2%, five minutes:  1%
Core 4: CPU utilization for five seconds:  0%, one minute:  0%, five minutes:  0%
Core 5: CPU utilization for five seconds:  0%, one minute:  0%, five minutes:  0%
Core 6: CPU utilization for five seconds:  0%, one minute:  0%, five minutes:  0%
Core 7: CPU utilization for five seconds:  0%, one minute:  0%, five minutes:  0%
   Pid    PPid    5Sec    1Min    5Min  Status        Size  Name
------------------------------------------------------------------------------
 16358   15516      4%      4%      4%  S           221376  fed main event
 14062   12756      1%      1%      1%  S            52140  sif_mgr
 32105    8618      0%      0%      0%  S              260  inotifywait
 31396   31393      0%      0%      0%  S            36516  python2.7
 31393   31271      0%      0%      0%  S             2744  rdope.sh
 31319       1      0%      0%      0%  S             2648  rotee
 31271       1      0%      0%      0%  S             3852  pman.sh
 29671       2      0%      0%      0%  S                0  kworker/u16:0
 29341   29329      0%      0%      0%  S             1780  sntp
 29329       1      0%      0%      0%  S             2788  stack_sntp.sh
.
```

.
.

The following is sample output from the **show processes cpu platform location switch 7 R0** command:

```
Device# show processes cpu platform location switch 7 R0

CPU utilization for five seconds:  3%, one minute:  3%, five minutes:  3%
Core 0: CPU utilization for five seconds:  1%, one minute:  5%, five minutes:  5%
Core 1: CPU utilization for five seconds:  1%, one minute: 11%, five minutes:  5%
Core 2: CPU utilization for five seconds: 22%, one minute:  7%, five minutes:  6%
Core 3: CPU utilization for five seconds:  5%, one minute:  6%, five minutes:  6%
Core 4: CPU utilization for five seconds:  0%, one minute:  0%, five minutes:  0%
Core 5: CPU utilization for five seconds:  0%, one minute:  0%, five minutes:  0%
Core 6: CPU utilization for five seconds:  0%, one minute:  0%, five minutes:  0%
Core 7: CPU utilization for five seconds:  0%, one minute:  0%, five minutes:  6%
   Pid    PPid    5Sec    1Min    5Min  Status        Size  Name
--------------------------------------------------------------------------------
     1       0      0%      0%      0%  S             8044  systemd
     2       0      0%      0%      0%  S                0  kthreadd
.
.
.
```

show processes cpu platform history

To display information about the CPU usage history of a system, use the **show processes cpu platform history** command.

show processes cpu platform history [**1min** | **5min** | **5sec** | **60min**] **location switch** { *switch-number* | **active** | **standby** } { **0** | **F0** | **FP active** | **R0** }

1min	(Optional) Displays CPU utilization history with 1 minute intervals.
5min	(Optional) Displays CPU utilization history with 5 minute intervals.
5sec	(Optional) Displays CPU utilization history with 5 second intervals.
60min	(Optional) Displays CPU utilization history with 60 minute intervals.
location	Specifies the Field Replaceable Unit (FRU) location.
switch *switch-number*	Displays information about the switch. Enter the switch number.
active	Specifies the active instance of the device.
standby	Specifies the standby instance of the device.
0	Specifies the Shared Port Adapter (SPA) Interface Processor slot 0.
F0	Specifies the Embedded Service Processor (ESP) slot 0.
FP active	Specifies active instances on the Embedded Service Processor (ESP).
R0	Specifies the Route Processor (RP) slot 0.

Command History

Release	Modification
Cisco IOS XE Gibraltar 16.10.1	This command was introduced.

Command Modes

Privileged EXEC (#)

Examples:

The following is sample output from the **show processes cpu platform** command:

```
Device# show processes cpu platform
```

```
CPU utilization for five seconds:  1%, one minute:  3%, five minutes:  2%
Core 0: CPU utilization for five seconds:  2%, one minute:  2%, five minutes:  2%
Core 1: CPU utilization for five seconds:  2%, one minute:  1%, five minutes:  1%
Core 2: CPU utilization for five seconds:  3%, one minute:  1%, five minutes:  1%
Core 3: CPU utilization for five seconds:  2%, one minute:  5%, five minutes:  2%
   Pid    PPid    5Sec    1Min    5Min  Status        Size  Name
-------------------------------------------------------------------------------
     1       0      0%      0%      0%  S             4876  systemd
     2       0      0%      0%      0%  S                0  kthreadd
     3       2      0%      0%      0%  S                0  ksoftirqd/0
     5       2      0%      0%      0%  S                0  kworker/0:0H
     7       2      0%      0%      0%  S                0  rcu_sched
     8       2      0%      0%      0%  S                0  rcu_bh
     9       2      0%      0%      0%  S                0  migration/0
    10       2      0%      0%      0%  S                0  watchdog/0
    11       2      0%      0%      0%  S                0  watchdog/1
    12       2      0%      0%      0%  S                0  migration/1
    13       2      0%      0%      0%  S                0  ksoftirqd/1
    15       2      0%      0%      0%  S                0  kworker/1:0H
    16       2      0%      0%      0%  S                0  watchdog/2
    17       2      0%      0%      0%  S                0  migration/2
    18       2      0%      0%      0%  S                0  ksoftirqd/2
    20       2      0%      0%      0%  S                0  kworker/2:0H
    21       2      0%      0%      0%  S                0  watchdog/3
    22       2      0%      0%      0%  S                0  migration/3
    23       2      0%      0%      0%  S                0  ksoftirqd/3
    24       2      0%      0%      0%  S                0  kworker/3:0
    25       2      0%      0%      0%  S                0  kworker/3:0H
    26       2      0%      0%      0%  S                0  kdevtmpfs
    27       2      0%      0%      0%  S                0  netns
    28       2      0%      0%      0%  S                0  perf
    29       2      0%      0%      0%  S                0  khungtaskd
    30       2      0%      0%      0%  S                0  writeback
    31       2      7%      8%      8%  S                0  ksmd
    32       2      0%      0%      0%  S                0  khugepaged
    33       2      0%      0%      0%  S                0  crypto
    34       2      0%      0%      0%  S                0  bioset
    35       2      0%      0%      0%  S                0  kblockd
    36       2      0%      0%      0%  S                0  ata_sff
    37       2      0%      0%      0%  S                0  rpciod
    63       2      0%      0%      0%  S                0  kswapd0
    64       2      0%      0%      0%  S                0  vmstat
    65       2      0%      0%      0%  S                0  fsnotify_mark
.
.
.
```

The following is sample output from the **show processes cpu platform history 5sec** command:

```
Device# show processes cpu platform history 5sec

5 seconds ago, CPU utilization: 0%
10 seconds ago, CPU utilization: 0%
15 seconds ago, CPU utilization: 0%
20 seconds ago, CPU utilization: 0%
25 seconds ago, CPU utilization: 0%
30 seconds ago, CPU utilization: 0%
35 seconds ago, CPU utilization: 0%
40 seconds ago, CPU utilization: 0%
45 seconds ago, CPU utilization: 0%
50 seconds ago, CPU utilization: 0%
55 seconds ago, CPU utilization: 0%
60 seconds ago, CPU utilization: 0%
65 seconds ago, CPU utilization: 0%
70 seconds ago, CPU utilization: 0%
```

```
75 seconds ago, CPU utilization: 0%
80 seconds ago, CPU utilization: 0%
85 seconds ago, CPU utilization: 0%
90 seconds ago, CPU utilization: 0%
95 seconds ago, CPU utilization: 0%
100 seconds ago, CPU utilization: 0%
105 seconds ago, CPU utilization: 0%
110 seconds ago, CPU utilization: 0%
115 seconds ago, CPU utilization: 0%
120 seconds ago, CPU utilization: 0%
125 seconds ago, CPU utilization: 0%
130 seconds ago, CPU utilization: 0%
135 seconds ago, CPU utilization: 0%
140 seconds ago, CPU utilization: 0%
145 seconds ago, CPU utilization: 1%
150 seconds ago, CPU utilization: 0%
155 seconds ago, CPU utilization: 0%
160 seconds ago, CPU utilization: 0%
165 seconds ago, CPU utilization: 0%
170 seconds ago, CPU utilization: 0%
175 seconds ago, CPU utilization: 0%
180 seconds ago, CPU utilization: 0%
185 seconds ago, CPU utilization: 0%
190 seconds ago, CPU utilization: 0%
195 seconds ago, CPU utilization: 0%
200 seconds ago, CPU utilization: 0%
205 seconds ago, CPU utilization: 0%
210 seconds ago, CPU utilization: 0%
215 seconds ago, CPU utilization: 0%
220 seconds ago, CPU utilization: 0%
225 seconds ago, CPU utilization: 0%
230 seconds ago, CPU utilization: 0%
235 seconds ago, CPU utilization: 0%
240 seconds ago, CPU utilization: 0%
245 seconds ago, CPU utilization: 0%
250 seconds ago, CPU utilization: 0%
.
.
.
```

show processes cpu platform monitor

To displays information about the CPU utilization of the IOS-XE processes, use the **show processes cpu platform monitor** command in privileged EXEC mode.

show processes cpu platform monitor location switch {*switch-number* | **active** | **standby**} {**0** | **F0** | **R0**}

Syntax Description

location	Displays information about the Field Replaceable Unit (FRU) location.
switch	Specifies the switch.
switch-number	Switch number.
active	Specifies the active instance.
standby	Specifies the standby instance.
0	Specifies the shared port adapter (SPA) interface processor slot 0.
F0	Specifies the Embedded Service Processor (ESP) slot 0.
R0	Specifies the Route Processor (RP) slot 0.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

The output of the **show platform software process slot switch** and **show processes cpu platform monitor location** commands display the output of the Linux **top** command. The output of these commands display Free memory and Used memory as displayed by the Linux **top** command. The values displayed for the Free memory and Used memory by these commands do not match the values displayed by the output of other platform-memory related CLIs.

Examples

The following is sample output from the **show processes cpu monitor location switch active R0** command:

```
Switch# show processes cpu platform monitor location switch active R0

top - 00:04:21 up 1 day, 11:22,  0 users,  load average: 0.42, 0.60, 0.78
Tasks: 312 total,   4 running, 308 sleeping,   0 stopped,   0 zombie
Cpu(s):  7.4%us,  3.3%sy,  0.0%ni, 89.2%id,  0.0%wa,  0.0%hi,  0.1%si,  0.0%st
Mem:   3976844k total,  3956928k used,    19916k free,   419312k buffers
Swap:        0k total,        0k used,        0k free,  1947036k cached

  PID USER      PR  NI  VIRT  RES  SHR S %CPU %MEM    TIME+  COMMAND
 6294 root      20   0  3448 1368  912 R    9  0.0   0:00.07 top
17546 root      20   0 2044m 244m  79m S    7  6.3 187:02.07 fed main event
30276 root      20   0  171m  42m  33m S    7  1.1 125:15.54 repm
   16 root      20   0     0    0    0 S    5  0.0  22:07.92 rcuc/2
   21 root      20   0     0    0    0 R    5  0.0  22:13.24 rcuc/3
```

```
18662 root      20   0 1806m 678m 263m R    5 17.5 215:47.59 linux_iosd-imag
   11 root      20   0     0    0    0 S    4  0.0  21:37.41 rcuc/1
10333 root      20   0  6420 3916 1492 S    4  0.1   4:47.03 btrace_rotate.s
   10 root      20   0     0    0    0 S    2  0.0   0:58.13 rcuc/0
 6304 root      20   0   776   12    0 R    2  0.0   0:00.01 ls
17835 root      20   0  935m  74m  63m S    2  1.9  82:34.07 sif_mgr
    1 root      20   0  8440 4740 2184 S    0  0.1   0:09.52 systemd
    2 root      20   0     0    0    0 S    0  0.0   0:00.00 kthreadd
    3 root      20   0     0    0    0 S    0  0.0   0:02.86 ksoftirqd/0
    5 root       0 -20     0    0    0 S    0  0.0   0:00.00 kworker/0:0H
    7 root      RT   0     0    0    0 S    0  0.0   0:01.44 migration/0
```

Related Commands

Command	Description
show platform software process slot switch	Displays platform software process switch information.

show processes memory

To display the amount of memory used by each system process, use the **show processes memory** command in privileged EXEC mode.

show processes memory [{ *process-id* | **sorted** [{ **allocated** | **getbufs** | **holding** }] }]

Syntax Description

process-id	(Optional) Process ID (PID) of a specific process. When you specify a process ID, only details for the specified process will be shown.
sorted	(Optional) Displays memory data sorted by the Allocated, Get Buffers, or Holding column. If the **sorted** keyword is used by itself, data is sorted by the Holding column by default.
allocated	(Optional) Displays memory data sorted by the Allocated column.
getbufs	(Optional) Displays memory data sorted by the Getbufs (Get Buffers) column.
holding	(Optional) Displays memory data sorted by the Holding column. This keyword is the default.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

The **show processes memory** command and the **show processes memory sorted** command displays a summary of total, used, and free memory, followed by a list of processes and their memory impact.

If the standard **show processes memory** *process-id* command is used, processes are sorted by their PID. If the **show processes memory sorted** command is used, the default sorting is by the Holding value.

Note Holding memory of a particular process can be allocated by other processes also, and so it can be greater than the allocated memory.

The following is sample output from the **show processes memory** command:

```
Device# show processes memory

Processor Pool Total:   25954228 Used:    8368640 Free:   17585588
 PID TTY  Allocated      Freed    Holding    Getbufs    Retbufs Process
   0   0    8629528     689900    6751716          0          0 *Init*
   0   0      24048      12928      24048          0          0 *Sched*
   0   0        260        328         68     350080          0 *Dead*
   1   0          0          0      12928          0          0 Chunk Manager
   2   0        192        192       6928          0          0 Load Meter
   3   0     214664        304     227288          0          0 Exec
   4   0          0          0      12928          0          0 Check heaps
   5   0          0          0      12928          0          0 Pool Manager
   6   0        192        192      12928          0          0 Timers
   7   0        192        192      12928          0          0 Serial Backgroun
```

```
  8   0        192        192      12928          0          0 AAA high-capacit
  9   0          0          0      24928          0          0 Policy Manager
 10   0          0          0      12928          0          0 ARP Input
 11   0        192        192      12928          0          0 DDR Timers
 12   0          0          0      12928          0          0 Entity MIB API
 13   0          0          0      12928          0          0 MPLS HC Counter
 14   0          0          0      12928          0          0 SERIAL A'detect
.
.
.
 78   0          0          0      12992          0          0 DHCPD Timer
 79   0        160          0      13088          0          0 DHCPD Database
                                 8329440 Total
```

The table below describes the significant fields shown in the display.

Table 12: show processes memory Field Descriptions

Field	Description
Processor Pool Total	Total amount of memory, in kilobytes (KB), held for the Processor memory pool.
Used	Total amount of used memory, in KB, in the Processor memory pool.
Free	Total amount of free memory, in KB, in the Processor memory pool.
PID	Process ID.
TTY	Terminal that controls the process.
Allocated	Bytes of memory allocated by the process.
Freed	Bytes of memory freed by the process, regardless of who originally allocated it.
Holding	Amount of memory, in KB, currently allocated to the process. This includes memory allocated by the process and assigned to the process.
Getbufs	Number of times the process has requested a packet buffer.
Retbufs	Number of times the process has relinquished a packet buffer.
Process	Process name.
Init	System initialization process.
Sched	The scheduler process.
Dead	Processes as a group that are now dead.
<value> Total	Total amount of memory, in KB, held by all processes (sum of the “Holding” column).

The following is sample output from the **show processes memory** command when the **sorted** keyword is used. In this case, the output is sorted by the Holding column, from largest to smallest.

```
Device# show processes memory sorted

Processor Pool Total:   25954228 Used:    8371280 Free:   17582948
 PID TTY  Allocated      Freed    Holding    Getbufs    Retbufs Process
   0   0    8629528     689900    6751716          0          0 *Init*
```

```
  3   0     217304        304     229928          0          0 Exec
 53   0     109248        192      96064          0          0 DHCPD Receive
 56   0          0          0      32928          0          0 COPS
 19   0      39048          0      25192          0          0 Net Background
 42   0          0          0      24960          0          0 L2X Data Daemon
 58   0        192        192      24928          0          0 X.25 Background
 43   0        192        192      24928          0          0 PPP IP Route
 49   0          0          0      24928          0          0 TCP Protocols
 48   0          0          0      24928          0          0 TCP Timer
 17   0        192        192      24928          0          0 XML Proxy Client
  9   0          0          0      24928          0          0 Policy Manager
 40   0          0          0      24928          0          0 L2X SSS manager
 29   0          0          0      24928          0          0 IP Input
 44   0        192        192      24928          0          0 PPP IPCP
 32   0        192        192      24928          0          0 PPP Hooks
 34   0          0          0      24928          0          0 SSS Manager
 41   0        192        192      24928          0          0 L2TP mgmt daemon
 16   0        192        192      24928          0          0 Dialer event
 35   0          0          0      24928          0          0 SSS Test Client
--More--
```

The following is sample output from the **show processes memory** command when a process ID (*process-id*) is specified:

```
Device# show processes memory 1

Process ID: 1
Process Name: Chunk Manager
Total Memory Held: 8428 bytes
Processor memory holding = 8428 bytes
pc = 0x60790654, size =      6044, count =    1
pc = 0x607A5084, size =      1544, count =    1
pc = 0x6076DBC4, size =       652, count =    1
pc = 0x6076FF18, size =       188, count =    1
I/O memory holding = 0 bytes

Device# show processes memory 2

Process ID: 2
Process Name: Load Meter
Total Memory Held: 3884 bytes
Processor memory holding = 3884 bytes
pc = 0x60790654, size =      3044, count =    1
pc = 0x6076DBC4, size =       652, count =    1
pc = 0x6076FF18, size =       188, count =    1
I/O memory holding = 0 bytes
```

Related Commands

Command	Description
show memory	Displays statistics about memory, including memory-free pool statistics.
show processes	Displays information about the active processes.

show processes memory platform

To display memory usage for each Cisco IOS XE process, use the **show processes memory platform** command in privileged EXEC mode.

show processes memory platform [[**detailed** { **name** *process-name* | **process-id** *process-ID* } [**location** | **maps** [**location**] | **smaps** [**location**]] | **location** | **sorted** [**location**]] { **active** | **standby** } { **0** | **F0** | **R0** } | **accounting**]

Syntax Description

accounting	(Optional) Displays the top memory allocators for each Cisco IOS XE process.
detailed	(Optional) Displays detailed memory information for a specified Cisco IOS XE process.
name *process-name*	(Optional) Displays the Cisco IOS XE process name. Enter the process name.
process-id *process-ID*	(Optional) Displayss the Cisco IOS XE process ID. Enter the process ID.
location	(Optional) Displays information about the Field Replaceable Unit (FRU) location.
maps	(Optional) Displays memory maps of a process.
smaps	(Optional) Displays static memory maps of a process.
sorted	(Optional) Displays the sorted output based on the Resident Set Size (RSS) memory used by Cisco IOS XE process.
active	Displays information about the active instance of the device.
standby	Displays information about the standby instance of the device.
0	Displays information about Shared Port Adapter (SPA)-Inter-Processor slot 0.
F0	Displays information about Embedded Service Processor (ESP) slot 0.
R0	Displays information about Route Processor (RP) slot 0.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Release	Modification
Cisco IOS XE Gibraltar 16.10.1	This command was modified. The keyword **accounting** was added. The **Total** column was deleted from the output.

Examples

The following is a sample output from the **show processes memory platform** command:

