



## OSCP Commands

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OSCP (Optical Supervisory Channel Protocol) provides out-of-band network management over a 33rd channel. Use the following commands to configure and monitor OSCP operations.

# clear oscp

To clear OSCP statistics or traffic counters, use the **clear oscp** command.

**clear oscp** { **statistics** | **traffic** }

Syntax Description	statistics	Clears OSCP statistics that can be used to debug the protocol, for example:
		<ul style="list-style-type: none"> <li>• The hold-down count statistic specifies how many times a hold down has been applied to avoid excessive generation of OSCP Hello packets.</li> <li>• The Hello Tx and Rx statistics indicate the number of Hello packets that have been transmitted and received at an interface.</li> <li>• The OSCP go-down statistic indicates the number of times an interface has gone out of the two-way state.</li> </ul>
	traffic	Clears OSCP control-traffic counters that indicate the number of different protocol packets that were transmitted over the optical supervisory channel.

**Defaults** None

**Command Modes** Privileged EXEC

**Command History** This table includes the following release-specific history entries:

- EV-Release
- SV-Release
- S-Release

EV-Release	Modification
12.1(10)EV	This command was first introduced.
SV-Release	Modification
12.2(18)SV	This command was integrated in this release.
S-Release	Modification
12.2(22)S	This command was integrated in this release.

**Usage Guidelines** Use this command to perform a one-time clear of the specified OSCP statistics or traffic tables. This command is useful for debugging or monitoring OSCP performance.

**Examples** The following example shows how to clear OSCP statistics and traffic tables.

```
Switch# clear oscp statistics
Switch# clear oscp traffic
```

Related Commands	Command	Description
	<a href="#">show oosp statistics</a>	Displays OSCP Hello statistics information.
	<a href="#">show oosp traffic</a>	Display OSCP Hello traffic information.

# oscp timer hello holddown

To modify the OSCP timer Hello hold-down interval, use the **oscp timer hello holddown** command. To return the Hello hold-down interval to its default value, use the **no** form of the command.

**oscp timer hello holddown** *milliseconds*

**no oscp timer hello holddown**

<b>Syntax Description</b>	<i>milliseconds</i>	Specifies, in milliseconds, the interval in which no more than one Hello packet can be generated. If more than one Hello packet is generated during the hold-down period, the extra packets are delayed. The range is 150 to 30000 milliseconds.
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<b>Defaults</b>	3000 milliseconds
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<b>Command Modes</b>	Global configuration
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**Command History** This table includes the following release-specific history entries:

- EV-Release
- SV-Release
- S-Release

EV-Release	Modification
12.1(10)EV	This command was first introduced.
SV-Release	Modification
12.2(18)SV	This command was integrated in this release.
S-Release	Modification
12.2(22)S	This command was integrated in this release.

## Usage Guidelines

Use this command to control the amount of OSCP Hello activity that is generated on the network. The Hello hold-down timer specifies the interval during which no more than one Hello packet can be sent. If more than one Hello packet is generated during the hold-down period, the extra packets are delayed. Increasing the hold-down timer limits the number of Hello packets triggered in response to Hello packets received from a neighboring node and reduces the likelihood of Hello packets flooding the OSC.

To ensure proper functioning of the OSCP, the Hello hold-down timer value can be no more than 75% of the OSCP Hello interface timer.

**Note**

There is a trade-off between the frequency of generating Hello packets and the speed in which the system detects that the OSCP has gone down. In certain OSCP failure scenarios, a shorter Hello interval leads to faster detection of the OSCP failure.

**Examples**

The following example shows how to configure the OSCP timer Hello hold-down interval.

```
Switch# configure terminal  
Switch(config)# osp timer hello holddown 300
```

**Related Commands**

Command	Description
<a href="#">debug osp</a>	Enables debugging of OSCP activity.
<a href="#">osp timer hello interval</a>	Modifies the OSCP timer Hello interval.
<a href="#">osp timer inactivity-factor</a>	Modifies the OSCP timer inactivity factor.
<a href="#">show osp info</a>	Displays OSCP configuration information.