```
device# show processes memory platform

System memory: 3976852K total, 2761580K used, 1215272K free,
Lowest: 1215272K
   Pid    Text      Data   Stack   Dynamic       RSS                  Name
--------------------------------------------------------------------------------
     1    1246      4400     132      1308      4400               systemd
    96     233      2796     132       132      2796       systemd-journal
   105     284      1796     132       176      1796         systemd-udevd
   707      52      2660     132       172      2660            in.telnetd
   744     968      3264     132      1700      3264             brelay.sh
   835      52      2660     132       172      2660            in.telnetd
   863     968      3264     132      1700      3264             brelay.sh
   928     968      3996     132      2312      3996          reflector.sh
   933     968      3976     132      2312      3976           droputil.sh
   934     968      2140     132       528      2140                oom.sh
   936     173       936     132       132       936               xinetd
   945     968      1472     132       132      1472           libvirtd.sh
   947     592     43164     132      3096     43164                 repm
   954      45       932     132       132       932              rpcbind
   986     482      3476     132       132      3476              libvirtd
   988      66       940     132       132       940             rpc.statd
   993     968       928     132       132       928       boothelper_evt.
  1017      21       640     132       132       640           inotifywait
  1089     102      1200     132       132      1200            rpc.mountd
  1328       9      2940     132       148      2940                 rotee
  1353      39       532     132       132       532                 sleep
!
!
!
```

The following is a sample output from the **show processes memory platform accounting** command:

```
device# show processes memory platform accounting
Hourly Stats

  process                 callsite_ID(bytes)  max_diff_bytes   callsite_ID(calls)
max_diff_calls   tracekey                                    timestamp(UTC)

------------------------------------------------------------------------------------------------------------------------

  smand_rp_0              3624155137          172389           3624155138          50
         1#a3e0e4361082c702e5bf1afbd90e6313       2018-09-04 14:23
  linux_iosd-imag_rp_0    3626295305          49188            3624155138          12
         1#545420bd869d25eb5ab826182ee5d9ce       2018-09-04 12:03
  btman_rp_0              3624737792          17080            2953915394          64
         1#d6888bd9564a3c4fcf049c31ba07a036       2018-09-04 22:29
  fman_fp_image_fp_0      3624059905          16960            4027402242          298
         1#921ba4d9df5b0a6e946a3b270bd6592d       2018-09-04 22:55
```

```
  fed_main_event_fp_0     3626295305          16396            4027402242          32
         1#27083f7bf3985d892505806cae2bfb0d       2018-09-04 12:03
  dbm_rp_0                3626295305          16396            4027402242          3
         1#2b878f802bd7703c5298d37e7a4e8ac3       2018-09-04 12:02
  tamd_proc_rp_0          3895208962          12632            3624667171          7
         1#5b0ed8f88ef5f873abcaf8a744037a44       2018-09-04 18:47
  btman_fp_0              3624233985          12288            3624737792          9
         1#d6888bd9564a3c4fcf049c31ba07a036       2018-09-04 15:23
  sif_mgr_rp_0            3624059907          8216             4027402242          4
         1#de2a951a8a7bae83ca2c04c56810eb72       2018-09-04 14:21
  python2.7_fp_0          2954560513          8000             2954560513          1
                                                               2018-09-04 12:16
  nginx_rp_0              3357041665          4608             4027402242          4
         1#32e56bb09e0509c5fa5ac32093631206       2018-09-04 16:18
  rotee_FRU_SLOT_NUM      3624667169          4097             3624667169          1
         1#ff68e5150a698cd59fa259828614995b       2018-09-04 10:43
  hman_rp_0               3893617664          1488             3893617664          1
         1#1c4aadada30083c5d6f66dc8ca8cd4cb       2018-09-04 10:42
  tams_proc_rp_0          3895096320          1024             3895096320          1
         1#a36a3afa9884c8dc4d40af1e80cacd26       2018-09-04 10:42
  stack_mgr_rp_0          4027402242          904              4027402242          4
         1#ca902eab11a18ab056b16554f49871e8       2018-09-04 14:21
  sessmgrd_rp_0           3491618816          848              3624155138          8
         1#720239fc8bddcabc059768c55a1640ed       2018-09-04 14:32
  psd_rp_0                4027402242          696              4027402242          4
         1#98cf04e0ddd78c2400b3ca3b5f298594       2018-09-04 14:21
  lman_rp_0               4027402242          592              4027402242          4
         1#dc8ed9e428d36477a617d56c51d5caf2       2018-09-04 14:21
  bt_logger_rp_0          4027402242          592              4027402242          4
         1#ba882be1ed783e72575e97cc0908e0e8       2018-09-04 14:21
  repm_rp_0               4027402242          592              4027402242          4
         1#ae461a05430efa767427f2ab40aba372       2018-09-04 14:21
  fman_rp_rp_0            4027402242          592              4027402242          3
         1#09def9cc1390911be9e3a7a9c89f4cf7       2018-09-04 12:16
  epc_ws_liaison_fp_0     4027402242          592              4027402242          4
         1#41451626dcce9d1478b22e2ebbbdcf54       2018-09-04 14:21
  cli_agent_rp_0          4027402242          592              4027402242          4
         1#92d3882919daf3a9e210807c61de0552       2018-09-04 14:21
  cmm_rp_0                4027402242          592              4027402242          4
         1#15ed1d79e96874b1e0621c42c3de6166       2018-09-04 14:21
  tms_rp_0                4027402242          352              4027402242          4
         1#5c6efe2e21f15aa16318576d3ec9153c       2018-09-04 12:03
  plogd_rp_0              4027402242          48               4027402242          1
         1#2d7f2ef57206f4fa763d7f2f5400bf1b       2018-09-04 10:43
  cmand_rp_0              3624155137          17               3624155137          1
         1#f1f41f61c44d73014023db5d8a46ecf5       2018-09-04 10:42
!
!
!
```

The following is a sample output from the **show processes memory platform sorted** command:

```
device# show processes memory platform sorted
System memory: 3976852K total, 2762884K used, 1213968K free,
Lowest: 1213968K

   Pid      Text      Data    Stack   Dynamic       RSS                Name
--------------------------------------------------------------------------
  7885    149848     684864    136        80    684864     linux_iosd-imag
  9655      3787     264964    136     18004    264964                 wcm
  17261     324      248588    132    103908    248588      fed main event
  4268      391      102084    136      5596    102084           cli_agent
```

```
  4856      357       93388    132      3680     93388                dbm
17067     1087       77912    136      1796     77912        platform_mgr
!
!
!
```

```
device# show processes memory platform sorted location switch active R0
System memory: 3976852K total, 2762884K used, 1213968K free,
Lowest: 1213968K

   Pid      Text      Data    Stack   Dynamic       RSS                Name
--------------------------------------------------------------------------------
  7885    149848     684864    136        80    684864     linux_iosd-imag
  9655      3787     264964    136     18004    264964                 wcm
  17261     324      248588    132    103908    248588       fed main event
  4268      391      102084    136      5596    102084            cli_agent
  4856      357       93388    132      3680     93388                dbm
17067     1087       77912    136      1796     77912        platform_mgr
!
!
!
```

show processes platform

To display information about the IOS-XE processes running on a platform, use the **show processes platform** command in privileged EXEC mode.

show processes platform [**detailed name** *process-name*] [**location switch** {*switch-number* | **active** | **standby**} {**0** | **F0** | **FP active** | **R0**}]

detailed	(Optional) Displays detailed information of the specified IOS-XE process.
name *process-name*	(Optional) Specifies the process name.
location	(Optional) Specifies the Field Replaceable Unit (FRU) location.
switch *switch-number*	(Optional) Displays information about the switch.
active	(Optional) Specifies the active instance of the device.
standby	(Optional) Specifies standby instance of the device.
0	Specifies the Shared Port Adapter (SPA) Interface Processor slot 0.
F0	Specifies the Embedded Service Processor (ESP) slot 0.
FP active	Specifies the active instance in the Embedded Service Processor (ESP).
R0	Specifies the Route Processor (RP) slot 0.

Command History

Release	Modification
Cisco IOS XE Gibraltar 16.10.1	This command was introduced.

Command Modes

Privileged EXEC(#)

Examples:

The following is sample output from the **show processes platform** command:

```
Device# show processes platform

CPU utilization for five seconds: 1%, one minute: 2%, five minutes: 1%
   Pid    PPid  Status        Size  Name
-----------------------------------------------------------
     1       0  S             4876  systemd
     2       0  S                0  kthreadd
     3       2  S                0  ksoftirqd/0
     5       2  S                0  kworker/0:0H
     7       2  S                0  rcu_sched
     8       2  S                0  rcu_bh
     9       2  S                0  migration/0
    10       2  S                0  watchdog/0
    11       2  S                0  watchdog/1
    12       2  S                0  migration/1
```

```
 13       2  S                0  ksoftirqd/1
 15       2  S                0  kworker/1:0H
 16       2  S                0  watchdog/2
 17       2  S                0  migration/2
 18       2  S                0  ksoftirqd/2
 20       2  S                0  kworker/2:0H
 21       2  S                0  watchdog/3
 22       2  S                0  migration/3
 23       2  S                0  ksoftirqd/3
 24       2  S                0  kworker/3:0
 25       2  S                0  kworker/3:0H
 26       2  S                0  kdevtmpfs
 27       2  S                0  netns
 28       2  S                0  perf
 29       2  S                0  khungtaskd
 30       2  S                0  writeback
 31       2  S                0  ksmd
 32       2  S                0  khugepaged
 33       2  S                0  crypto
 34       2  S                0  bioset
 35       2  S                0  kblockd
 36       2  S                0  ata_sff
 37       2  S                0  rpciod
 63       2  S                0  kswapd0
 64       2  S                0  vmstat
 65       2  S                0  fsnotify_mark
 66       2  S                0  nfsiod
 74       2  S                0  bioset
 75       2  S                0  bioset
 76       2  S                0  bioset
 77       2  S                0  bioset
 78       2  S                0  bioset
 79       2  S                0  bioset
 80       2  S                0  bioset
 81       2  S                0  bioset
 82       2  S                0  bioset
 83       2  S                0  bioset
 84       2  S                0  bioset
 85       2  S                0  bioset
 86       2  S                0  bioset
 87       2  S                0  bioset
 88       2  S                0  bioset
 89       2  S                0  bioset
 90       2  S                0  bioset
 91       2  S                0  bioset
 92       2  S                0  bioset
 93       2  S                0  bioset
 94       2  S                0  bioset
 95       2  S                0  bioset
 96       2  S                0  bioset
 97       2  S                0  bioset
100       2  S                0  ipv6_addrconf
102       2  S                0  deferwq
```

The table below describes the significant fields shown in the displays.

Table 13: show processes platform Field Descriptions

Field	Description
Pid	Displays the process ID.

Field	Description
PPid	Displays the process ID of the parent process.
Status	Displays the process status in human readable form.
Size	Displays the Resident Set Size (in kilobytes (KB)) that shows how much memory is allocated to that process in the RAM.
Name	Displays the command name associated with the process. Different threads in the same process may have different command values.

show power

To display information of the power supplies and the cumulative power allocation of various port priorities configured on a device, use the **show power** command in privileged EXEC mode.

show power [{**detail** | **inline** | | **module**}]

Syntax Description

detail	(Optional) Displays detailed information of the cumulative power allocation and Power over Ethernet (PoE) port priorities configured on a device.
inline	(Optional) Displays the inline power status.
module	(Optional) Displays the status of the power supply modules.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.
Cisco IOS XE Amsterdam 17.3.1	The command output was enhanced to display information of the power allocated to the PoE port priorities.

Examples

The following shows a sample output of the **show power** command:

```
Device# show power

Power                                                    Fan States
Supply  Model No              Type  Capacity  Status        1     2
------  --------------------  ----  --------  -----------   ----- -----
PS1     C9400-PWR-3200AC       ac    1570 W    active       good  good
PS2     C9400-PWR-3200AC       ac    1570 W    active       good  good
PS3     C9400-PWR-3200AC       ac    1570 W    active       good  good
PS4     C9400-PWR-3200AC       ac    1570 W    active       good  good

Power Summary          Maximum
 (in Watts)    Used    Available
-------------  ------  ---------
System Power   3070    3070
Inline Power   480     3210
-------------  ------  ---------
Total          3550    6280

PoE          PoE Shutdown
Priority     Allocation(Watts)     Threshold(Watts)
----------   --------------------  ----------------------------
Priority-0    240                  1545
Priority-1    30                   1575
Priority-2    0                    1575
Priority-3    0                    1575
Priority-4    0                    1575
```

```
Priority-5     0                    1575
Priority-6     0                    1575
Priority-7     0                    1575
```

Table 14: show power Significant Field Descriptions

Field	Description
PoE Shutdown Allocation(Watts)	Power allocated to the PoE port priorities.
Threshold(Watts)	Minimum power required for the PoE ports to be up. • Priority-7: Minimum power required for priority 7 to priority 0 ports to be up • Priority-6: Minimum power required for priority 6 to priority 0 ports to be up • Priority-5: Minimum power required for priority 5 to priority 0 ports to be up • Priority-4: Minimum power required for priority 4 to priority 0 ports to be up • Priority-3: Minimum power required for priority 3 to priority 0 ports to be up • Priority-2: Minimum power required for priority 2 to priority 0 ports to be up • Priority-1: Minimum power required for priority 1 to priority 0 ports to be up • Priority-0: Minimum power required for priority 0 ports to be up

PoE auto shutdown cutoff power is an addition of the current system power (not maximum) and power allocated to different PoE ports. For example:

- Priority 0 cutoff power = system power + minimum power required for priority 0 ports to be up, which is, 3070 + 60 = 3130.

  The hardware registers are programmed using scaling factor as 15, and so the closest multiple of 15 is taken. As the closest multiple of 15 for 3130 is 3135, 3135 is programmed as the cutoff power for priority 0 ports.

- Priority 1 cutoff power = system power + minimum power required for priority 0 ports to be up + minimum power required for priority 1 ports to be up, which is, 3070 + 60 + 60 = 3190.

  As the closest multiple of 15 for 3190 is 3195, 3195 is programmed as the cutoff power for priority 1 ports.

- Priority 7 cutoff power = system power + minimum power required for priority 0 ports to be up + minimum power required for priority 1 ports to be up + minimum power required for priority 2 ports to be up + minimum power required for priority 3 ports to be up + minimum power required for priority 4 ports to be up + minimum power required for priority 5 ports to

be up + minimum power required for priority 6 ports to be up + minimum power required for priority 7 ports to be up, which is, 3070 + 60 + 60 + 60 + 60 + 60 + 60 + 60 + 60 = 3550.

As the closest multiple of 15 for 3550 is 3555, 3555 is programmed as the cutoff power for priority 7 ports.

If a power supply is removed, the hardware identifies which ports to shutdown based on the power requirements.

show power inline priority

To display the Power over Ethernet (PoE) port states and priorities of the administration and operating modes configured on an interface, use the **show power inline priority** command in privileged EXEC mode.

show power inline priority *interface-id*

Syntax Description

interface-id	(Optional) Specifies the ID of the physical interface.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.
Cisco IOS XE Amsterdam 17.3.1	The command output was enhanced to display information of the power allocated to the PoE port priorities.

Examples

The following is a sample output of the **show power inline priority** command. The table that follows describes the output fields.

```
Device> show power inline priority gigabitEthernet 1/0/1

Power inline auto shutdown: Enabled
Interface  Admin    Oper        Admin      Oper
           State    State       Priority   Priority
---------- ------   ----------  ---------- --------

Gi1/0/1    static   on           5          0

Priority   Power Per
     Priority(Watts)
---------- --------------

  0         0
  1         1440
  2         1440
  3         2880
  4         0
  5         2880
  6         0
  7         0
```

Table 15: show power inline priority Field Descriptions

Field	Description
Admin State	Administration mode: auto, off, static.

Field	Description
Oper State	Operating mode: • on: The powered device is detected, and power is applied. • off: No PoE is applied. • faulty: Device detection or a powered device is in a faulty state. • power-deny: A powered device is detected, but no PoE is available, or the maximum wattage exceeds the detected powered-device maximum.
Admin Priotity	Administration priority level: 0 to 7.
Oper Priotity	Operating priority level: 0 to 7.
Power Per Priority(Watts)	Power allocated to the PoE port priorities.

In the above example, Gi1/0/1 has administration state configured as static with priority as 5. The internal priority programmed in the hardware is 0.

show power inline detail

To display a detailed information on the Power over Ethernet (PoE) status for the specified interface, use the **show power inline** *interface-id* **detail** command in privileged EXEC mode.

show power inline [*interface-id*] **detail**

Syntax Description

interface-id	(Optional) ID of the physical interface.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.
Cisco IOS XE Gibraltar 16.11.1	This command was modified. The command output was enhanced to display information on the signal and spare pairs and also the physical class assigned by the power sourcing equipment (PSE) to the powered devices (PD).

Examples

This following is a sample output from the **show power inline detail** command on a Single Signature device:

```
Device# show power inline gigabitethernet 1/0/29 detail

Interface: Gi1/0/29
Inline Power Mode: auto
Operational status (Alt-A,B): on,on
Device Detected: yes
Device Type: Ieee PD
Connection Check: SS
IEEE Class (Alt-A,B): 5
Physical Assigned Class (Alt-A,B): 5
Discovery mechanism used/configured: Ieee and Cisco
Police: off

Power Allocated
 Admin Value: 60.0
Power drawn from the source: 30.0
Power available to the device: 30.0
Allocated Power (Alt-A,B): 30.0

Actual consumption
Measured at the port(watts) (Alt-A,B): 10.5
Maximum Power drawn by the device since powered on: 10.5

Absent Counter: 0
Over Current Counter: 0
Short Current Counter: 0
Invalid Signature Counter: 0
Power Denied Counter: 0
```

```
Power Negotiation Used: IEEE 802.3bt LLDP
LLDP Power Negotiation       --Sent to PD--      --Rcvd from PD--
Power Type:                  Type 2 PSE           Type 2 PD
Power Source:                Primary              PSE
Power Priority:              low                  critical
PD 4PID:                     0                    1
Requested Power(W):          25.5                 25.5
Allocated Power(W):          25.5                 40.0
Requested Power ModeA(W):    0.0                  6.5
Allocated Power ModeA(W):    0.0                  25.5
Requested Power ModeB(W):    0.0                  13.0
Allocated Power ModeB(W):    0.0                  25.5
PSE Powering Status:         4 pair SS PD         Ignore
PD Powering Status:          Ignore               SS PD
PSE Power Pair ext:          Both Alternatives    Both Alternatives
DS Class Mode A ext:         SS PD                Class 2
DS Class Mode B ext:         SS PD                Class 4
SS Class ext:                Class 4              Class 5
PSE Type ext:                Type 3 PSE           Type 3 SS PD
PSE Max Avail Power:         51.0                 51.2
PSE Auto Class Supp:         No                   No
PD Auto Class Req:           No                   No
PD Power Down Req:           No                   No
PD Power Down Time(sec):     0                    70

Four-Pair PoE Supported: Yes
Spare Pair Power Enabled: Yes
Four-Pair PD Architecture: Shared
```

The following is sample output from the **show power inline gigabitEthernet** command where a DS PD sends a request to lower the power allocated by the PSE:

```
Device# show power inline gigabitethernet 4/0/48 detail

Interface: Gi4/0/48
Inline Power Mode: auto
Operational status (Alt-A,B): on,on
Device Detected: yes
Device Type: Ieee PD
Connection Check: DS
IEEE Class (Alt-A,B): 4,4
Physical Assigned Class (Alt-A,B): 4,4
Discovery mechanism used/configured: Ieee and Cisco
Police: off

Power Allocated
Admin Value: 60.0
Power drawn from the source: 60.0
Power available to the device: 60.0
Allocated Power (Alt-A,B): 30.0,30.0
Actual consumption
Measured at the port(watts) (Alt-A,B): 10.7,10.7
Maximum Power drawn by the device since powered on: 21.4
Absent Counter: 0
Over Current Counter: 0
Short Current Counter: 0
Invalid Signature Counter: 0
Power Denied Counter: 0

Power Negotiation Used: None
LLDP Power Negotiation       --Sent to PD--      --Rcvd from PD--
Power Type:                  -                    -
```

```
Power Source:               -                   -
Power Priority:             -                   -
Requested Power(W):         -                   -
Allocated Power(W):         -                   -

Four-Pair PoE Supported: Yes
Spare Pair Power Enabled: Yes
Four-Pair PD Architecture: Independent
```

show power inline upoe-plus

To display the Power over Ethernet (PoE) status for the specified 802.3bt-compliant port, or all the 802.3bt-compliant ports, use the **show power inline upoe-plus** command in EXEC mode.

show power inline upoe-plus [*interface-id*]

Syntax Description

interface-id	(Optional) ID of the physical interface.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Gibraltar 16.11.1	This command was introduced.

Examples

This is an example of an output from the **show power inline upoe-plus** command. The table that follows describes the output fields.

```
Device#show power inline upoe-plus
Available:4250.0(w)  Used:1031.2(w)  Remaining:3218.8(w)

Codes: DS - Dual Signature device, SS - Single Signature device
       SP - Single Pairset device

Interface   Admin  Type Oper-State      Power(Watts)    Class   Device Name
            State       Alt-A,B     Allocated Utilized  Alt-A,B
----------- ------ ---- ----------  --------- --------- ------- -----------
Gi1/0/16    auto   SS   on,on         60.0      10.5      8       Ieee PD
Gi1/0/21    auto   DS   on,on         60.0      10.5      5,5     Ieee PD
```

This is an example of an output from the **show power inline upoe-plus** *interface-id* command on a switch port:

```
Device> show power inline upoe-plus gigabitEthernet 1/0/23

Codes: DS - Dual Signature device, SS - Single Signature device
       SP - Single Pairset device

Interface   Admin  Type Oper-State      Power(Watts)    Class   Device Name
            State       Alt-A,B     Allocated Utilized  Alt-A,B
----------- ------ ---- ----------  --------- --------- ------- -----------
Gi1/0/4     auto   SP   on            4.0       3.8       1       Ieee PD
Gi1/0/15    auto   SS   on,on         60.0      10.5      6       Ieee PD
Gi1/0/23    auto   DS   on,on         45.4      26.9      3,4     Ieee PD
```

Table 16: show power inline upoe-plus Field Descriptions

Field	Description
Type	Type of powered device: Single Pairset device or Single Signature device or Dual Signature device
Oper-State	The state of each signal and spare pair on the port.

Field	Description
Power Allocated	Power allocated to the port, in Watts
Power Utilized	Power consumed by the powered device on the port.
Class Alt-A, B	Signal, Spare-pair respectively
Device Name	Name of the powered device as advertised by CDP.

show system mtu

To display the global maximum transmission unit (MTU) or maximum packet size set for the switch, use the **show system mtu** command in privileged EXEC mode.

show system mtu

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

For information about the MTU values and the stack configurations that affect the MTU values, see the **system mtu** command.

Examples

This is an example of output from the **show system mtu** command:

```
Device# show system mtu
Global Ethernet MTU is 1500 bytes.
```

show tech-support

To automatically run **show** commands that display system information, use the **show tech-support** command in the privilege EXEC mode.

show tech-support
[**cef** | **cft** | **eigrp** | **evc** | **fnf** | | **ipc** | **ipmulticast** | **ipsec** | **mfib** | **nat** | **nbar** | **onep** | **ospf** | **page** | **password** | **rsvp** | **subscriber** | **vrrp** | **wccp**

Syntax Description

cef	(Optional) Displays CEF related information.
cft	(Optional) Displays CFT related information.
eigrp	(Optional) Displays EIGRP related information.
evc	(Optional) Displays EVC related information.
fnf	(Optional) Displays flexible netflow related information.
ipc	(Optional) Displays IPC related information.
ipmulticast	(Optional) Displays IP multicast related information.
ipsec	(Optional) Displays IPSEC related information.
mfib	(Optional) Displays MFIB related information.
nat	(Optional) Displays NAT related information.
nbar	(Optional) Displays NBAR related information.
onep	(Optional) Displays ONEP related information.
ospf	(Optional) Displays OSPF related information.
page	(Optional) Displays the command output on a single page at a time. Use the Return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl-C** keys to stop the command output.
password	(Optional) Leaves passwords and other security information in the output. If not used, passwords and other security-sensitive information in the output are replaced with the label "<removed>".
rsvp	(Optional) Displays IP RSVP related information.
subscriber	(Optional) Displays subscriber related information.
vrrp	(Optional) Displays VRRP related information.
wccp	(Optional) Displays WCCP related information.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was implemented.

Usage Guidelines

The output from the **show tech-support** command is very long. To better manage this output, you can redirect the output to a file (for example, **show tech-support** > *filename*) in the local writable storage file system or the remote file system. Redirecting the output to a file also makes sending the output to your Cisco Technical Assistance Center (TAC) representative easier.

You can use one of the following redirection methods:

- > *filename* - Redirects the output to a file.
- >> *filename* - Redirects the output to a file in append mode.

show tech-support bgp

To automatically run show commands that display BGP related system information, use the **show tech-support bgp** command in the privileged EXEC mode.

show tech-support bgp [**address-family** {**all** | **ipv4** [**flowspec** | **multicast** | **unicast** | [**mdt** | **mvpn**] {**all** | **vrf** *vrf-instance-name*}] |**ipv6** [**flowspec** | **multicast** | **mvpn** {**all** | **vrf** *vrf-instance-name*} | **unicast**] | **l2vpn** [**evpn** | **vpls**] | **link-state** [**link-state**] | [**nsap** | **rtfilter**] [**unicast**] | [**vpnv4** | **vpnv6**] [**flowspec** | **multicast** | **unicast**] {**all** | **vrf** *vrf-instance-name*} }] [**detail**]

Syntax Description

address-family	(Optional) Displays the output for a specified address family.
address-family all	(Optional) Displays the output for all address families.
ipv4	(Optional) Displays the output for IPv4 address family.
ipv6	(Optional) Displays the output for IPv6 address family.
l2vpn	(Optional) Displays the output for L2VPN address family.
link-state	(Optional) Displays the output for Link State address family.
nsap	(Optional) Displays the output for NSAP address family.
rtfilter	(Optional) Displays the output for RT Filter address family.
vpnv4	(Optional) Displays the output for VPNv4 address family.
vpnv6	(Optional) Displays the output for VPNv6 address family.
flowspec	(Optional) Displays the flowspec related information for an address family.
multicast	(Optional) Displays the multicast related information for an address family.
unicast	(Optional) Displays the unicast related information for an address family.
mdt	(Optional) Displays the Multicast Distribution Tree (MDT) related information for an address family.

mvpn	(Optional) Displays the Multicast VPN (MVPN) related information for an address family.
vrf	Displays the information for a VPN Routing/Forwarding instance.
evpn	(Optional) Displays the Ethernet VPN (EVPN) related information for an address family.
vpls	(Optional) Displays the Virtual Private LAN Services (VPLS) related information for an address family.
vrf-instance-name	Specifies the name of the VPN Routing/Forwarding instance.
all	Displays the information about all VPN NLRIs.
detail	(Optional) Displays the detailed routes information.

Command Modes

User EXEC (>)

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Gibraltar 16.10.1	This command was introduced.

Usage Guidelines

The **show tech-support bgp** command is used to display the outputs of various BGP show commands and log them to the show-tech file. The output from the **show tech-support bgp** command is very long. To better manage this output, you can redirect the output to a file (for example, **show tech-support > filename**) in the local writable storage file system or the remote file system. Redirecting the output to a file also makes sending the output to your Cisco Technical Assistance Center (TAC) representative easier.

You can use one of the following redirection methods:

- > filename - Redirects the output to a file.
- >> filename - Redirects the output to a file in append mode.

The following **show** commands run automatically when the **show tech-support bgp** command is used:

- **show clock**
- **show version**
- **show running-config**
- **show process cpu sorted**
- **show process cpu history**
- **show process memory sorted**

The following **show** commands for a specific address family run automnatically when the **show tech-support bgp address-family***address-family-name address-family-modifier* command is used:

- **show bgp** *address-family-name address-family-modifier* **summary**
- **show bgp** *address-family-name address-family-modifier* **detail**
- **show bgp** *address-family-name address-family-modifier* **internal**
- **show bgp** *address-family-name address-family-modifier* **neighbors**
- **show bgp** *address-family-name address-family-modifier* **update-group**
- **show bgp** *address-family-name address-family-modifier* **replication**
- **show bgp** *address-family-name address-family-modifier* **community**
- **show bgp** *address-family-name address-family-modifier* **dampening dampened-paths**
- **show bgp** *address-family-name address-family-modifier* **dampening flap-statistics**
- **show bgp** *address-family-name address-family-modifier* **dampening parameters**
- **show bgp** *address-family-name address-family-modifier* **injected-paths**
- **show bgp** *address-family-name address-family-modifier* **cluster-ids**
- **show bgp** *address-family-name address-family-modifier* **cluster-ids internal**
- **show bgp** *address-family-name address-family-modifier* **peer-group**
- **show bgp** *address-family-name address-family-modifier* **pending-prefixes**
- **show bgp** *address-family-name address-family-modifier* **rib-failure**

In addition to the above commands, the following segment routing specific **show** commands also run when the **show tech-support bgp** command is used:

- **show bgp all binding-sid**
- **show segment-routing client**
- **show segment-routing mpls state**
- **show segment-routing mpls gb**
- **show segment-routing mpls connected-prefix-sid-map protocol ipv4**
- **show segment-routing mpls connected-prefix-sid-map protocol backup ipv4**
- **show mpls traffic-eng tunnel auto-tunnel client bgp**

show tech-support diagnostic

To display diagnostic information for technical support, use the **show tech-support diagnostic** command in privileged EXEC mode.

show tech-support diagnostic

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Gibraltar 16.10.1	This command was introduced.

Usage Guidelines

The output of this command is very long. To better manage this output, you can redirect the output to a file (for example, **show tech-support diagnostic** > **flash:***filename*) in the local writable storage file system or remote file system.

Note For devices that support stacking, this command is executed on every switch that is up. For devices that do not support stacking, this command is executed only on the active switch.

The output of this command displays the output of the following commands:

Catalyst 9400 switches:

- **show clock**
- **show version**
- **show running-config**
- **show inventory**
- **show post**
- **show diagnostic bootup level**
- **show diagnostic status**
- **show diagnostic content module all**
- **show diagnostic result module all detail**
- **show diagnostic schedule module all**
- **show diagnostic description module [module number] test all**
- **show logging onboard slot [slot number] clilog detail**
- **show logging onboard slot [slot number] counter detail**
- **show logging onboard slot [slot number] environment detail**

- **show logging onboard slot [slot number] message detail**
- **show logging onboard slot [slot number] poe detail**
- **show logging onboard slot [slot number] status**
- **show logging onboard slot [slot number] temperature detail**
- **show logging onboard slot [slot number] uptime detail**
- **show logging onboard slot [slot number] voltage detail**
- **show logging onboard RP [active | standby] voltage detail**
- **show logging onboard RP [active | standby] clilog detail**
- **show logging onboard RP [active | standby] counter detail**
- **show logging onboard RP [active | standby] environment detail**
- **show logging onboard RP [active | standby] message detail**
- **show logging onboard RP [active | standby] poe detail**
- **show logging onboard RP [active | standby] status**
- **show logging onboard RP [active | standby] temperature detail**
- **show logging onboard RP [active | standby] uptime detail**

Catalyst 9400 StackWise Virtual Link (SVL) switches:

- **show clock**
- **show version**
- **show running-config**
- **show inventory**
- **show post**
- **show diagnostic bootup level**
- **show diagnostic status**
- **show diagnostic content switch all**
- **show diagnostic schedule switch all**
- **show diagnostic result switch [switch number] module [module number] detail**
- **show diagnostic description switch [switch number] module [module number] test all**
- **show logging onboard switch [switch number] slot [slot number] clilog detail**
- **show logging onboard switch [switch number] slot [slot number] counter detail**
- **show logging onboard switch [switch number] slot [slot number] environment detail**
- **show logging onboard switch [switch number] slot [slot number] message detail**
- **show logging onboard switch [switch number] slot [slot number] poe detail**

- **show logging onboard switch [switch number] slot [slot number] status**
- **show logging onboard switch [switch number] slot [slot number] temperature detail**
- **show logging onboard switch [switch number] slot [slot number] uptime detail**
- **show logging onboard switch [switch number] slot [slot number] voltage detail**
- **show logging onboard switch [active | standby] RP active voltage detail**
- **show logging onboard switch [active | standby] RP active clilog detail**
- **show logging onboard switch [active | standby] RP active counter detail**
- **show logging onboard switch [active | standby] RP active environment detail**
- **show logging onboard switch [active | standby] RP active message detail**
- **show logging onboard switch [active | standby] RP active poe detail**
- **show logging onboard switch [active | standby] RP activestatus**
- **show logging onboard switch [active | standby] RP active temperature detail**
- **show logging onboard switch [active | standby] RP active uptime detail**

Examples

The following is a sample output from the **show tech-support diagnostic** command:

```
Device# show tech-support diagnostic

.
.
.
------------------ show diagnostic status ------------------


<BU> - Bootup Diagnostics, <HM> - Health Monitoring Diagnostics,

<OD> - OnDemand Diagnostics, <SCH> - Scheduled Diagnostics


====== ================================= ================================ ======
Card   Description                       Current Running Test             Run by
------ --------------------------------- -------------------------------- ------
2      C9400-LC-24XS                     N/A                              N/A


3      C9400-SUP-1                       N/A                              N/A


4      C9400-SUP-1                       N/A                              N/A


6      C9400-LC-48UX                     N/A                              N/A
```

```
====== ================================ ============================== ======


------------------ show post ------------------


Stored system POST messages:


Switch C9407R

--------------


POST: MBIST Tests : Begin

POST: MBIST Tests : End, Status Passed


POST: Module: 3 PHY Loopback: loopback Test: Begin

POST: Module: 3 PHY Loopback: loopback Test: End, Status Passed


POST: Module: 4 PHY Loopback: loopback Test: Begin

POST: Module: 4 PHY Loopback: loopback Test: End, Status Passed


POST: Module: 2 PHY Loopback: loopback Test: Begin

POST: Module: 2 PHY Loopback: loopback Test: End, Status Passed


POST: Module: 6 PHY Loopback: loopback Test: Begin

POST: Module: 6 PHY Loopback: loopback Test: End, Status Passed


------------------ show diagnostic content module all ------------------


module 2:


  Diagnostics test suite attributes:

    M/C/* - Minimal bootup level test / Complete bootup level test / NA

      B/* - Basic ondemand test / NA
```

```
    P/V/* - Per port test / Per device test / NA
    D/N/* - Disruptive test / Non-disruptive test / NA
      S/* - Only applicable to standby unit / NA
      X/* - Not a health monitoring test / NA
      F/* - Fixed monitoring interval test / NA
      E/* - Always enabled monitoring test / NA
      A/I - Monitoring is active / Monitoring is inactive
                                                          Test Interval   Thre-
  ID   Test Name                           Attributes     day hh:mm:ss.ms shold
  ==== ================================== ============   =============== =====
    1) TestGoldPktLoopback -------------> *BPN*X**I      not configured  n/a
    2) TestPhyLoopback -----------------> *BPD*X**I      not configured  n/a
    3) TestThermal ---------------------> *B*N****A      000 00:01:30.00 1
    4) TestScratchRegister -------------> *B*N****A      000 00:01:30.00 5
    5) TestUnusedPortLoopback ----------> *BPN****I      not configured  1
    6) TestPortTxMonitoring ------------> *BPN****A      000 00:01:15.00 1


module 3:


  Diagnostics test suite attributes:
    M/C/* - Minimal bootup level test / Complete bootup level test / NA
      B/* - Basic ondemand test / NA
    P/V/* - Per port test / Per device test / NA
    D/N/* - Disruptive test / Non-disruptive test / NA
      S/* - Only applicable to standby unit / NA
      X/* - Not a health monitoring test / NA
      F/* - Fixed monitoring interval test / NA
      E/* - Always enabled monitoring test / NA
      A/I - Monitoring is active / Monitoring is inactive
.
.
.------------------ show diagnostic description module 1 test all ------------------
```

```
------------------ show logging onboard slot 1 clilog detail ------------------

obfl clilog feature is not supported.


------------------ show logging onboard slot 1 counter detail ------------------

obfl counter feature is not supported.

------------------ show logging onboard slot 1 environment detail ------------------

obfl environment feature is not supported.