# oscp timer hello interval

To modify the OSCP timer Hello interval, use the **oscp timer hello interval** command. To return the Hello interval to its default value, use the **no** form of the command.

**oscp timer hello interval** *milliseconds*

**no oscp timer hello interval**

<b>Syntax Description</b>	<i>milliseconds</i>	Specifies, in milliseconds, the periodic generation of OSCP Hello packets. The range is 100 to 10000 milliseconds.
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<b>Defaults</b>	100 milliseconds
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<b>Command Modes</b>	Global configuration
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**Command History** This table includes the following release-specific history entries:

- EV-Release
- SV-Release
- S-Release

EV-Release	Modification
12.1(10)EV	This command was first introduced.
SV-Release	Modification
12.2(18)SV	This command was integrated in this release.
S-Release	Modification
12.2(22)S	This command was integrated in this release.

**Usage Guidelines** Use this command to control how often OSCP Hello messages are sent. The OSCP sends Hello packets to adjacent nodes at a configured interval. When five packets fail to get a response from the receiving node, that node is declared “down.” By decreasing the interval at which Hello packets are sent, reaction time to a failed node can be lessened. Increasing the interval reduces the amount of Hello packet traffic.



**Note**

There is a trade-off between the frequency of generating Hello packets and the speed in which the system detects that the OSCP has gone down. In certain OSCP failure scenarios, a shorter Hello interval leads to faster detection of the OSCP failure.

**Examples** The following example shows how to configure the OSCP timer Hello interval.

```
Switch# configure terminal
```

```
Switch(config)# oscp timer hello interval 200
```

**Related Commands**

Command	Description
<a href="#">debug oscp</a>	Enables debugging of OSCP activity.
<a href="#">oscp timer hello holddown</a>	Modifies the OSCP timer Hello hold-down interval.
<a href="#">oscp timer inactivity-factor</a>	Modifies the OSCP timer Hello inactivity factor.
<a href="#">show oscp info</a>	Displays OSCP configuration information.

# oosp timer inactivity-factor

To modify the OSCP timer Hello inactivity factor, use the **oosp timer inactivity-factor** command. To return the Hello inactivity factor to its default value, use the **no** form of the command.

**oosp timer inactivity-factor** *factor*

**no oosp timer inactivity-factor**

<b>Syntax Description</b>	<i>factor</i>	Specifies a value used to calculate an inactivity interval. The specified interval of time is equal to the inactivity factor multiplied by the neighbor's advertised Hello interval. The range is 1 to 50.
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<b>Defaults</b>	5 seconds
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<b>Command Modes</b>	Global configuration
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**Command History** This table includes the following release-specific history entries:

- EV-Release
- SV-Release
- S-Release

EV-Release	Modification
12.1(10)EV	This command was first introduced.
SV-Release	Modification
12.2(18)SV	This command was integrated in this release.
S-Release	Modification
12.2(22)S	This command was integrated in this release.

## Usage Guidelines

The system uses this attribute to determine when a neighbor node, or the link to it, has gone down. The link to a neighbor node is considered inactive if an OSCP Hello packet is not received for a time interval determined by the inactivity factor. The time interval is calculated by multiplying the inactivity factor by the advertised hold-down interval. For example, if the neighbor node's advertised hold-down interval is 5 seconds and the local node's inactivity factor is 5, the time interval that the local node will wait until declaring the neighbor node down is 25 seconds.



### Note

There is a trade-off between the frequency of generating Hello packets and the speed in which the system detects that the OSCP has gone down. In certain OSCP failure scenarios, a shorter Hello interval leads to faster detection of the OSCP failure.



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**Examples**

The following example shows how to set the OSCP timer Hello inactivity factor to 3.

```
Switch# configure terminal  
Switch(config)# osp timer inactivity-interval 3
```

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**Related Commands**

Command	Description
<a href="#">debug osp</a>	Enables debugging of OSCP activity.
<a href="#">osp timer hello holddown</a>	Modifies the OSCP timer Hello hold-down interval.
<a href="#">osp timer hello interval</a>	Modifies the OSCP timer Hello interval.
<a href="#">show osp info</a>	Displays OSCP configuration information.