------------------ show logging onboard slot 1 message detail ------------------

Line card at slot 1 is not present

------------------ show logging onboard slot 1 poe detail ------------------

Line card at slot 1 is not present


------------------ show logging onboard slot 1 status ------------------

Line card at slot 1 is not present


------------------ show logging onboard slot 1 temperature detail ------------------

Line card at slot 1 is not present
```

```
------------------ show logging onboard slot 1 uptime detail ------------------

Line card at slot 1 is not present

------------------ show logging onboard slot 1 voltage detail ------------------

Line card at slot 1 is not present

------------------ show diagnostic description module 2 test all ------------------

TestGoldPktLoopback :
 The GOLD packet Loopback test verifies the MAC level loopback
 functionality. In this test, a GOLD packet, for which doppler
 provides the support in hardware, is sent. The packet loops back
 at MAC level and is matched against the stored packet. It is a
 non-disruptive test.

TestPhyLoopback :
 The PHY Loopback test verifies the PHY level loopback
 functionality. In this test, a packet is sent which loops back
 at PHY level and is matched against the stored packet. It is a
 disruptive test and cannot be run as a health monitoring test.

TestThermal :
 This test verifies the temperature reading from the sensor is
 below the yellow temperature threshold. It is a non-disruptive
 test and can be run as a health monitoring test.

TestScratchRegister :
 The Scratch Register test monitors the health of
 application-specific integrated circuits (ASICs) by writing values
 into registers and reading back the values from these registers.
 It is a non-disruptive test and can be run as a health monitoring
```

```
 test.


TestUnusedPortLoopback :
 This test verifies the PHY level loopback functionality for
 admin-down ports. In this test, a packet is sent which loops back
 at PHY level and is matched against the stored packet. It is a
 non-disruptive test and can be run as a health monitoring test.


TestPortTxMonitoring :
 This test monitors the TX counters of a connected interface.
 This test verifies if the connected port is able to send the
 packets or not. It is a non-disruptive test and can be run
 as a health monitoring test.
.
.
.
```

show tech-support poe

To display the output of all the PoE-related troubleshooting commands, use the **show tech-support poe** command in privileged EXEC mode. This command displays the output of the following commands:

Non-SVL Setup

- **show clock**
- **show version**
- **show running-config**
- **show log**
- **show interface**
- **show interface status**
- **show controllers ethernet-controller**
- **show cdp neighbors detail**
- **show llpd neighbors detail**
- **show post**
- **show platform**
- **show module**
- **show platform software ilpower details**
- **show platform software ilpower system** *switch-id*
- **show power detail**
- **show power inline**
- **show power inline** *interface-id* **detail**
- **show power inline police**
- **show power inline priority**
- **show platform software trace message iomd** *slot-number*/**0**
- **show platform software trace message iomd** *slot-number*/**0 reverse**
- **show logging onboard slot** *slot-number* **poe detail**
- **show platform hardware fed switch** *switch-number* **fwd-asic register read** *register-name SupDeviceId*
- **test platform hardware poe get** *slot-number* **global**
- **test platform hardware poe get** *slot-number* **port** *port-number*

SVL Setup

- **show clock**

- **show version**
- **show running-config**
- **show log**
- **show interface**
- **show interface status**
- **show controllers ethernet-controller**
- **show cdp neighbors**
- **show cdp neighbors detail**
- **show llpd neighbors**
- **show llpd neighbors detail**
- **show post**
- **show platform**
- **show module**
- **show platform software ilpower details**
- **show platform software ilpower system** *switch-id*
- **show power detail**
- **show power inline**
- **show power inline** *interface-id* **detail**
- **show power inline police**
- **show power inline priority**
- **show platform software trace message iomd switch** *switch-number slot-number*/**0**
- **show platform software trace message iomd switch***switch-number slot-number*/**0 reverse**
- **show logging onboard slot switch** *switch-num* **slot***slot-number* **poe detail**
- **show platform hardware fed switch** *switch-number* **fwd-asic register read** *register-name SupDeviceId*
- **test platform hardware poe get switch***switch-num slot-number* **global**
- **test platform hardware poe get switch***switch-num slot-number* **port** *port-number*

Command Default This command has no arguments or keywords.

Command Modes Privileged EXEC

Command History

Release	Modification
Cisco IOS XE Gibraltar 16.10.1	This command was introduced.

This example shows the output from the **show tech-support poe** command:

```
Device# show tech-support poe
------------------ show clock ------------------


17:39:28.741 PDT Wed Aug 22 2018

------------------ show version ------------------

Cisco IOS XE Software, Version Version 16.10.01
Cisco IOS Software [Gibraltar], Catalyst L3 Switch Software (CAT9K_LITE_IOSXE), Version
16.10.1, RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2018 by Cisco Systems, Inc.
Compiled Wed 13-Jun-18 05:27 by mcpre


Cisco IOS-XE software, Copyright (c) 2005-2018 by cisco Systems, Inc.
All rights reserved.  Certain components of Cisco IOS-XE software are
licensed under the GNU General Public License ("GPL") Version 2.0.  The
software code licensed under GPL Version 2.0 is free software that comes
with ABSOLUTELY NO WARRANTY.  You can redistribute and/or modify such
GPL code under the terms of GPL Version 2.0.  For more details, see the
documentation or "License Notice" file accompanying the IOS-XE software,
or the applicable URL provided on the flyer accompanying the IOS-XE
software.


ROM: IOS-XE ROMMON

BOOTLDR: System Bootstrap, Version 16.6.2r[FC1], DEVELOPMENT SOFTWARE

UUT1 uptime is 47 minutes

Uptime for this control processor is 52 minutes

System returned to ROM by Image Install  at 09:53:40 PDT Wed Aug 22 2018

System restarted at 16:51:55 PDT Wed Aug 22 2018

System image file is "flash:cat9k_iosxe.BLD_POLARIS_DEV_LATEST_20180806_024152.SSA.conf"

Last reload reason: Image Install




This product contains cryptographic features and is subject to United

States and local country laws governing import, export, transfer and

use. Delivery of Cisco cryptographic products does not imply

third-party authority to import, export, distribute or use encryption.

Importers, exporters, distributors and users are responsible for

compliance with U.S. and local country laws. By using this product you

agree to comply with applicable laws and regulations. If you are unable
```

```
to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:
http://www.cisco.com/wwl/export/crypto/tool/stqrg.html

If you require further assistance please contact us by sending email to
export@cisco.com.


Technology Package License Information:

------------------------------------------------------------------------------
Technology-package                                  Technology-package
Current                       Type                     Next reboot
------------------------------------------------------------------------------
network-advantage    Smart License                  network-advantage
dna-advantage        Subscription Smart License     dna-advantage


Smart Licensing Status: UNREGISTERED/EVAL MODE

cisco C9404R (X86) processor (revision V00) with 1940534K/6147K bytes of memory.
Processor board ID FXS214202WY
1 Virtual Ethernet interface
168 Gigabit Ethernet interfaces
40 Ten Gigabit Ethernet interfaces
4 Forty Gigabit Ethernet interfaces
32768K bytes of non-volatile configuration memory.
15956620K bytes of physical memory.
11161600K bytes of Bootflash at bootflash:.
11161600K bytes of Bootflash at bootflash-2-0:.
1638400K bytes of Crash Files at crashinfo:.
```

```
1638400K bytes of Crash Files at crashinfo-2-0:.

0K bytes of WebUI ODM Files at webui:.


Base Ethernet MAC Address          : 38-0E-4D-9B-05-C0

Motherboard Assembly Number        : 49F4

Motherboard Serial Number          : FXS214202WY

Model Revision Number              : V02

Motherboard Revision Number        : 1

Model Number                       : C9404R

System Serial Number               : FXS2145Q20X


Switch 02

---------

Base Ethernet MAC Address: 38:0e:4d:9b:10:00

Motherboard Assembly Number: 49F4

Motherboard Serial Number: FXS2143001X

Model Revision Number: V02

Motherboard Revision Number: 1

Model Number: C9404R

System Serial Number: FXS2145Q20C


Configuration register is 0x2


------------------ show running-config ------------------


Building configuration...

Current configuration : 22900 bytes
!
! Last configuration change at 14:59:57 PDT Mon Sep 11 2017
!
version 16.10
no service pad
service timestamps debug datetime msec localtime show-timezone
service timestamps log datetime msec localtime show-timezone
service compress-config
no platform punt-keepalive disable-kernel-core
platform shell
!
hostname stack9-mixed2
!
```

```
!
vrf definition Mgmt-vrf
 !
 address-family ipv4
 exit-address-family
 !
 address-family ipv6
 exit-address-family
!
no logging monitor
!
no aaa new-model
boot system switch all flash:packages.conf
clock timezone PDT -7 0
stack-mac persistent timer 4
switch 1 provision ws-c3850-24xs
!
stack-power stack Powerstack-11
 mode redundant strict
!
stack-power switch 1
 stack Powerstack-11
!
ip routing
!
crypto pki trustpoint TP-self-signed-2636786964
 enrollment selfsigned
 subject-name cn=IOS-Self-Signed-Certificate-2636786964
 revocation-check none
 rsakeypair TP-self-signed-2636786964
!
crypto pki certificate chain TP-self-signed-2636786964
 certificate self-signed 01
  30820330 30820218 A0030201 02020101 300D0609 2A864886 F70D0101 05050030
  31312F30 2D060355 04031326 494F532D 53656C66 2D536967 6E65642D 43657274
  69666963 6174652D 32363336 37383639 3634301E 170D3137 30333137 31383331
  31325A17 0D323030 31303130 30303030 305A3031 312F302D 06035504 03132649
  4F532D53 656C662D 5369676E 65642D43 65727469 66696361 74652D32 36333637
  38363936 34308201 22300D06 092A8648 86F70D01 01010500 0382010F 00308201
  0A028201 0100E7C5 F498308A 83FF02DB 48AC4428 2F738E43 8587DD2E D1D43918
  7921617F 563890D7 35707C69 413D9F6D A160A6E2 D741C0B3 8E2969EA 9E732EA8
  D3BD6B75 3465C0E6 0FAC1055 340903A5 0EF67AE4 271D73BF F6C91B39 A13C2423
  9250D266 86E07FBC B41851AC 2B03B570 73300C09 0D1B15D1 E56DDA9A 4D39CDF2
  0C7A0831 C634DFE8 3EA55909 D9EEFEA7 B0EB872E 0E91CA86 B90965CC 326780EA
  28274CB1 EB13CA17 08959E01 8F9D25EC 4F8CE767 394E345C E870D776 10758D21
  9D6BD6CD D7619DD0 28B1E6CB D1032A62 DC215510 BA58895E D3724D3C 2A8481D4
  5E5129F5 65CE9105 47DCFD46 1AA7E20E 1D20E4DD 7C786428 83ACCDCE C5900822
  F85AF081 FF130203 010001A3 53305130 0F060355 1D130101 FF040530 030101FF
  301F0603 551D2304 18301680 149EE39D 6B4CC129 72868658 69880994 7AC71912
  04301D06 03551D0E 04160414 9EE39D6B 4CC12972 86865869 8809947A C7191204
  300D0609 2A864886 F70D0101 05050003 82010100 C42EAF92 1D2324B9 2B0153DD
  A85E607E FA9FA0AD BB677982 B5DAC3F7 DE938EC9 6F948385 9916A359 AF2BBA86
  06F04B7E 5B736DD7 CDD89067 1887C177 9241CDF5 0943000D D940F982 55F3DD8A
  9E52167E 64074D23 A1E93445 1B60E4A0 D923F5FA 19064241 E575D6B9 7E1CCE9C
  3957A4C7 67F86FE4 3CC37107 B003873A 3D986787 7DF29056 29D42E30 4AE1D7AC
  3DABD1E8 940DDDF9 C14DCE35 71C79000 A7AF6B28 AD050608 4E7B16CB 7ED8D32E
  FB4B5FF8 CDA2FFCD 3FDAFEF6 AC279A80 03A7FC31 FEB27C2F D7AEFCAE 1B01850F
  AEEAC787 1F1B6BBB 380AA70F CACE89AF 3B0096B6 05906C96 8D004FDC D35AECFC
  A644C0AF 4F874C6D 67F5769E A6147323 D199FE63
        quit
!
errdisable recovery cause inline-power
errdisable recovery interval 30
license boot level ipservicesk9
```

```
diagnostic bootup level minimal
spanning-tree mode rapid-pvst
spanning-tree extend system-id
!
redundancy
 mode sso
!
class-map match-any system-cpp-police-topology-control
  description Topology control
class-map match-any system-cpp-police-sw-forward
  description Sw forwarding, L2 LVX data, LOGGING
class-map match-any system-cpp-default
  description EWLC control, EWCL data
!
policy-map port_child_policy
 class non-client-nrt-class
  bandwidth remaining ratio 10
policy-map system-cpp-policy
 class system-cpp-police-data
  police rate 600 pps
 class system-cpp-police-sys-data
  police rate 100 pps
!
interface Port-channel1
 no switchport
 no ip address
!
interface GigabitEthernet0/0
 vrf forwarding Mgmt-vrf
 ip address 10.5.49.131 255.255.255.0
 negotiation auto
!
interface FortyGigabitEthernet1/1/1
!
interface TenGigabitEthernet1/0/1
!
interface FortyGigabitEthernet2/1/1
 shutdown
!
interface TenGigabitEthernet2/1/1
 shutdown
!
interface GigabitEthernet3/0/40
 shutdown
!
interface GigabitEthernet9/0/1
 power inline port poe-ha
!
interface GigabitEthernet9/0/11
 power inline port priority high
!
interface Vlan1
 no ip address
!
ip forward-protocol nd
ip http server
ip http authentication local
ip http secure-server
!
ip tftp source-interface GigabitEthernet0/0
ip route 20.20.20.0 255.255.255.0 2.2.2.3
ip ssh time-out 60
ip ssh authentication-retries 2
ip ssh version 2
```

```
ip ssh server algorithm encryption aes128-ctr aes192-ctr aes256-ctr
ip ssh client algorithm encryption aes128-ctr aes192-ctr aes256-ctr
!
ip access-list extended AutoQos-4.0-wlan-Acl-Bulk-Data
 permit tcp any any eq 22
 permit tcp any any eq 465
 permit tcp any any eq 143
 permit tcp any any eq 993
 permit tcp any any eq 995
 permit tcp any any eq 1914
 permit tcp any any eq ftp
 permit tcp any any eq ftp-data
 permit tcp any any eq smtp
 permit tcp any any eq pop3
ip access-list extended AutoQos-4.0-wlan-Acl-MultiEnhanced-Conf
 permit udp any any range 16384 32767
 permit tcp any any range 50000 59999
ip access-list extended AutoQos-4.0-wlan-Acl-Scavanger
 permit tcp any any range 2300 2400
 permit udp any any range 2300 2400
 permit tcp any any range 6881 6999
 permit tcp any any range 28800 29100
 permit tcp any any eq 1214
 permit udp any any eq 1214
 permit tcp any any eq 3689
 permit udp any any eq 3689
 permit tcp any any eq 11999
ip access-list extended AutoQos-4.0-wlan-Acl-Signaling
 permit tcp any any range 2000 2002
 permit tcp any any range 5060 5061
 permit udp any any range 5060 5061
ip access-list extended AutoQos-4.0-wlan-Acl-Transactional-Data
 permit tcp any any eq 443
 permit tcp any any eq 1521
 permit udp any any eq 1521
 permit tcp any any eq 1526
 permit udp any any eq 1526
 permit tcp any any eq 1575
 permit udp any any eq 1575
 permit tcp any any eq 1630
 permit udp any any eq 1630
 permit tcp any any eq 1527
 permit tcp any any eq 6200
 permit tcp any any eq 3389
 permit tcp any any eq 5985
 permit tcp any any eq 8080
!
control-plane
 service-policy input system-cpp-policy
!
!
no vstack
!
line con 0
 exec-timeout 0 0
 stopbits 1
 speed 115200
line aux 0
 stopbits 1
line vty 0 4
 login
line vty 5 15
 login
!
```

```
!
mac address-table notification mac-move
wsma agent exec
 profile httplistener
 profile httpslistener
!
wsma agent config
 profile httplistener
 profile httpslistener
!
wsma agent filesys
 profile httplistener
 profile httpslistener
!
wsma agent notify
 profile httplistener
 profile httpslistener
!
!
wsma profile listener httplistener
 transport http
!
wsma profile listener httpslistener
 transport https
!
ap dot11 airtime-fairness policy-name Default 0
ap group default-group
ap hyperlocation ble-beacon 0
ap hyperlocation ble-beacon 1
ap hyperlocation ble-beacon 2
ap hyperlocation ble-beacon 3
ap hyperlocation ble-beacon 4
end

------------------ show log ------------------



Syslog logging: enabled (0 messages dropped, 153 messages rate-limited, 0 flushes, 0 overruns,
 xml disabled, filtering disabled)


No Active Message Discriminator.




No Inactive Message Discriminator.



    Console logging: disabled

    Monitor logging: level debugging, 0 messages logged, xml disabled,

                     filtering disabled
```

```
    Buffer logging:  level debugging, 2434 messages logged, xml disabled,
                     filtering disabled
    Exception Logging: size (4096 bytes)
    Count and timestamp logging messages: disabled
    Persistent logging: disabled


No active filter modules.


    Trap logging: level informational, 445 message lines logged
        Logging Source-Interface:       VRF Name:


Log Buffer (4096 bytes):
 17:38:42.126 PDT: ILP power assign handling event: event 2, pwr assign is done by proto
LLDP-MDI
Port Gi1/1/0/23: Selected Protocol LLDP-MDI


Aug 22 17:38:42.126 PDT: ILP power-via-MDI request from IDB: Received LLDP 802.3at
Power-via-MDI TLV from port GigabitEthernet1/1/0/23
Aug 22 17:38:42.126 PDT: Print four wire power via-MDI TLV: FOUR WIRE via mdi class tlv:
  Four Wire Power Supported   : 0
  Spare Pair Det Classify Req : 0
  PD Desired State            : 0
  PSE Operation State         : 0
Aug 22 17:38:42.126 PDT: Received 4-wire LLDP TLV on Gi1/1/0/23
Aug 22 17:38:42.126 PDT:  four_pair 0, spare_pair_det 0, pd_state 0, pse_state 0Gi1/1/0/23
 LLDP GET TLV


Aug 22 17:38:44.126 PDT: ILP get power-via-MDI TLV for IDB: Sending LLDP TLV on Gi1/1/0/23
Aug 22 17:38:44.126 PDT: Print LLDB power via-MDI TLV: LLDP power via mdi class tlv:
  PSE Allocation(mW): 130
  PD Request(mW)    : 130
  PD Class      : Class 3
  PD Priority   : low
```

```
  PD Power Type   : Type 2 PSE

  Power Source    : Primary

  mdi_pwr_support: 15

  Power Pair      : SignalGi1/1/0/23 LLDP GET TLV


Aug 22 17:38:44.126 PDT: ILP get power-via-MDI TLV for IDB: PSE Sending 4-wire LLDP TLV on
 Gi1/1/0/23

Aug 22 17:38:44.126 PDT: Print four wire power via-MDI TLV: FOUR WIRE via mdi class tlv:

  Four Wire Power Supported   : 1

  Spare Pair Det Classify Req : 0

  PD Desired State            : 0

  PSE Operation State         : 0Gi1/1/0/23 LLDP GET TLV


Aug 22 17:38:44.261 PDT: ILP get power-via-MDI TLV for IDB: Sending LLDP TLV on Gi1/1/0/23

Aug 22 17:38:44.261 PDT: Print LLDB power via-MDI TLV: LLDP power via mdi class tlv:

  PSE Allocation(mW): 130

  PD Request(mW)    : 130

  PD Class      : Class 3

  PD Priority   : low

  PD Power Type   : Type 2 PSE

  Power Source    : Primary

  mdi_pwr_support: 15

  Power Pair      : SignalGi1/1/0/23 LLDP GET TLV


Aug 22 17:38:44.261 PDT: ILP get power-via-MDI TLV for IDB: PSE Sending 4-wire LLDP TLV on
 Gi1/1/0/23

Aug 22 17:38:44.261 PDT: Print four wire power via-MDI TLV: FOUR WIRE via mdi class tlv:

  Four Wire Power Supported   : 1

  Spare Pair Det Classify Req : 0

  PD Desired State            : 0

  PSE Operation State         : 0

Aug 22 17:39:04.397 PDT: ILP power-via-MDI request from IDB: Received LLDP 802.3at
Power-via-MDI TLV from port GigabitEthernet1/1/0/47

Aug 22 17:39:04.397 PDT: Print LLDB power via-MDI TLV: LLDP power via mdi class tlv:
```

```
  PSE Allocation(mW): 130

  PD Request(mW)    : 130

  PD Class      : Class 3

  PD Priority   : high

  PD Power Type   : Type 1 PD

  Power Source   : Primary

  mdi_pwr_support: 0

  Power Pair     : Signal

Aug 22 17:39:04.397 PDT: ILP power assign handling event: event 2, pwr assign is done by
proto LLDP-MDI

Port Gi1/1/0/47: Selected Protocol LLDP-MDI



Aug 22 17:39:04.397 PDT: ILP power-via-MDI request from IDB: Received LLDP 802.3at
Power-via-MDI TLV from port GigabitEthernet1/1/0/47Gi1/1/0/47 LLDP TLV REQUEST: No change
in request/allocation

Gi1/1/0/47 LLDP GET TLV



Aug 22 17:39:06.397 PDT: ILP get power-via-MDI TLV for IDB: Sending LLDP TLV on Gi1/1/0/47

Aug 22 17:39:06.397 PDT: Print LLDB power via-MDI TLV: LLDP power via mdi class tlv:

  PSE Allocation(mW): 130

  PD Request(mW)    : 130

  PD Class      : Class 3

  PD Priority   : low

  PD Power Type   : Type 2 PSE

  Power Source   : Primary

  mdi_pwr_support: 15

  Power Pair     : SignalGi1/1/0/47 LLDP GET TLV



Aug 22 17:39:06.397 PDT: ILP get power-via-MDI TLV for IDB: PSE Sending 4-wire LLDP TLV on
 Gi1/1/0/47

Aug 22 17:39:06.397 PDT: Print four wire power via-MDI TLV: FOUR WIRE via mdi class tlv:

  Four Wire Power Supported   : 1

  Spare Pair Det Classify Req : 0

  PD Desired State            : 0
```

```
  PSE Operation State         : 0

Aug 22 17:39:11.483 PDT: %SYS-5-LOG_CONFIG_CHANGE: Console logging disabled

Aug 22 17:39:11.522 PDT: %SYS-5-CONFIG_I: Configured from console by console

Aug 22 17:39:16.693 PDT: %SYS-5-CONFIG_I: Configured from console by console

Aug 22 17:39:17.000 PDT: %SYS-6-CLOCKUPDATE: System clock has been updated from 17:39:16
PDT Wed Aug 22 2018 to 17:39:17 PDT Wed Aug 22 2018, configured from console by console.

------------------ show interface status ------------------
```

Port	Name	Status	Vlan	Duplex	Speed	Type
Gi1/1/0/1		connected	1	a-full	a-1000	10/100/1000BaseTX
Gi1/1/0/2		notconnect	1	auto	auto	10/100/1000BaseTX
Gi1/1/0/3		notconnect	1	auto	auto	10/100/1000BaseTX
Gi1/1/0/4		notconnect	1	auto	auto	10/100/1000BaseTX
Gi1/1/0/5		notconnect	1	auto	auto	10/100/1000BaseTX
Gi1/1/0/6		notconnect	1	auto	auto	10/100/1000BaseTX
Gi1/1/0/7		notconnect	1	auto	auto	10/100/1000BaseTX
Gi1/1/0/8		notconnect	1	auto	auto	10/100/1000BaseTX
Gi1/1/0/9		notconnect	1	auto	auto	10/100/1000BaseTX
Gi1/1/0/10		notconnect	1	auto	auto	10/100/1000BaseTX
Gi1/1/0/11		notconnect	1	auto	auto	10/100/1000BaseTX
Gi1/1/0/12		notconnect	1	auto	auto	10/100/1000BaseTX
Gi1/1/0/13		notconnect	1	auto	auto	10/100/1000BaseTX
Gi1/1/0/14		notconnect	1	auto	auto	10/100/1000BaseTX
Gi1/1/0/15		notconnect	1	auto	auto	10/100/1000BaseTX
Gi1/1/0/16		notconnect	1	auto	auto	10/100/1000BaseTX
Gi1/1/0/17		notconnect	1	auto	auto	10/100/1000BaseTX
Gi1/1/0/18		notconnect	1	auto	auto	10/100/1000BaseTX
Gi1/1/0/19		notconnect	1	auto	auto	10/100/1000BaseTX
Gi1/1/0/20		notconnect	1	auto	auto	10/100/1000BaseTX
Gi1/1/0/21		notconnect	1	auto	auto	10/100/1000BaseTX

```
Gi1/1/0/22                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/23                      connected    1          a-full a-1000 10/100/1000BaseTX
Gi1/1/0/24                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/25                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/26                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/27                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/28                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/29                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/30                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/31                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/32                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/33                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/34                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/35                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/36                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/37                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/38                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/39                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/40                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/41                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/42                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/43                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/44                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/45                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/46                      notconnect   1            auto   auto 10/100/1000BaseTX
Gi1/1/0/47                      connected    1          a-full a-1000 10/100/1000BaseTX
Gi1/1/0/48                      notconnect   1            auto   auto 10/100/1000BaseTX
------------------ show interface ------------------


Vlan1 is administratively down, line protocol is down , Autostate Enabled
  Hardware is Ethernet SVI, address is e4aa.5d54.2188 (bia e4aa.5d54.2188)
```

```
  MTU 1500 bytes, BW 1000000 Kbit/sec, DLY 10 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive not supported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:02, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/375/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     619 packets input, 71804 bytes, 0 no buffer
     Received 0 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 packets output, 0 bytes, 0 underruns
     0 output errors, 0 interface resets
     0 unknown protocol drops
     0 output buffer failures, 0 output buffers swapped out
GigabitEthernet0/0 is up, line protocol is up
  Hardware is RP management port, address is 380e.4d9b.05d5 (bia 380e.4d9b.05d5)
  Internet address is 192.168.0.113/24
  MTU 1500 bytes, BW 1000000 Kbit/sec, DLY 10 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full Duplex, 1000Mbps, link type is auto, media type is RJ45
  output flow-control is unsupported, input flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:26, output 00:00:08, output hang never
  Last clearing of "show interface" counters never
```

```
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     2063 packets input, 160652 bytes, 0 no buffer
     Received 1 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 watchdog, 0 multicast, 0 pause input
     134 packets output, 17698 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
     56 unknown protocol drops
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier, 0 pause output
     0 output buffer failures, 0 output buffers swapped out
     0 carrier transitions
------------------ show controllers ethernet-controller ------------------


Transmit                  GigabitEthernet1/1/0/1   Receive
     29775251 Total bytes                            0 Total bytes
       455564 Unicast frames                         0 Unicast frames
     29156096 Unicast bytes                          0 Unicast bytes
         2882 Multicast frames                       0 Multicast frames
       240089 Multicast bytes                        0 Multicast bytes
         1068 Broadcast frames                       0 Broadcast frames
       379066 Broadcast bytes                        0 Broadcast bytes
            0 System FCS error frames                0 IpgViolation frames
            0 MacUnderrun frames                     0 MacOverrun frames
            0 Pause frames                           0 Pause frames
            0 Cos 0 Pause frames                     0 Cos 0 Pause frames
```

```
     0 Cos 1 Pause frames                0 Cos 1 Pause frames
     0 Cos 2 Pause frames                0 Cos 2 Pause frames
     0 Cos 3 Pause frames                0 Cos 3 Pause frames
     0 Cos 4 Pause frames                0 Cos 4 Pause frames
     0 Cos 5 Pause frames                0 Cos 5 Pause frames
     0 Cos 6 Pause frames                0 Cos 6 Pause frames
     0 Cos 7 Pause frames                0 Cos 7 Pause frames
     0 Oam frames                        0 OamProcessed frames
     0 Oam frames                        0 OamDropped frames
457497 Minimum size frames               0 Minimum size frames
  1153 65 to 127 byte frames             0 65 to 127 byte frames
     0 128 to 255 byte frames            0 128 to 255 byte frames
   741 256 to 511 byte frames            0 256 to 511 byte frames
   123 512 to 1023 byte frames           0 512 to 1023 byte frames
     0 1024 to 1518 byte frames          0 1024 to 1518 byte frames
     0 1519 to 2047 byte frames          0 1519 to 2047 byte frames
     0 2048 to 4095 byte frames          0 2048 to 4095 byte frames
     0 4096 to 8191 byte frames          0 4096 to 8191 byte frames
     0 8192 to 16383 byte frames         0 8192 to 16383 byte frames
     0 16384 to 32767 byte frame         0 16384 to 32767 byte frame
     0 > 32768 byte frames               0 > 32768 byte frames
     0 Late collision frames             0 SymbolErr frames
 56128 Excess Defer frames               0 Collision fragments
     0 Good (1 coll) frames              0 ValidUnderSize frames
     0 Good (>1 coll) frames             0 InvalidOverSize frames
     0 Deferred frames                   0 ValidOverSize frames
     0 Gold frames dropped               0 FcsErr frames
     0 Gold frames truncated
     0 Gold frames successful
     0 1 collision frames
     0 2 collision frames
     0 3 collision frames
```

```
            0 4 collision frames

            0 5 collision frames

            0 6 collision frames

            0 7 collision frames

            0 8 collision frames

            0 9 collision frames

            0 10 collision frames

            0 11 collision frames

            0 12 collision frames

            0 13 collision frames

            0 14 collision frames

            0 15 collision frames

            0 Excess collision frames


LAST UPDATE 817 msecs AGO

------------------ show cdp neighbors detail ------------------


% CDP is not enabled

------------------ show lldp neighbors detail ------------------




-----------------------------------------------

Local Intf: Gi1/1/0/47

Chassis id: a418.7579.0110

Port id: Gi0

Port Description: GigabitEthernet0

System Name: AP2c54.2da4.3a3d


System Description:

Cisco IOS Software, C1260 Software (AP3G1-K9W8-M), Version 15.3(3)JNB2, RELEASE SOFTWARE
(fc1)

Technical Support: http://www.cisco.com/techsupport

Copyright (c) 1986-2015 by Cisco Systems, Inc.
```

```
Compiled Tue 21-Jul-15 01:31 by prod_rel_team


Time remaining: 106 seconds

System Capabilities: B

Enabled Capabilities: B

Management Addresses - not advertised

Auto Negotiation - supported, enabled

Physical media capabilities:

    1000baseT(FD)

    1000baseT(HD)

    100base-TX(FD)

    100base-TX(HD)

    10base-T(FD)

    10base-T(HD)

Media Attachment Unit type: 30

Vlan ID: - not advertised

PoE+ Power-via-MDI TLV:

 Power Pair: Signal

 Power Class: Class 3

 Power Device Type: Type 1 PD

 Power Source: PSE

 Power Priority: high

 Power Requested: 13000 mW

 Power Allocated: 13000 mW

------------------ show post ------------------



Stored system POST messages:


Switch 1

---------
```

```
POST: MBIST Tests : Begin

POST: MBIST Tests : End, Status Passed


POST: PHY Loopback Tests : Skipped !!!

Switch 2

---------


POST: MBIST Tests : Begin

POST: MBIST Tests : End, Status Passed


POST: PHY Loopback Tests : Skipped !!!

------------------ show power inline police ------------------




Available:620.0(w)  Used:30.8(w)  Remaining:589.2(w)


Interface Admin  Oper       Admin      Oper       Cutoff Oper
          State  State      Police     Police     Power  Power
--------- ------ ---------- ---------- ---------- ------ -----
Gi1/1/0/1   auto   off        none       n/a        n/a    n/a
Gi1/1/0/2   auto   off        none       n/a        n/a    n/a
Gi1/1/0/3   auto   off        none       n/a        n/a    n/a
Gi1/1/0/4   auto   off        none       n/a        n/a    n/a
Gi1/1/0/5   auto   off        none       n/a        n/a    n/a
Gi1/1/0/6   auto   off        none       n/a        n/a    n/a
Gi1/1/0/7   auto   off        none       n/a        n/a    n/a
Gi1/1/0/8   auto   off        none       n/a        n/a    n/a
Gi1/1/0/9   auto   off        none       n/a        n/a    n/a
Gi1/1/0/10  auto   off        none       n/a        n/a    n/a
Gi1/1/0/11  auto   off        none       n/a        n/a    n/a
Gi1/1/0/12  auto   off        none       n/a        n/a    n/a
```

```
Gi1/1/0/13  auto   off        none       n/a        n/a    n/a
Gi1/1/0/14  auto   off        none       n/a        n/a    n/a
Gi1/1/0/15  auto   off        none       n/a        n/a    n/a
Gi1/1/0/16  auto   off        none       n/a        n/a    n/a
Gi1/1/0/17  auto   off        none       n/a        n/a    n/a
Gi1/1/0/18  auto   off        none       n/a        n/a    n/a
Gi1/1/0/19  auto   off        none       n/a        n/a    n/a
Gi1/1/0/20  auto   off        none       n/a        n/a    n/a
Gi1/1/0/21  auto   off        none       n/a        n/a    n/a
Gi1/1/0/22  auto   off        none       n/a        n/a    n/a
Gi1/1/0/23  auto   on         none       n/a        n/a    6.9
Gi1/1/0/24  auto   off        none       n/a        n/a    n/a
Gi1/1/0/25  auto   off        none       n/a        n/a    n/a
Gi1/1/0/26  auto   off        none       n/a        n/a    n/a
Gi1/1/0/27  auto   off        none       n/a        n/a    n/a
Gi1/1/0/28  auto   off        none       n/a        n/a    n/a
Gi1/1/0/29  auto   off        none       n/a        n/a    n/a
Gi1/1/0/30  auto   off        none       n/a        n/a    n/a
Gi1/1/0/31  auto   off        none       n/a        n/a    n/a
Gi1/1/0/32  auto   off        none       n/a        n/a    n/a
Gi1/1/0/33  auto   off        none       n/a        n/a    n/a
Gi1/1/0/34  auto   off        none       n/a        n/a    n/a
Gi1/1/0/35  auto   off        none       n/a        n/a    n/a
Gi1/1/0/36  auto   off        none       n/a        n/a    n/a
Gi1/1/0/37  auto   off        none       n/a        n/a    n/a
Gi1/1/0/38  auto   off        none       n/a        n/a    n/a
Gi1/1/0/39  auto   off        none       n/a        n/a    n/a
Gi1/1/0/40  auto   off        none       n/a        n/a    n/a
Gi1/1/0/41  auto   off        none       n/a        n/a    n/a
Gi1/1/0/42  auto   off        none       n/a        n/a    n/a
Gi1/1/0/43  auto   off        none       n/a        n/a    n/a
Gi1/1/0/44  auto   off        none       n/a        n/a    n/a
```

```
Gi1/1/0/45  auto   off        none       n/a        n/a    n/a
Gi1/1/0/46  auto   off        none       n/a        n/a    n/a
Gi1/1/0/47  auto   on         none       n/a        n/a    8.8
Gi1/1/0/48  auto   off        none       n/a        n/a    n/a
--------- ------ ---------- ---------- ---------- ------ -----
Totals:                                                   15.7


Available:1180.0(w)  Used:41.8(w)  Remaining:1138.2(w)

Interface Admin  Oper       Admin      Oper       Cutoff Oper
          State  State      Police     Police     Power  Power
--------- ------ ---------- ---------- ---------- ------ -----
Gi2/1/0/1   auto   off        none       n/a        n/a    n/a
Gi2/1/0/2   auto   off        none       n/a        n/a    n/a
Gi2/1/0/3   auto   off        none       n/a        n/a    n/a
Gi2/1/0/4   auto   off        none       n/a        n/a    n/a
Gi2/1/0/5   auto   off        none       n/a        n/a    n/a
Gi2/1/0/6   auto   off        none       n/a        n/a    n/a
Gi2/1/0/7   auto   off        none       n/a        n/a    n/a
Gi2/1/0/8   auto   off        none       n/a        n/a    n/a
Gi2/1/0/9   auto   off        none       n/a        n/a    n/a
Gi2/1/0/10  auto   off        none       n/a        n/a    n/a
Gi2/1/0/11  auto   off        none       n/a        n/a    n/a
Gi2/1/0/12  auto   off        none       n/a        n/a    n/a
Gi2/1/0/13  auto   off        none       n/a        n/a    n/a
Gi2/1/0/14  auto   off        none       n/a        n/a    n/a
Gi2/1/0/15  auto   off        none       n/a        n/a    n/a
Gi2/1/0/16  auto   off        none       n/a        n/a    n/a
Gi2/1/0/17  auto   off        none       n/a        n/a    n/a
Gi2/1/0/18  auto   off        none       n/a        n/a    n/a
Gi2/1/0/19  auto   off        none       n/a        n/a    n/a
```