# show oscp info

To display OSCP (Optical Supervisory Channel Protocol) configuration information, use the **show oscp info** command.

## show oscp info

**Syntax Description** This command has no other arguments or keywords.

**Defaults** None

**Command Modes** EXEC and privileged EXEC

**Command History** This table includes the following release-specific history entries:

- EV-Release
- SV-Release
- S-Release

EV-Release	Modification
12.1(10)EV	This command was first introduced.
SV-Release	Modification
12.2(18)SV	This command was integrated in this release.
S-Release	Modification
12.2(22)S	This command was integrated in this release.

**Usage Guidelines** Use this command to display OSCP configuration information for the system.

**Examples** The following example shows how to display OSCP configuration information for the system. (See [Table 5-1](#) for field descriptions.)

```
Switch# show oscp info
OSCP protocol version 1, Node ID          0000.1644.28fb
No. of interfaces 1, No. of neighbors 1
Hello interval 50 tenth of sec, inactivity factor 5,

Hello hold-down 1 tenth of sec
Supported OSCP versions: newest 1, oldest 1
```

**Table 5-1** *show oscp info Field Descriptions*

Field	Description
OSCP protocol version	Shows the OSCP version.
Node ID	Shows the node ID.
No. of interfaces	Shows the number of interfaces.
No. of neighbors	Shows the number of neighbors.
Hello interval	Shows the Hello interval in milliseconds.
inactivity factor	Shows the inactivity factor. The system uses the inactivity factor to determine when a link has gone down. A link is returned to the “attempt” state if the system has not received an OSCP Hello packet for a certain time interval. That time interval is equal to the Hello inactivity factor multiplied by the Hello interval from the Hello packet most recently received from the remote system. The range of inactivity factors is from 2 to 50. The default inactivity factor is 5.
Hello hold-down	Shows, in milliseconds, how long to wait before sending another OSCP Hello packet. This avoids excessive generation of OSCP Hello packets.
Supported OSCP versions	Shows the OSCP versions supported.

**Related Commands**

Command	Description
<b>oscp timer hello holddown</b>	Modifies the OSCP timer Hello hold-down interval.
<b>oscp timer hello interval</b>	Modifies the OSCP timer Hello interval.
<b>oscp timer inactivity-factor</b>	Modifies the OSCP timer inactivity factor.

# show oscp interface

To display OSCP (Optical Supervisory Channel Protocol) status information for OSC wave interfaces and ethernetdcc interfaces, use the **show oscp interface** command.

```
show oscp interface [wave slot/subcard | ethernetdcc slot/subcard/port]
```

<b>Syntax Description</b>	<b>wave slot</b>	Specifies an OSC wave interface.
	<b>ethernetdcc slot/subcard/port</b>	Specifies an ethernetdcc interface on a 10-GE transponder module.

**Defaults** Displays OSCP status information for all OSC wave interfaces and ethernetdcc interfaces in the system.

**Command Modes** Privileged EXEC

**Command History** This table includes the following release-specific history entries:

- EV-Release
- SV-Release
- S-Release

EV-Release	Modification
12.1(10)EV2	This command was first introduced.
SV-Release	Modification
12.2(18)SV	This command was integrated in this release.
S-Release	Modification
12.2(22)S	This command was integrated in this release.

**Usage Guidelines** Use this command to display status information for the local and remote interfaces running OSCP.

**Examples** The following example shows how to display status information for the local and remote interfaces running OSCP. (See [Table 5-2](#) for field descriptions.)

```
Switch# show oscp interface
Codes: OSC - dedicated wavelength channel, CDL - in-band wavelength channel
```

```
OSCP Interface(s)
Local Port      Port ID      Type  OSCP St  Rem Port ID  Rem Node Id
-----
Wave0           02000000    OSC   down     00000000     0000.0000.0000
Wave1           02020000    OSC   down     00000000     0000.0000.0000
```