```
Gi2/1/0/20  auto   off        none       n/a        n/a    n/a
Gi2/1/0/21  auto   on         none       n/a        n/a    5.7
Gi2/1/0/22  auto   off        none       n/a        n/a    n/a
Gi2/1/0/23  auto   off        none       n/a        n/a    n/a
Gi2/1/0/24  auto   off        none       n/a        n/a    n/a
Te2/1/0/25  auto   off        none       n/a        n/a    n/a
Te2/1/0/26  auto   off        none       n/a        n/a    n/a
Te2/1/0/27  auto   off        none       n/a        n/a    n/a
Te2/1/0/28  auto   off        none       n/a        n/a    n/a
Te2/1/0/29  auto   off        none       n/a        n/a    n/a
Te2/1/0/30  auto   off        none       n/a        n/a    n/a
Te2/1/0/31  auto   off        none       n/a        n/a    n/a
Te2/1/0/32  auto   off        none       n/a        n/a    n/a
Te2/1/0/33  auto   off        none       n/a        n/a    n/a
Te2/1/0/34  auto   off        none       n/a        n/a    n/a
Te2/1/0/35  auto   off        none       n/a        n/a    n/a
Te2/1/0/36  auto   on         none       n/a        n/a    10.3
Te2/1/0/37  auto   off        none       n/a        n/a    n/a
Te2/1/0/38  auto   off        none       n/a        n/a    n/a
Te2/1/0/39  auto   off        none       n/a        n/a    n/a
Te2/1/0/40  auto   off        none       n/a        n/a    n/a
Te2/1/0/41  auto   off        none       n/a        n/a    n/a
Te2/1/0/42  auto   off        none       n/a        n/a    n/a
Te2/1/0/43  auto   off        none       n/a        n/a    n/a
Te2/1/0/44  auto   off        none       n/a        n/a    n/a
Te2/1/0/45  auto   off        none       n/a        n/a    n/a
Te2/1/0/46  auto   off        none       n/a        n/a    n/a
Te2/1/0/47  auto   off        none       n/a        n/a    n/a
Te2/1/0/48  auto   off        none       n/a        n/a    n/a
--------- ------ ---------- ---------- ---------- ------ -----
Totals:                                                   16.0
------------------ show power inline priority ------------------
```

```
Interface  Admin  Oper       Admin
           State  State      Priority
---------- ------ ---------- ----------

Gi1/1/0/1    auto   off        low
Gi1/1/0/2    auto   off        low
Gi1/1/0/3    auto   off        low
Gi1/1/0/4    auto   off        low
Gi1/1/0/5    auto   off        low
Gi1/1/0/6    auto   off        low
Gi1/1/0/7    auto   off        low
Gi1/1/0/8    auto   off        low
Gi1/1/0/9    auto   off        low
Gi1/1/0/10   auto   off        low
Gi1/1/0/11   auto   off        low
Gi1/1/0/12   auto   off        low
Gi1/1/0/13   auto   off        low
Gi1/1/0/14   auto   off        low
Gi1/1/0/15   auto   off        low
Gi1/1/0/16   auto   off        low
Gi1/1/0/17   auto   off        low
Gi1/1/0/18   auto   off        low
Gi1/1/0/19   auto   off        low
Gi1/1/0/20   auto   off        low
Gi1/1/0/21   auto   off        low
Gi1/1/0/22   auto   off        low
Gi1/1/0/23   auto   on         low
Gi1/1/0/24   auto   off        low
Gi1/1/0/25   auto   off        low
Gi1/1/0/26   auto   off        low
```

```
Gi1/1/0/27   auto   off        low
Gi1/1/0/28   auto   off        low
Gi1/1/0/29   auto   off        low
Gi1/1/0/30   auto   off        low
Gi1/1/0/31   auto   off        low
Gi1/1/0/32   auto   off        low
Gi1/1/0/33   auto   off        low
Gi1/1/0/34   auto   off        low
Gi1/1/0/35   auto   off        low
Gi1/1/0/36   auto   off        low
Gi1/1/0/37   auto   off        low
Gi1/1/0/38   auto   off        low
Gi1/1/0/39   auto   off        low
Gi1/1/0/40   auto   off        low
Gi1/1/0/41   auto   off        low
Gi1/1/0/42   auto   off        low
Gi1/1/0/43   auto   off        low
Gi1/1/0/44   auto   off        low
Gi1/1/0/45   auto   off        low
Gi1/1/0/46   auto   off        low
Gi1/1/0/47   auto   on         low
Gi1/1/0/48   auto   off        low
Interface  Admin  Oper       Admin
           State  State      Priority
---------- ------ ---------- ----------

Gi2/1/0/1    auto   off        low
Gi2/1/0/2    auto   off        low
Gi2/1/0/3    auto   off        low
Gi2/1/0/4    auto   off        low
Gi2/1/0/5    auto   off        low
Gi2/1/0/6    auto   off        low
```

```
Gi2/1/0/7    auto   off        low
Gi2/1/0/8    auto   off        low
Gi2/1/0/9    auto   off        low
Gi2/1/0/10   auto   off        low
Gi2/1/0/11   auto   off        low
Gi2/1/0/12   auto   off        low
Gi2/1/0/13   auto   off        low
Gi2/1/0/14   auto   off        low
Gi2/1/0/15   auto   off        low
Gi2/1/0/16   auto   off        low
Gi2/1/0/17   auto   off        low
Gi2/1/0/18   auto   off        low
Gi2/1/0/19   auto   off        low
Gi2/1/0/20   auto   off        low
Gi2/1/0/21   auto   on         low
Gi2/1/0/22   auto   off        low
Gi2/1/0/23   auto   off        low
Gi2/1/0/24   auto   off        low
Te2/1/0/25   auto   off        low
Te2/1/0/26   auto   off        low
Te2/1/0/27   auto   off        low
Te2/1/0/28   auto   off        low
Te2/1/0/29   auto   off        low
Te2/1/0/30   auto   off        low
Te2/1/0/31   auto   off        low
Te2/1/0/32   auto   off        low
Te2/1/0/33   auto   off        low
Te2/1/0/34   auto   off        low
Te2/1/0/35   auto   off        low
Te2/1/0/36   auto   on         low
Te2/1/0/37   auto   off        low
Te2/1/0/38   auto   off        low
```

```
Te2/1/0/39   auto   off        low
Te2/1/0/40   auto   off        low
Te2/1/0/41   auto   off        low
Te2/1/0/42   auto   off        low
Te2/1/0/43   auto   off        low
Te2/1/0/44   auto   off        low
Te2/1/0/45   auto   off        low
Te2/1/0/46   auto   off        low
Te2/1/0/47   auto   off        low
Te2/1/0/48   auto   off        low
------------------ show platform ------------------


Chassis type: C9404R


Switch 1


Slot      Type                State                 Insert time (ago)
--------- ------------------- --------------------- -----------------
1         C9400-LC-48U        ok                    01:17:25
 1/0      C9400-LC-48U        ok                    01:12:31
2         C9400-SUP-1XL       ok                    01:17:25
 2/0      C9400-SUP-1XL       ok                    01:12:48
4         WS-XL48D            ok                    01:17:25
 4/0      WS-XL48D            ok                    01:12:30
P1        C9400-PWR-3200AC    ok                    01:17:06
P2        C9400-PWR-2100AC    ok                    01:17:06
P9        C9404-FAN           ok                    01:17:04


Slot      CPLD Version        Firmware Version
--------- ------------------- ----------------------------------------
1         17101705            16.6.2r[FC1]
```

```
2         17101705            16.6.2r[FC1]
4         17101705            16.6.2r[FC1]

Switch 2

Slot      Type                State                 Insert time (ago)
--------- ------------------- --------------------- -----------------
1         C9400-LC-48UX       ok                    01:09:55
 1/0      C9400-LC-48UX       ok                    01:11:45
2         C9400-SUP-1XL       ok                    01:09:55
 2/0      C9400-SUP-1XL       ok                    01:12:01
4         C9400-LC-48S        ok                    01:09:55
 4/0      C9400-LC-48S        ok                    01:11:56
P1        C9400-PWR-3200AC    ok                    01:17:06
P2        C9400-PWR-2100AC    ok                    01:17:06
P3        C9400-PWR-2100AC    ok                    01:17:05
P4        C9400-PWR-2100AC    ps, fail              01:17:04
P9        C9404-FAN           ok                    01:17:03

Slot      CPLD Version        Firmware Version
--------- ------------------- ----------------------------------------
1         17101705            16.6.2r[FC1]
2         17101705            16.6.2r[FC1]
4         17101705            16.6.2r[FC1]
------------------ show module ------------------

Chassis Type: C9404R

Switch Number 1

Mod Ports Card Type                                 Model          Serial No.
---+-----+--------------------------------------+--------------+--------------
```

```
1   48   48-Port UPOE 10/100/1000 (RJ-45)            C9400-LC-48U     JAE21150CEW
2   10   Supervisor 1 XL Module                      C9400-SUP-1XL    JAE21200AEM
4   48   48-Port 10/100/1000 (RJ-45)                 WS-XL48D         JAE204700PH

Mod MAC addresses                     Hw   Fw           Sw                 Status
---+---------------------------------+----+------------+------------------+--------
1   E4AA.5D54.BBA4 to E4AA.5D54.BBD3 0.6  16.6.2r[FC1]  BLD_POLARIS_DEV_LA ok
2   380E.4D9B.05EC to 380E.4D9B.05F5 0.6  16.6.2r[FC1]  BLD_POLARIS_DEV_LA ok
4   E4AA.5D54.141C to E4AA.5D54.144B 0.5  16.6.2r[FC1]  BLD_POLARIS_DEV_LA ok

Mod Redundancy Role     Operating Redundancy Mode Configured Redundancy Mode
---+------------------+-------------------------+---------------------------
2   Active              sso                       sso

Switch Number 2

Mod Ports Card Type                                  Model          Serial No.
---+-----+--------------------------------------+--------------+--------------
1   48   48-Port UPOE w/ 24p mGig 24p RJ-45          C9400-LC-48UX    JAE211701E0
2   10   Supervisor 1 XL Module                      C9400-SUP-1XL    JAE21200AFT
4   48   48-Port 1 Gigabit Ethernet (SFP)            C9400-LC-48S     JAE2139034K

Mod MAC addresses                     Hw   Fw           Sw                 Status
---+---------------------------------+----+------------+------------------+--------
1   E4AA.5D54.C5A0 to E4AA.5D54.C5CF 0.7  16.6.2r[FC1]  BLD_POLARIS_DEV_LA ok
2   380E.4D9B.102C to 380E.4D9B.1035 0.6  16.6.2r[FC1]  BLD_POLARIS_DEV_LA ok
4   707D.B9CF.821C to 707D.B9CF.824B 0.1  16.6.2r[FC1]  BLD_POLARIS_DEV_LA ok

Mod Redundancy Role     Operating Redundancy Mode Configured Redundancy Mode
---+------------------+-------------------------+---------------------------
2   Standby             sso                       sso
```

```
Chassis MAC address range: 44 addresses from 380e.4d9b.05c0 to 380e.4d9b.05eb

------------------ show power detail ------------------


Switch:1

Power                                                    Fan States
Supply  Model No              Type  Capacity  Status       1     2     3     4
------  --------------------  ----  --------  -----------  ----------------------
PS1     C9400-PWR-3200AC      ac    1570 W    active       good  good  good  good
PS2     C9400-PWR-2100AC      ac    950 W     active       good  good  good  good

PS Current Configuration Mode : Combined
PS Current Operating State    : Combined

Power supplies currently active    : 2
Power supplies currently available : 2


Switch:2

Power                                                    Fan States
Supply  Model No              Type  Capacity  Status       1     2     3     4
------  --------------------  ----  --------  -----------  ----------------------
PS1     C9400-PWR-3200AC      ac    1570 W    active       good  good  good  good
PS2     C9400-PWR-2100AC      ac    950 W     active       good  good  good  good
PS3     C9400-PWR-2100AC      ac    950 W     active       good  good  good  good
PS4     C9400-PWR-2100AC      ac    n.a.      faulty       n.a.  n.a.  n.a.  n.a.

PS Current Configuration Mode : Combined
PS Current Operating State    : Combined
```

```
Power supplies currently active    : 3

Power supplies currently available : 3



Switch:1

Power Summary          Maximum

 (in Watts)    Used    Available

-------------  ------  ---------

System Power   1900    1900

Inline Power   30      620

-------------  ------  ---------

Total          1930    2520


Switch:2

Power Summary          Maximum

 (in Watts)    Used    Available

-------------  ------  ---------

System Power   2290    2290

Inline Power   41      1180

-------------  ------  ---------

Total          2331    3470



Switch:1


Automatic Linecard Shutdown : Disabled

Power Budget Mode           : Dual Sup


                           autoLC    Power                                 Out of  In

Mod  Model No              Priority  State     Budget  Instantaneous  Peak  Reset   Reset

---  --------------------  --------  --------  ------  -------------  ----  ------  -----

1    C9400-LC-48U          0         accepted  65      32             37    65      5
```

```
2    C9400-SUP-1XL         0         accepted  700     259            301   700     130
3    C9400-SUP-1XL         0         ---       700     259            301   0       130
4    WS-XL48D              1         accepted  65      32             35    65      5
--   Fan Tray              0         accepted  370     --             --    370     --
---  --------------------  --------  --------  ------  -------------  ----  ------  -----
Total 1900


Switch:2

Automatic Linecard Shutdown : Disabled
Power Budget Mode           : Dual Sup

                           autoLC    Power                                 Out of  In
Mod  Model No              Priority  State     Budget  Instantaneous  Peak  Reset   Reset
---  --------------------  --------  --------  ------  -------------  ----  ------  -----
1    C9400-LC-48UX         0         accepted  350     134            142   350     15
2    C9400-SUP-1XL         0         accepted  700     260            299   700     130
3    C9400-SUP-1XL         0         ---       700     260            299   0       130
4    C9400-LC-48S          1         accepted  170     41             41    170     5
--   Fan Tray              0         accepted  370     --             --    370     --
---  --------------------  --------  --------  ------  -------------  ----  ------  -----
Total 2290


------------------ show power inline ------------------



Available:620.0(w)  Used:30.8(w)  Remaining:589.2(w)

Interface Admin  Oper            Power(Watts)     Device              Class
                                 From PS    To Device
```

```
--------- ------ ---------- ---------- ---------- ------------------- -----


Gi1/1/0/1   auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/2   auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/3   auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/4   auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/5   auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/6   auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/7   auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/8   auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/9   auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/10  auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/11  auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/12  auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/13  auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/14  auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/15  auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/16  auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/17  auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/18  auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/19  auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/20  auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/21  auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/22  auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/23  auto   on         15.4       15.4       Ieee PD             3
Gi1/1/0/24  auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/25  auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/26  auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/27  auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/28  auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/29  auto   off        0.0        0.0        n/a                 n/a
Gi1/1/0/30  auto   off        0.0        0.0        n/a                 n/a
```

```
Gi1/1/0/31  auto   off        0.0        0.0        n/a                n/a
Gi1/1/0/32  auto   off        0.0        0.0        n/a                n/a
Gi1/1/0/33  auto   off        0.0        0.0        n/a                n/a
Gi1/1/0/34  auto   off        0.0        0.0        n/a                n/a
Gi1/1/0/35  auto   off        0.0        0.0        n/a                n/a
Gi1/1/0/36  auto   off        0.0        0.0        n/a                n/a
Gi1/1/0/37  auto   off        0.0        0.0        n/a                n/a
Gi1/1/0/38  auto   off        0.0        0.0        n/a                n/a
Gi1/1/0/39  auto   off        0.0        0.0        n/a                n/a
Gi1/1/0/40  auto   off        0.0        0.0        n/a                n/a
Gi1/1/0/41  auto   off        0.0        0.0        n/a                n/a
Gi1/1/0/42  auto   off        0.0        0.0        n/a                n/a
Gi1/1/0/43  auto   off        0.0        0.0        n/a                n/a
Gi1/1/0/44  auto   off        0.0        0.0        n/a                n/a
Gi1/1/0/45  auto   off        0.0        0.0        n/a                n/a
Gi1/1/0/46  auto   off        0.0        0.0        n/a                n/a
Gi1/1/0/47  auto   on         15.4       15.4       Ieee PD            3
Gi1/1/0/48  auto   off        0.0        0.0        n/a                n/a
--------- ------ ---------- ---------- ---------- ------------------ -----

Totals:          2    on    30.8       30.8


Available:1180.0(w)  Used:41.8(w)  Remaining:1138.2(w)

Interface Admin  Oper            Power(Watts)     Device              Class
                                 From PS    To Device
--------- ------ ---------- ---------- ---------- ------------------ -----

Gi2/1/0/1   auto   off        0.0        0.0        n/a                n/a
Gi2/1/0/2   auto   off        0.0        0.0        n/a                n/a
Gi2/1/0/3   auto   off        0.0        0.0        n/a                n/a
```

Gi2/1/0/4	auto	off	0.0	0.0	n/a	n/a
Gi2/1/0/5	auto	off	0.0	0.0	n/a	n/a
Gi2/1/0/6	auto	off	0.0	0.0	n/a	n/a
Gi2/1/0/7	auto	off	0.0	0.0	n/a	n/a
Gi2/1/0/8	auto	off	0.0	0.0	n/a	n/a
Gi2/1/0/9	auto	off	0.0	0.0	n/a	n/a
Gi2/1/0/10	auto	off	0.0	0.0	n/a	n/a
Gi2/1/0/11	auto	off	0.0	0.0	n/a	n/a
Gi2/1/0/12	auto	off	0.0	0.0	n/a	n/a
Gi2/1/0/13	auto	off	0.0	0.0	n/a	n/a
Gi2/1/0/14	auto	off	0.0	0.0	n/a	n/a
Gi2/1/0/15	auto	off	0.0	0.0	n/a	n/a
Gi2/1/0/16	auto	off	0.0	0.0	n/a	n/a
Gi2/1/0/17	auto	off	0.0	0.0	n/a	n/a
Gi2/1/0/18	auto	off	0.0	0.0	n/a	n/a
Gi2/1/0/19	auto	off	0.0	0.0	n/a	n/a
Gi2/1/0/20	auto	off	0.0	0.0	n/a	n/a
Gi2/1/0/21	auto	on	11.8	11.8	Ieee PD	4
Gi2/1/0/22	auto	off	0.0	0.0	n/a	n/a
Gi2/1/0/23	auto	off	0.0	0.0	n/a	n/a
Gi2/1/0/24	auto	off	0.0	0.0	n/a	n/a
Te2/1/0/25	auto	off	0.0	0.0	n/a	n/a
Te2/1/0/26	auto	off	0.0	0.0	n/a	n/a
Te2/1/0/27	auto	off	0.0	0.0	n/a	n/a
Te2/1/0/28	auto	off	0.0	0.0	n/a	n/a
Te2/1/0/29	auto	off	0.0	0.0	n/a	n/a
Te2/1/0/30	auto	off	0.0	0.0	n/a	n/a
Te2/1/0/31	auto	off	0.0	0.0	n/a	n/a
Te2/1/0/32	auto	off	0.0	0.0	n/a	n/a
Te2/1/0/33	auto	off	0.0	0.0	n/a	n/a
Te2/1/0/34	auto	off	0.0	0.0	n/a	n/a
Te2/1/0/35	auto	off	0.0	0.0	n/a	n/a