**Table 5-2** *show oscp interface Field Descriptions*

Field	Description
Local Port	Shows the local port for the OSCP interface.
Port ID	Shows the port ID for the local port.
Type	Shows the channel link type, either OSCP or CDL.
OSCP St	Shows the OSCP Hello state. Valid values are: <ul style="list-style-type: none"> <li>• down—the physical layer is down</li> <li>• attempt—the physical layer is up, but no Hello messages have been received from the neighbor</li> <li>• 1way—Hello messages have been received from the neighbor, but their content indicates that the neighbor has not yet received Hellos from this node.</li> <li>• 2way—Hello messages have been received from the neighbor indicating that the neighbor has received Hello packets from this node.</li> </ul>
Rem Port Id	Shows the port ID for the remote port.
Rem Node Id	Shows the node ID for the remote port.

**Related Commands**

Command	Description
<a href="#">show oscp neighbor</a>	Displays OSCP neighbor information.
<a href="#">show oscp statistics</a>	Displays OSCP activity statistics.
<a href="#">show oscp traffic</a>	Displays OSCP message traffic information.

# show oscp neighbor

To display OSCP (Optical Supervisory Channel Protocol) neighbor information, use the **show oscp neighbor** command.

**show oscp neighbor**

**Syntax Description** This command has no other arguments or keywords.

**Defaults** None

**Command Modes** EXEC and privileged EXEC

**Command History** This table includes the following release-specific history entries:

- EV-Release
- SV-Release
- S-Release

EV-Release	Modification
12.1(10)EV	This command was first introduced.
SV-Release	Modification
12.2(18)SV	This command was integrated in this release.
S-Release	Modification
12.2(22)S	This command was integrated in this release.

**Usage Guidelines** Use this command to display information about the identity of the neighbors communicating with the system through OSCP.

**Examples** The following example shows how to display information about the identity of the neighbors communicating with the system through OSCP. (See [Table 5-3](#) for field descriptions.)

```
Switch# show oscp neighbor
OSCP Neighbors
Neighbor Node Id: 0000.1644.28ff   Port list:
  Local Port   Port ID   Rem Port ID   OSCP state
  ~~~~~
Wave0         1000000   1000000       2way
```

**Table 5-3** *show oscp neighbor Field Descriptions*

Field	Description
Neighbor Node Id	Shows the node ID for the OSCP neighbor.
Port list	Shows ports and port IDs for local and remote ports.
Local Port	Shows the local port.
Port Id	Shows the port ID of the local port.
Rem Port ID	Shows the port ID of the remote port.
OSCP St	Shows the OSCP Hello state. Valid values are: <ul style="list-style-type: none"> <li>• down—the physical layer is down</li> <li>• attempt—the physical layer is up, but no Hello messages have been received from the neighbor</li> <li>• 1-way—Hello messages have been received from the neighbor, but their content indicates that the neighbor has not yet received Hellos from this node.</li> <li>• 2-way—Hello messages have been received from the neighbor indicating that the neighbor has received Hello packets from this node.</li> </ul>

**Related Commands**

Command	Description
<a href="#">show oscp interface</a>	Displays OSCP information for an interface.
<a href="#">show oscp statistics</a>	Displays OSCP activity statistics.
<a href="#">show oscp traffic</a>	Displays OSCP message traffic information.

# show oscp statistics

To display OSCP (Optical Supervisory Channel Protocol) Hello statistics, use the **show oscp statistics** command.

```
show oscp statistics [wave slot]
```

<b>Syntax Description</b>	<b>wave slot</b>	Specifies an OSC wave interface.
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<b>Defaults</b>	Displays OSCP statistics for all OSC wave interfaces in the system.
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<b>Command Modes</b>	Privileged EXEC
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<b>Command History</b>	This table includes the following release-specific history entries:
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- EV-Release
- SV-Release
- S-Release

EV-Release	Modification
12.1(10)EV	This command was first introduced.
SV-Release	Modification
12.2(18)SV	This command was integrated in this release.
S-Release	Modification
12.2(22)S	This command was integrated in this release.

<b>Usage Guidelines</b>	Use this command to display OSCP Hello statistics for an OSC interface.
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This command displays the following OSCP statistics, which can be used to debug the OSCP.

- hold down—Shows how many times a hold down has been applied to avoid excessive generation of OSCP Hello packets.
- Hello Tx pkts and Hello Rx pkts—Shows the number of OSCP Hello packets that have been transmitted to and received at an interface.
- OSCP go down—Shows the number of times an OSC interface has gone out of two-way state.

<b>Examples</b>	The following example shows how to display OSCP control statistics for an OSC interface. (See <a href="#">Table 5-4</a> for field descriptions.)
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```
Switch# show oscp statistics wave 0
OSCP Hello Statistics:

interface Wave0
```



```

Event                      Count
~~~~~
hold down                  3
Hello Tx pkts             2262
Hello Rx pkts             2259
Hello discards in         0
Hello discards out        0
OSCP go down events       2

Event                      Time (seconds)
~~~~~
Next Tx Hello due         2
Last Hello sent           2
Last Hello received       4
Inactivity interval       25.0
Time until port dropped   20

```

**Table 5-4** *show oscp statistics Field Descriptions*

Field	Description
hold down	Shows how many times a hold down has been applied to avoid excessive generation of OSCP Hello packets.
Hello Tx pkts	Shows the number of Hello transmissions that have been sent.
Hello Rx pkts	Shows the number of Hello transmissions that have been received.
Hello discards in	Shows the number of incoming Hello transmissions that have been discarded.
Hello discards out	Shows the number of outgoing Hello transmissions that have been discarded.
OSCP go down events	Shows the number of times that the OSCP (Optical Supervisory Channel Protocol) has gone down.
Next Tx Hello due	Shows the number of seconds before the next transmit Hello packet is due.
Last Hello sent	Shows the number of seconds since a Hello packet was sent.
Last Hello received	Shows the number of seconds since a Hello packet was received.
Inactivity interval	Shows the number of seconds for the inactivity interval.
Time until port dropped	Shows the number of seconds allowed until the port is dropped.

#### Related Commands

Command	Description
<a href="#">oscp timer hello holddown</a>	Modifies the OSCP timer Hello hold-down interval.
<a href="#">oscp timer hello interval</a>	Modifies the OSCP timer Hello interval.

# show oscp traffic

To display OSCP (Optical Supervisory Channel Protocol) Hello message traffic information, use the **show oscp traffic** command.

```
show oscp traffic [wave slot]
```

<b>Syntax Description</b>	<b>wave slot</b>	Specifies an OSC wave interface.
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**Defaults** Displays OSCP Hello message traffic information for all OSC wave interfaces in the system.

**Command Modes** Privileged EXEC

**Command History** This table includes the following release-specific history entries:

- EV-Release
- SV-Release
- S-Release

EV-Release	Modification
12.1(10)EV	This command was first introduced.
SV-Release	Modification
12.2(18)SV	This command was integrated in this release.
S-Release	Modification
12.2(22)S	This command was integrated in this release.

**Usage Guidelines** Use this command to display OSCP control traffic statistics, which show the count of different protocol packets that have been transmitted over the optical supervisory channel.

**Examples** The following example shows how to display OSCP control traffic statistics, which show the count of different protocol packets that have been transmitted over the optical supervisory channel. (See [Table 5-5](#) for field descriptions.)

```
Switch# show oscp traffic wave 0
OSC Traffic Statistics:

interface Wave0
Description          Count
~~~~~
Tx IP pkt            0
Rx IP pkt            0
Tx CDP pkt           198
Rx CDP pkt           195
Rx pkt dropped       0
```

*Table 5-5 show oscp traffic Field Descriptions*

Field	Description
Tx IP pkt	Shows number of IP packets that have been transmitted over the optical supervisory channel.
Rx IP pkt	Shows number of IP packets that have been received over the optical supervisory channel.
Tx CDP pkt	Shows number of CDP packets that have been transmitted over the optical supervisory channel.
Rx CDP pkt	Shows number of CDP packets that have been received over the optical supervisory channel.
Rx pkt dropped	Shows the number of receive packets that were dropped.

**Related Commands**

Command	Description
<a href="#">clear oscp</a>	Clears OSCP statistics or traffic counters.

■ show oscp traffic