```
Te2/1/0/36  auto   on         30.0       30.0       Ieee PD            4

Te2/1/0/37  auto   off        0.0        0.0        n/a                n/a

Te2/1/0/38  auto   off        0.0        0.0        n/a                n/a

Te2/1/0/39  auto   off        0.0        0.0        n/a                n/a

Te2/1/0/40  auto   off        0.0        0.0        n/a                n/a

Te2/1/0/41  auto   off        0.0        0.0        n/a                n/a

Te2/1/0/42  auto   off        0.0        0.0        n/a                n/a

Te2/1/0/43  auto   off        0.0        0.0        n/a                n/a

Te2/1/0/44  auto   off        0.0        0.0        n/a                n/a

Te2/1/0/45  auto   off        0.0        0.0        n/a                n/a

Te2/1/0/46  auto   off        0.0        0.0        n/a                n/a

Te2/1/0/47  auto   off        0.0        0.0        n/a                n/a

Te2/1/0/48  auto   off        0.0        0.0        n/a                n/a

--------- ------ ---------- ---------- ---------- ------------------ -----


Totals:          2    on    41.8       41.8


------------------ show controllers power inline module 1 ------------------


 Alchemy instance 0, address 0

Pending event flag    : N N N N N N N N N N N N
Current State         : 00 00 10 93 D8 E8
Current Event         : 11 11 14 00 00 00
Timers                : 22 00 00 00 00 00 00 00 00 00 00 00
Error State           : 14 14 14 14 14 14
Error Code            : 00 00 00 00 00 00 00 00 00 00 00 00
Power Status          : N N N N N N N N N N N N
Auto Config           : N N N N N N N N N N N N
Disconnect            : N N N N N N N N N N N N
Detection Status      : F0 00 10 00 00 00
Current Class         : 00 00 00 00 00 00
Tweetie debug         : 00 00 00 00
POE Commands pending at sub:
    Command 0 on each port : 00 00 00 00 00 00
    Command 1 on each port : 00 00 00 00 00 00
    Command 2 on each port : 00 00 00 00 00 00
    Command 3 on each port : 00 00 00 00 00 00
 Alchemy instance 1, address E

Pending event flag    : N N N N N N N N N N N N
Current State         : 00 00 10 93 D8 E8
Current Event         : 11 11 11 00 00 00
Timers                : 2A 00 00 00 00 00 00 00 00 00 00 00
Error State           : 26 26 26 26 26 2A
Error Code            : 00 00 00 00 00 00 00 00 00 00 00 00
```

```
 Power Status          : N N N N N N N N N N N N
 Auto Config           : N N N N N N N N N N N N
 Disconnect            : N N N N N N N N N N N N
 Detection Status      : F0 00 00 00 00 00
 Current Class         : 00 00 00 00 00 00
 Tweetie debug         : 00 00 00 00
 POE Commands pending at sub:
     Command 0 on each port : 00 00 00 00 00 00
     Command 1 on each port : 00 00 00 00 00 00
     Command 2 on each port : 00 00 00 00 00 00
     Command 3 on each port : 00 00 00 00 00 00

------------------ show platform software ilpower details ------------------


ILP Port Configuration for interface Gi1/1/0/1

    Initialization Done:   Yes

    ILP Supported:         Yes

    ILP Enabled:           Yes

    POST:                  Yes

    Detect On:             No

    Powered Device Detected            No

    Powered Device Class Done          No

    Cisco Powered Device:              No

    Power is On:           No

    Power Denied:          No

    Powered Device Type:               Null

    Powered Device Class:              Null

    Power State:           NULL

    Current State:         NGWC_ILP_DETECTING_S

    Previous State:        NGWC_ILP_DETECTING_S

    Requested Power in milli watts:       0

    Short Circuit Detected:                 0

    Short Circuit Count:             0

    Cisco Powered Device Detect Count: 0

    Spare Pair mode:       0

    Spare Pair Architecture:       1

    Signal Pair Power allocation in milli watts: 0

    Spare Pair Power On:   0

    Powered Device power state:        0
```

```
    Timer:

        Power Good:        Stopped

        Power Denied:      Stopped

        Cisco Powered Device Detect:   Stopped

        IEEE Detect:       Stopped

        IEEE Short:        Stopped

        Link Down:         Stopped

        Voltage sense:            Stopped
ILP Port Configuration for interface Gi1/1/0/2

    Initialization Done:   Yes

    ILP Supported:         Yes

    ILP Enabled:           Yes

    POST:                  Yes

    Detect On:             No

    Powered Device Detected            No

    Powered Device Class Done          No

    Cisco Powered Device:              No

    Power is On:           No

    Power Denied:          No

    Powered Device Type:               Null

    Powered Device Class:              Null

    Power State:           NULL

    Current State:         NGWC_ILP_DETECTING_S

    Previous State:        NGWC_ILP_DETECTING_S

    Requested Power in milli watts:       0

    Short Circuit Detected:                 0

    Short Circuit Count:             0

    Cisco Powered Device Detect Count: 0

    Spare Pair mode:       0

    Spare Pair Architecture:       1

    Signal Pair Power allocation in milli watts: 0

    Spare Pair Power On:   0
```

```
    Powered Device power state:        0

    Timer:

        Power Good:        Stopped

        Power Denied:      Stopped

        Cisco Powered Device Detect:   Stopped

        IEEE Detect:       Stopped

        IEEE Short:        Stopped

        Link Down:         Stopped

        Voltage sense:             Stopped

------------------ show platform software ilpower system 3 ------------------


ILP System Configuration
    Slot:                 3
    ILP Supported:        Yes
    Total Power:          1101000
    Used Power:           49400
    Initialization Done:  Yes
    Post Done:            Yes
    Post Result Logged:   No
    Post Result:          Success
    Power Summary:
        Module:           0
        Power Total:      1101000
        Power Used:       49400
        Power Threshold:  0
        Operation Status: On
    Pool:                 3
    Pool Valid:           Yes
    Total Power:          1101000
    Power Usage:          49400

------------------ show power inline Gi1/1/0/1 detail ------------------


 Interface: Gi1/1/0/1

 Inline Power Mode: auto

 Operational status: off

 Device Detected: no

 Device Type: n/a

 IEEE Class: n/a

 Discovery mechanism used/configured: Ieee and Cisco

 Police: off


 Power Allocated
```

```
 Admin Value: 60.0
 Power drawn from the source: 0.0
 Power available to the device: 0.0

 Actual consumption
 Measured at the port: 0.0
 Maximum Power drawn by the device since powered on: 0.0

 Absent Counter: 0
 Over Current Counter: 0
 Short Current Counter: 0
 Invalid Signature Counter: 0
 Power Denied Counter: 0

 Power Negotiation Used: None
 LLDP Power N00001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 15 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 16 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 17 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 18 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 19 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
```

```
Slot 6 PORT 20 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 21 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 22 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 23 Registers
0x0000003A    0x00000034    0x0000001E    0x00000000
0x000F050F    0x0000E621    0x0000000A    0x00000000
 Valid PD Detected on signal pair
 class value on signal pair = 3
 class done port status 1 on signal pair : TRUE
 power good status on signal pair : GOOD
 power enable status on signal pair : GOOD
Slot 6 PORT 24 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 25 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 26 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 27 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 28 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
```

```
Slot 6 PORT 29 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 30 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 31 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 32 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 33 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 34 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 35 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 36 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 37 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 38 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 39 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
```

```
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 40 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 41 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 42 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 43 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 44 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 45 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 46 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 47 Registers
0x0000003A    0x00000034    0x0000001E    0x00000000
0x000F050F    0x0000E629    0x0000000A    0x00000000
 Valid PD Detected on signal pair
 class value on signal pair = 3
 class done port status 1 on signal pair : TRUE
 power good status on signal pair : GOOD
 power enable status on signal pair : GOOD
Slot 6 PORT 48 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
```

```
0x000F000F    0x00000000    0x00000001    0x00000000
egotiation --Sent to PD--      --Rcvd from PD--
   Power Type:          -                   -
   Power Source:        -                   -
   Power Priority:      -                   -
   Requested Power(W):  -                   -
   Allocated Power(W):  -                   -

Four-Pair PoE Supported: Yes
Spare Pair Power Enabled: No
Four-Pair PD Architecture: N/A
------------------ show power inline Te2/1/0/26 detail ------------------
Interface: Te2/1/0/26
 Inline Power Mode: auto
 Operational status: off
 Device Detected: no
 Device Type: n/a
 IEEE Class: n/a
 Discovery mechanism used/configured: Ieee and Cisco
 Police: off

 Power Allocated
 Admin Value: 60.0
 Power drawn from the source: 0.0
 Power available to the device: 0.0

 Actual consumption
 Measured at the port: 0.0
 Maximum Power drawn by the device since powered on: 0.0

 Absent Counter: 0
 Over Current Counter: 0
```

```
 Short Current Counter: 0

 Invalid Signature Counter: 0

 Power Denied Counter: 0


 Power Negotiation Used: None

 LLDP Power Negotiation --Sent to PD--      --Rcvd from PD--

   Power Type:          -                    -

   Power Source:        -                    -

   Power Priority:      -                    -

   Requested Power(W):  -                    -

   Allocated Power(W):  -                    -


Four-Pair PoE Supported: Yes

Spare Pair Power Enabled: No

Four-Pair PD Architecture: N/A

------------------ show power inline police ------------------


Available:620.0(w)  Used:30.8(w)  Remaining:589.2(w)


Interface Admin  Oper       Admin      Oper       Cutoff Oper

          State  State      Police     Police     Power  Power

--------- ------ ---------- ---------- ---------- ------ -----

Gi1/1/0/1   auto   off        none       n/a        n/a    n/a

Gi1/1/0/2   auto   off        none       n/a        n/a    n/a

Gi1/1/0/3   auto   off        none       n/a        n/a    n/a

Gi1/1/0/4   auto   off        none       n/a        n/a    n/a

Gi1/1/0/5   auto   off        none       n/a        n/a    n/a

Gi1/1/0/6   auto   off        none       n/a        n/a    n/a

Gi1/1/0/7   auto   off        none       n/a        n/a    n/a

Gi1/1/0/8   auto   off        none       n/a        n/a    n/a

Gi1/1/0/9   auto   off        none       n/a        n/a    n/a

Gi1/1/0/10  auto   off        none       n/a        n/a    n/a
```

```
Gi1/1/0/11  auto   off        none       n/a        n/a    n/a
Gi1/1/0/12  auto   off        none       n/a        n/a    n/a
Gi1/1/0/13  auto   off        none       n/a        n/a    n/a
Gi1/1/0/14  auto   off        none       n/a        n/a    n/a
Gi1/1/0/15  auto   off        none       n/a        n/a    n/a
Gi1/1/0/16  auto   off        none       n/a        n/a    n/a
Gi1/1/0/17  auto   off        none       n/a        n/a    n/a
Gi1/1/0/18  auto   off        none       n/a        n/a    n/a
Gi1/1/0/19  auto   off        none       n/a        n/a    n/a
Gi1/1/0/20  auto   off        none       n/a        n/a    n/a
Gi1/1/0/21  auto   off        none       n/a        n/a    n/a
Gi1/1/0/22  auto   off        none       n/a        n/a    n/a
Gi1/1/0/23  auto   on         none       n/a        n/a    6.9
Gi1/1/0/24  auto   off        none       n/a        n/a    n/a
Gi1/1/0/25  auto   off        none       n/a        n/a    n/a
Gi1/1/0/26  auto   off        none       n/a        n/a    n/a
Gi1/1/0/27  auto   off        none       n/a        n/a    n/a
Gi1/1/0/28  auto   off        none       n/a        n/a    n/a
Gi1/1/0/29  auto   off        none       n/a        n/a    n/a
Gi1/1/0/30  auto   off        none       n/a        n/a    n/a
Gi1/1/0/31  auto   off        none       n/a        n/a    n/a
Gi1/1/0/32  auto   off        none       n/a        n/a    n/a
Gi1/1/0/33  auto   off        none       n/a        n/a    n/a
Gi1/1/0/34  auto   off        none       n/a        n/a    n/a
Gi1/1/0/35  auto   off        none       n/a        n/a    n/a
Gi1/1/0/36  auto   off        none       n/a        n/a    n/a
Gi1/1/0/37  auto   off        none       n/a        n/a    n/a
Gi1/1/0/38  auto   off        none       n/a        n/a    n/a
Gi1/1/0/39  auto   off        none       n/a        n/a    n/a
Gi1/1/0/40  auto   off        none       n/a        n/a    n/a
Gi1/1/0/41  auto   off        none       n/a        n/a    n/a
Gi1/1/0/42  auto   off        none       n/a        n/a    n/a
```

```
Gi1/1/0/43  auto   off        none       n/a        n/a    n/a
Gi1/1/0/44  auto   off        none       n/a        n/a    n/a
Gi1/1/0/45  auto   off        none       n/a        n/a    n/a
Gi1/1/0/46  auto   off        none       n/a        n/a    n/a
Gi1/1/0/47  auto   on         none       n/a        n/a    8.8
Gi1/1/0/48  auto   off        none       n/a        n/a    n/a
--------- ------ ---------- ---------- ---------- ------ -----
Totals:                                                   15.7

Available:1180.0(w)  Used:41.8(w)  Remaining:1138.2(w)

Interface Admin  Oper       Admin      Oper       Cutoff Oper
          State  State      Police     Police     Power  Power
--------- ------ ---------- ---------- ---------- ------ -----
Gi2/1/0/1   auto   off        none       n/a        n/a    n/a
Gi2/1/0/2   auto   off        none       n/a        n/a    n/a
Gi2/1/0/3   auto   off        none       n/a        n/a    n/a
Gi2/1/0/4   auto   off        none       n/a        n/a    n/a
Gi2/1/0/5   auto   off        none       n/a        n/a    n/a
Gi2/1/0/6   auto   off        none       n/a        n/a    n/a
Gi2/1/0/7   auto   off        none       n/a        n/a    n/a
Gi2/1/0/8   auto   off        none       n/a        n/a    n/a
Gi2/1/0/9   auto   off        none       n/a        n/a    n/a
Gi2/1/0/10  auto   off        none       n/a        n/a    n/a
Gi2/1/0/11  auto   off        none       n/a        n/a    n/a
Gi2/1/0/12  auto   off        none       n/a        n/a    n/a
Gi2/1/0/13  auto   off        none       n/a        n/a    n/a
Gi2/1/0/14  auto   off        none       n/a        n/a    n/a
Gi2/1/0/15  auto   off        none       n/a        n/a    n/a
Gi2/1/0/16  auto   off        none       n/a        n/a    n/a
Gi2/1/0/17  auto   off        none       n/a        n/a    n/a
Gi2/1/0/18  auto   off        none       n/a        n/a    n/a
Gi2/1/0/19  auto   off        none       n/a        n/a    n/a
```

```
Gi2/1/0/20  auto   off        none       n/a        n/a    n/a
Gi2/1/0/21  auto   on         none       n/a        n/a    5.7
Gi2/1/0/22  auto   off        none       n/a        n/a    n/a
Gi2/1/0/23  auto   off        none       n/a        n/a    n/a
Gi2/1/0/24  auto   off        none       n/a        n/a    n/a
Te2/1/0/25  auto   off        none       n/a        n/a    n/a
Te2/1/0/26  auto   off        none       n/a        n/a    n/a
Te2/1/0/27  auto   off        none       n/a        n/a    n/a
Te2/1/0/28  auto   off        none       n/a        n/a    n/a
Te2/1/0/29  auto   off        none       n/a        n/a    n/a
Te2/1/0/30  auto   off        none       n/a        n/a    n/a
Te2/1/0/31  auto   off        none       n/a        n/a    n/a
Te2/1/0/32  auto   off        none       n/a        n/a    n/a
Te2/1/0/33  auto   off        none       n/a        n/a    n/a
Te2/1/0/34  auto   off        none       n/a        n/a    n/a
Te2/1/0/35  auto   off        none       n/a        n/a    n/a
Te2/1/0/36  auto   on         none       n/a        n/a    10.3
Te2/1/0/37  auto   off        none       n/a        n/a    n/a
Te2/1/0/38  auto   off        none       n/a        n/a    n/a
Te2/1/0/39  auto   off        none       n/a        n/a    n/a
Te2/1/0/40  auto   off        none       n/a        n/a    n/a
Te2/1/0/41  auto   off        none       n/a        n/a    n/a
Te2/1/0/42  auto   off        none       n/a        n/a    n/a
Te2/1/0/43  auto   off        none       n/a        n/a    n/a
Te2/1/0/44  auto   off        none       n/a        n/a    n/a
Te2/1/0/45  auto   off        none       n/a        n/a    n/a
Te2/1/0/46  auto   off        none       n/a        n/a    n/a
Te2/1/0/47  auto   off        none       n/a        n/a    n/a
Te2/1/0/48  auto   off        none       n/a        n/a    n/a
--------- ------ ---------- ---------- ---------- ------ -----
Totals:                                                   16.0
------------------ show platform frontend-controller manager 0 1 ------------------
```

```
 showing manager info: 1
Tx cmd cnt SYS   App             24681
Rx cmd cnt SYS   App             24681
Tx cmd ignore SYS   App          0
Tx cmd Q full SYS   App          0
Tx cmd cnt SYS   App             17706
Rx cmd cnt SYS   App             11804
Tx cmd ignore SYS   App          0
Tx cmd Q full SYS   App          0
Tx cmd cnt SYS   App             0
Rx cmd cnt SYS   App             0
Tx cmd ignore SYS   App          0
Tx cmd Q full SYS   App          0
Tx cmd cnt POE   App             0
Rx cmd cnt POE   App             0
Tx cmd ignore POE   App          0
Tx cmd Q full POE   App          0
Tx cmd cnt FRUFE App             0
Rx cmd cnt FRUFE App             0
Tx cmd ignore FRUFE App          0
Tx cmd Q full FRUFE App          0
Tx cmd cnt SYS   App             1744
Rx cmd cnt SYS   App             993
Tx cmd ignore SYS   App          0
Tx cmd Q full SYS   App          0
Tx cmd cnt IMAGE App             13809
Rx cmd cnt IMAGE App             13808
Tx cmd ignore IMAGE App          0
Tx cmd Q full IMAGE App          0
Tx cmd cnt STACK App             0
Rx cmd cnt STACK App             0
Tx cmd ignore STACK App          0
Tx cmd Q full STACK App          0
Tx cmd cnt J2A   App             0
Rx cmd cnt J2A   App             0
Tx cmd ignore J2A   App          0
Tx cmd Q full J2A   App          0
Tx cmd cnt THERM App             0
Rx cmd cnt THERM App             0
Tx cmd ignore THERM App          0
Tx cmd Q full THERM App          0
Tx cmd cnt GPIO  App             0
Rx cmd cnt GPIO  App             255
Tx cmd ignore GPIO  App          255
Tx cmd Q full GPIO  App          255
Tx cmd cnt POE_E App             -369383984
Rx cmd cnt POE_E App             -369346528
Tx cmd ignore POE_E App          -1826379312
Tx cmd Q full POE_E App          -394693324
Tx cmd cnt DMSG  App             0
Rx cmd cnt DMSG  App             0
Tx cmd ignore DMSG  App          0
Tx cmd Q full DMSG  App          255
Tx reg cnt                       16
Rx reg cnt                       16
Tx reg ignore                    0
Tx reg Q full                    0
Rx invalid frame                 0
Rx invalid App                   748
Rx invalid Seq                   0
Rx invalid checksum              0
Nack cnt                         0
```

```
Send Break count                 0
Early Send Break count           0
Retransmission cnt               0

------------------ show platform frontend-controller subordinate 0 1 ------------------


 showing sub info: 1
State                OK
Last Reset Reason    UNKNOWN REASON
UART FE Error        0
UART PE Error        0
UART DOR Error       0
Rx Buf Overflow      0
Rx Buf Underflow     0
Tx Buf Full          0
Rx Bad Endbyte       0
PLE Invalid App      0
PLE Disabled App     0
PLE Invalid Data     0
PLE Invalid Flags    0
PLE App Error        0
PLE Lost Ctxt        0
PLE Invalid Reg      0
PLE Invalid Reg Len  0
PLE Invalid Msg Len  0
SLE Poe No Port      0
SLE I2C Busy         0
SLE I2C Error        0
SLE I2C Timeout      0
SLE Invalid Reg Len  0
SLE Msg Underrun     0

------------------ show platform frontend-controller version 0 1 ------------------


Switch 1 MCU:
Software Version   0.109
System Type        6
Device Id          2
Device Revision    0
Hardware Version   41
Bootloader Version 16

------------------ test platform hardware poe get switch 1 1 global ------------------




Global Register for slot 6

0x00FFFFFF    0x00FFFFFF    0x80001304    0x000000C1

0x00000000    0x00000700    0x0FFD0FFD    0x00000015

0x0000000E    0x00000000    0x00026195    0x00003999

0x00000700    0x00000000    0x00000000    0x00000000

0x00000000    0x00000000    0x00000000    0x00000000
```

```
 POE FW loaded successfully

 POE health status : G

------------------ test platform hardware poe get switch 2 1 port ------------------
```

```
UUT1#OOD

 POE PSE FW ver :19

 POE Abstraction layer FW ver = 14

Slot 6 PORT 1 Registers

0x00000001    0x00000001    0x0000001E    0x00000000

0x000F000F    0x00000000    0x00000001    0x00000000

Slot 6 PORT 2 Registers

0x00000001    0x00000006    0x0000001E    0x00000000

0x000F000F    0x00000000    0x00000001    0x00000000

Slot 6 PORT 3 Registers

0x00000001    0x00000006    0x0000001E    0x00000000

0x000F000F    0x00000000    0x00000001    0x00000000

Slot 6 PORT 4 Registers

0x00000001    0x00000006    0x0000001E    0x00000000

0x000F000F    0x00000000    0x00000001    0x00000000

Slot 6 PORT 5 Registers

0x00000001    0x00000006    0x0000001E    0x00000000

0x000F000F    0x00000000    0x00000001    0x00000000

Slot 6 PORT 6 Registers

0x00000001    0x00000006    0x0000001E    0x00000000

0x000F000F    0x00000000    0x00000001    0x00000000

Slot 6 PORT 7 Registers

0x00000001    0x00000006    0x0000001E    0x00000000

0x000F000F    0x00000000    0x00000001    0x00000000
```

```
Slot 6 PORT 8 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 9 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 10 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 11 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 12 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 13 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 14 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 15 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 16 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 17 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 18 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
```

```
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 19 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 20 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 21 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 22 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 23 Registers
0x0000003A    0x00000034    0x0000001E    0x00000000
0x000F050F    0x0000E621    0x0000000A    0x00000000
 Valid PD Detected on signal pair
 class value on signal pair = 3
 class done port status 1 on signal pair : TRUE
 power good status on signal pair : GOOD
 power enable status on signal pair : GOOD
Slot 6 PORT 24 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 25 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 26 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 27 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
```

```
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 28 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 29 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 30 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 31 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 32 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 33 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 34 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 35 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 36 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 37 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 38 Registers
```

```
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 39 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 40 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 41 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 42 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 43 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 44 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 45 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 46 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 6 PORT 47 Registers
0x0000003A    0x00000034    0x0000001E    0x00000000
0x000F050F    0x0000E62A    0x0000000A    0x00000000
 Valid PD Detected on signal pair
 class value on signal pair = 3
 class done port status 1 on signal pair : TRUE
```

```
 power good status on signal pair : GOOD
 power enable status on signal pair : GOOD
Slot 6 PORT 48 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000

Global Register for slot 11
0x00FFFFFF    0x00FFFFFF    0x80001304    0x000000C1
0x00000000    0x00000700    0x0FFD0FFD    0x00000015
0x0000000E    0x00000000    0x0002503F    0x000039AF
0x00000700    0x00000000    0x00000000    0x00000000
0x00000000    0x00000000    0x00000000    0x00000000

 POE FW loaded successfully
 POE health status : GOOD
 POE PSE FW ver :19
 POE Abstraction layer FW ver = 14
Slot 11 PORT 1 Registers
0x00000001    0x00000001    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 2 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 3 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 4 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 5 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
```

```
Slot 11 PORT 6 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 7 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 8 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 9 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 10 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 11 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 12 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 13 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 14 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 15 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 16 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
```

```
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 17 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 18 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 19 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 20 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 21 Registers
0x0039003A    0x00060044    0x011E011E    0x00000000
0x09B809B8    0xE60DE60F    0x0009000A    0x00000000
 Valid PD Detected on signal pair
 class value on signal pair = 4
 class done port status 1 on signal pair : TRUE
 power good status on signal pair : GOOD
 power good status on spare pair : GOOD
 power enable status on signal pair : GOOD
 power enable status on spare pair : GOOD
Slot 11 PORT 22 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 23 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 24 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
```

```
Slot 11 PORT 25 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 26 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 27 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 28 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 29 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 30 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 31 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 32 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 33 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 34 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 35 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
```

```
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 36 Registers
0x0000003A    0x00000044    0x0000011E    0x00000000
0x000F09B8    0x0000E631    0x0000000A    0x00000000
 Valid PD Detected on signal pair
 class value on signal pair = 4
 class done port status 1 on signal pair : TRUE
 power good status on signal pair : GOOD
 power enable status on signal pair : GOOD
Slot 11 PORT 37 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 38 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 39 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 40 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 41 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 42 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 43 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 44 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
```

```
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 45 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 46 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 47 Registers
0x00000001    0x00000006    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000
Slot 11 PORT 48 Registers
0x00000001    0x00000001    0x0000001E    0x00000000
0x000F000F    0x00000000    0x00000001    0x00000000

------------------ show platform software ilpower details ------------------


ILP Port Configuration for interface Gi1/1/0/1
    Initialization Done:   Yes
    ILP Supported:         Yes
    ILP Enabled:           Yes
    POST:                  Yes
    Detect On:             No
    Powered Device Detected            No
    Powered Device Class Done          No
    Cisco Powered Device:              No
    Power is On:           No
    Power Denied:          No
    Powered Device Type:               Null
    Powered Device Class:              Null
    Power State:           NULL
    Current State:         NGWC_ILP_DETECTING_S
    Previous State:        NGWC_ILP_DETECTING_S
```

```
Requested Power in milli watts:       0

Short Circuit Detected:                 0

Short Circuit Count:             0

Cisco Powered Device Detect Count: 0

Spare Pair mode:       0

Spare Pair Architecture:       1

Signal Pair Power allocation in milli watts: 0

Spare Pair Power On:   0

Powered Device power state:        0

Timer:

    Power Good:        Stopped

    Power Denied:      Stopped

    Cisco Powered Device Detect:   Stopped

    IEEE Detect:       Stopped

    IEEE Short:        Stopped

    Link Down:         Stopped

    Voltage sense:            Stopped
```

speed

To specify the speed of a port, use the **speed** command in interface configuration mode. To return to the default value, use the **no** form of this command.

Note Available configuration options depend on the switch model and transceiver module installed. Options include 10, 100, 1000, 2500, 5000, 10000, 25000, 40000, 100000

speed {**10** | **100** | **1000** | **2500** | **5000** | **auto** [{**10** | **100** | **1000** | **2500** | **5000**}] | **nonegotiate**}
no speed

Syntax Description

10	Specifies that the port runs at 10 Mbps.
100	Specifies that the port runs at 100 Mbps.
1000	Specifies that the port runs at 1000 Mbps. This option is valid and visible only on 10/100/1000 Mb/s ports.
2500	Specifies that the port runs at 2500 Mbps. This option is valid and visible only on multi-Gigabit-supported Ethernet ports.
5000	Specifies that the port runs at 5000 Mbps. This option is valid and visible only on multi-Gigabit-supported Ethernet ports.
auto	Detects the speed at which the port should run, automatically, based on the port at the other end of the link. If you use the **10**, **100**, **1000**, **2500**, or **5000** keyword with the **auto** keyword, the port autonegotiates only at the specified speeds.
nonegotiate	Disables autonegotiation, and the port runs at 1000 Mbps.

Command Default

The default is **auto**.

Command Modes

Interface configuration (config-if)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

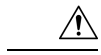
You cannot configure speed on 10-Gigabit Ethernet ports.

Except for the 1000BASE-T small form-factor pluggable (SFP) modules, you can configure the speed to not negotiate (**nonegotiate**) when an SFP module port is connected to a device that does not support autonegotiation.

The keywords, **2500** and **5000** are visible only on multi-Gigabit (m-Gig) Ethernet supporting devices.

If the speed is set to **auto**, the switch negotiates with the device at the other end of the link for the speed setting, and then forces the speed setting to the negotiated value. The duplex setting remains configured on each end of the link, which might result in a duplex setting mismatch.

If both ends of the line support autonegotiation, we highly recommend the default autonegotiation settings. If one interface supports autonegotiation and the other end does not, use the auto setting on the supported side, but set the duplex and speed on the other side.



Caution Changing the interface speed and duplex mode configuration might shut down and re-enable the interface during the reconfiguration.

For guidelines on setting the switch speed and duplex parameters, see the "Configuring Interface Characteristics" chapter in the software configuration guide for this release.

Verify your settings using the **show interfaces** privileged EXEC command.

Examples

The following example shows how to set speed on a port to 100 Mbps:

```
Device(config)# interface gigabitethernet1/0/1
Device(config-if)# speed 100
```

The following example shows how to set a port to autonegotiate at only 10 Mbps:

```
Device(config)# interface gigabitethernet1/0/1
Device(config-if)# speed auto 10
```

The following example shows how to set a port to autonegotiate at only 10 or 100 Mbps:

```
Device(config)# interface gigabitethernet1/0/1
Device(config-if)# speed auto 10 100
```

switchport block

To prevent unknown multicast or unicast packets from being forwarded, use the **switchport block** command in interface configuration mode. To allow forwarding unknown multicast or unicast packets, use the **no** form of this command.

switchport block {**multicast** | **unicast**}
no switchport block {**multicast** | **unicast**}

Syntax Description

multicast	Specifies that unknown multicast traffic should be blocked. **Note** Only pure Layer 2 multicast traffic is blocked. Multicast packets that contain IPv4 or IPv6 information in the header are not blocked.
unicast	Specifies that unknown unicast traffic should be blocked.

Command Default

Unknown multicast and unicast traffic is not blocked.

Command Modes

Interface configuration (config-if)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

By default, all traffic with unknown MAC addresses is sent to all ports. You can block unknown multicast or unicast traffic on protected or nonprotected ports. If unknown multicast or unicast traffic is not blocked on a protected port, there could be security issues.

With multicast traffic, the port blocking feature blocks only pure Layer 2 packets. Multicast packets that contain IPv4 or IPv6 information in the header are not blocked.

Blocking unknown multicast or unicast traffic is not automatically enabled on protected ports; you must explicitly configure it.

For more information about blocking packets, see the software configuration guide for this release.

This example shows how to block unknown unicast traffic on an interface:

```
Device(config-if)# switchport block unicast
```

You can verify your setting by entering the **show interfaces** *interface-id* **switchport** privileged EXEC command.

system mtu

To set the global maximum packet size or MTU size for switched packets on Gigabit Ethernet and 10-Gigabit Ethernet ports, use the **system mtu** command in global configuration mode. To restore the global MTU value to its default value, use the **no** form of this command.

system mtu *bytes*
no system mtu

Syntax Description

bytes	The global MTU size in bytes. The range is 1500 to 9216 bytes; the default is 1500 bytes.

Command Default

The default MTU size for all ports is 1500 bytes.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

You can verify your setting by entering the **show system mtu** privileged EXEC command.

The switch does not support the MTU on a per-interface basis.

If you enter a value that is outside the allowed range for the specific type of interface, the value is not accepted.

Examples

This example shows how to set the global system MTU size to 6000 bytes:

```
Device(config)# system mtu 6000
Global Ethernet MTU is set to 6000 bytes.
Note: this is the Ethernet payload size, not the total
Ethernet frame size, which includes the Ethernet
header/trailer and possibly other tags, such as ISL or
802.1q tags.
```

voice-signaling vlan (network-policy configuration)

To create a network-policy profile for the voice-signaling application type, use the **voice-signaling vlan** command in network-policy configuration mode. To delete the policy, use the **no** form of this command.

voice-signaling vlan {*vlan-id* [{**cos** *cos-value* | **dscp** *dscp-value*}] | **dot1p** [{**cos** *l2-priority* | **dscp** *dscp*}] | **none** | **untagged**}

Syntax Description

vlan-id	(Optional) The VLAN for voice traffic. The range is 1 to 4094.
cos *cos-value*	(Optional) Specifies the Layer 2 priority class of service (CoS) for the configured VLAN. The range is 0 to 7; the default is 5.
dscp *dscp-value*	(Optional) Specifies the differentiated services code point (DSCP) value for the configured VLAN. The range is 0 to 63; the default is 46.
dot1p	(Optional) Configures the phone to use IEEE 802.1p priority tagging and to use VLAN 0 (the native VLAN).
none	(Optional) Does not instruct the Cisco IP phone about the voice VLAN. The phone uses the configuration from the phone key pad.
untagged	(Optional) Configures the phone to send untagged voice traffic. This is the default for the phone.

Command Default

No network-policy profiles for the voice-signaling application type are defined.

The default CoS value is 5.

The default DSCP value is 46.

The default tagging mode is untagged.

Command Modes

Network-policy profile configuration

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

Use the **network-policy profile** global configuration command to create a profile and to enter network-policy profile configuration mode.

The voice-signaling application type is for network topologies that require a different policy for voice signaling than for voice media. This application type should not be advertised if all of the same network policies apply as those advertised in the voice policy TLV.

When you are in network-policy profile configuration mode, you can create the profile for voice-signaling by specifying the values for VLAN, class of service (CoS), differentiated services code point (DSCP), and tagging mode.

These profile attributes are contained in the Link Layer Discovery Protocol for Media Endpoint Devices (LLDP-MED) network-policy time-length-value (TLV).

To return to privileged EXEC mode from the network-policy profile configuration mode, enter the **exit** command.

This example shows how to configure voice-signaling for VLAN 200 with a priority 2 CoS:

```
Device(config)# network-policy profile 1
Device(config-network-policy)# voice-signaling vlan 200 cos 2
```

This example shows how to configure voice-signaling for VLAN 400 with a DSCP value of 45:

```
Device(config)# network-policy profile 1
Device(config-network-policy)# voice-signaling vlan 400 dscp 45
```

This example shows how to configure voice-signaling for the native VLAN with priority tagging:

```
Device(config-network-policy)# voice-signaling vlan dot1p cos 4
```

voice vlan (network-policy configuration)

To create a network-policy profile for the voice application type, use the **voice vlan** command in network-policy configuration mode. To delete the policy, use the **no** form of this command.

voice vlan {*vlan-id* [{**cos** *cos-value* | **dscp** *dscp-value*}] | **dot1p** [{**cos** *l2-priority* | **dscp** *dscp*}] | **none** | **untagged**}

Syntax Description

vlan-id	(Optional) The VLAN for voice traffic. The range is 1 to 4094.
cos *cos-value*	(Optional) Specifies the Layer 2 priority class of service (CoS) for the configured VLAN. The range is 0 to 7; the default is 5.
dscp *dscp-value*	(Optional) Specifies the differentiated services code point (DSCP) value for the configured VLAN. The range is 0 to 63; the default is 46.
dot1p	(Optional) Configures the phone to use IEEE 802.1p priority tagging and to use VLAN 0 (the native VLAN).
none	(Optional) Does not instruct the Cisco IP phone about the voice VLAN. The phone uses the configuration from the phone key pad.
untagged	(Optional) Configures the phone to send untagged voice traffic. This is the default for the phone.

Command Default

No network-policy profiles for the voice application type are defined.

The default CoS value is 5.

The default DSCP value is 46.

The default tagging mode is untagged.

Command Modes

Network-policy profile configuration

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced.

Usage Guidelines

Use the **network-policy profile** global configuration command to create a profile and to enter network-policy profile configuration mode.

The voice application type is for dedicated IP telephones and similar devices that support interactive voice services. These devices are typically deployed on a separate VLAN for ease of deployment and enhanced security through isolation from data applications.

When you are in network-policy profile configuration mode, you can create the profile for voice by specifying the values for VLAN, class of service (CoS), differentiated services code point (DSCP), and tagging mode.

These profile attributes are contained in the Link Layer Discovery Protocol for Media Endpoint Devices (LLDP-MED) network-policy time-length-value (TLV).

To return to privileged EXEC mode from the network-policy profile configuration mode, enter the **exit** command.

This example shows how to configure the voice application type for VLAN 100 with a priority 4 CoS:

```
Device(config)# network-policy profile 1
Device(config-network-policy)# voice vlan 100 cos 4
```

This example shows how to configure the voice application type for VLAN 100 with a DSCP value of 34:

```
Device(config)# network-policy profile 1
Device(config-network-policy)# voice vlan 100 dscp 34
```

This example shows how to configure the voice application type for the native VLAN with priority tagging:

```
Device(config-network-policy)# voice vlan dot1p cos 4
```