OSPF Enhanced Traffic Statistics for OSPFv2 and OSPFv3

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This document describes new and modified commands that provide enhanced OSPF traffic statistics for OSPFv2 and OSPFv3. The ability to collect and display more detailed traffic statistics increases high availability for the OSPF network by making the troubleshooting process more efficient.

New OSPF traffic statistics are collected and displayed to include the following information:

- OSPF Hello input queue and OSPF process queue status and statistics.
- Global OSPF traffic statistics.
- Per OSPF interface traffic statistics.
- Per OSPF process traffic statistics.

Finding Feature Information in This Module

Your Cisco IOS software release may not support all of the features documented in this module. To reach links to specific feature documentation in this module and to see a list of the releases in which each feature is supported, use the "Feature Information for OSPF Enhanced Traffic Statistics for OSPFv2 and OSPFv3" section on page 23.

Finding Support Information for Platforms and Cisco IOS and Catalyst OS Software Images

Use Cisco Feature Navigator to find information about platform support and Cisco IOS and Catalyst OS software image support. To access Cisco Feature Navigator, go to http://www.cisco.com/go/cfn. An account on Cisco.com is not required.

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Prerequisites for OSPF Enhanced Traffic Statistics for OSPFv2 and OSPFv3

OSPFv2 or OSPFv3 must be configured on the router.

Information About OSPF Enhanced Traffic Statistics for OSPFv2 and OSPFv3

The OSPF enhanced traffic statistics are enabled by default and cannot be disabled. Before displaying the OSPF Enhanced Traffic statistics for OSPFv2 and OSPFv3, you should understand the following concepts:

Benefits of Checking OSPF Enhanced Traffic Statistics for OSPFv2 and OSPFv3

The detailed OSPF traffic statistics are especially beneficial for troubleshooting the following types of OSPF instabilities:

- OSPF process queue status and statistical information can help the network administrator determine if an OSPF process can handle the amount of traffic sent to OSPF.
- OSPF packet header errors and LSA errors statistics keep a record of different errors found in received OSPF packets.

OSPF enhanced traffic control statistics also monitor the amount of traffic control exchanged between OSPF processes—an important consideration in network environments with slow links and frequent topology changes.

How to Display and Clear OSPF Enhanced Traffic Statistics for OSPFv2 and OSPFv3

This section contains the following tasks:

Displaying and Clearing OSPF Traffic Statistics for OSPFv2

If your network runs IPv4, complete the steps in the following task to collect, display and clear detailed traffic statistics for Hello output, process queue status, global OSPF traffic statistics, per OSPF interface traffic statistics and per OSPF process traffic statistics.

SUMMARY STEPS

1. **enable**
2. **show ip ospf** [*process-id*] **traffic** [*interface-type interface-number*]
3. **clear ip ospf traffic**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**show ip ospf** [*process-id*] **traffic** [*interface-type interface-number*] **Example:** `Router# show ip ospf traffic statistics`	Displays OSPFv2 traffic statistics.
Step 3	**clear ip ospf traffic** **Example:** `Router# clear ip ospf traffic`	Clears OSPFv2 traffic statistics.

Displaying and Clearing OSPF Traffic Statistics for OSPFv3

If your network runs IPv6, complete the steps in the following task to collect, display, and clear detailed traffic statistics for Hello output, process queue status, global OSPF traffic statistics, per OSPF interface traffic statistics and per OSPF process traffic statistics.

SUMMARY STEPS

1. **enable**
2. **show ipv6 ospf** [*process-id*] **traffic** [*interface-type interface-number*]
3. **clear ipv6 ospf traffic**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**show ipv6 ospf** [*process-id*] **traffic** [*interface-type interface-number*] **Example:** `Router# show ipv6 ospf traffic statistics`	Displays OSPFv3 traffic statistics.
Step 3	**clear ipv6 ospf traffic** **Example:** `Router# clear ipv6 ospf traffic`	Clears OSPFv3 traffic statistics.

Configuration Examples for OSPF Enhanced Traffic Commands for OSPFv2 and OSPFv3

This section contains the following examples:

- Displaying and Clearing Enhanced Traffic Statistics for OSPFv2: Example, page 4
- Displaying and Clearing Enhanced Traffic Statistics for OSPFv3: Example, page 7

Displaying and Clearing Enhanced Traffic Statistics for OSPFv2: Example

The following example shows display output for the **show ip ospf traffic** command for OSPFv2:

```
Router# show ip ospf traffic

OSPF statistics:
 Rcvd: 55 total, 0 checksum errors
       22 hello, 7 database desc, 2 link state req
       6 link state updates, 6 link state acks

  Sent: 68 total
       45 hello, 7 database desc, 2 link state req
       10 link state updates, 4 link state acks



            OSPF Router with ID (10.1.1.1) (Process ID 8)

OSPF queues statistic for process ID 8:

  OSPF Hello queue size 0, no limit, drops 0, max size 0
  OSPF Router queue size 0, limit 200, drops 0, max size 0


Interface statistics:
```

```
    Interface Ethernet0/0.1

OSPF packets received/sent

  Type          Packets              Bytes
  RX Invalid    0                    0
  RX Hello      0                    0
  RX DB des     0                    0
  RX LS req     0                    0
  RX LS upd     0                    0
  RX LS ack     0                    0
  RX Total      0                    0

  TX Failed     0                    0
  TX Hello      16                   1216
  TX DB des     0                    0
  TX LS req     0                    0
  TX LS upd     0                    0
  TX LS ack     0                    0
  TX Total      16                   1216

OSPF header errors
  Length 0, Checksum 0, Version 0, Bad Source 0,
  No Virtual Link 0, Area Mismatch 0, No Sham Link 0,
  Self Originated 0, Duplicate ID 0, Hello 0,
  MTU Mismatch 0, Nbr Ignored 0, LLS 0,
  Authentication 0,

OSPF LSA errors
  Type 0, Length 0, Data 0, Checksum 0,


Summary traffic statistics for process ID 8:

OSPF packets received/sent

  Type          Packets              Bytes
  RX Invalid    0                    0
  RX Hello      0                    0
  RX DB des     0                    0
  RX LS req     0                    0
  RX LS upd     0                    0
  RX LS ack     0                    0
  RX Total      0                    0

  TX Failed     0                    0
  TX Hello      16                   1216
  TX DB des     0                    0
  TX LS req     0                    0
  TX LS upd     0                    0
  TX LS ack     0                    0
  TX Total      16                   1216

OSPF header errors
  Length 0, Checksum 0, Version 0, Bad Source 0,
  No Virtual Link 0, Area Mismatch 0, No Sham Link 0,
  Self Originated 0, Duplicate ID 0, Hello 0,
  MTU Mismatch 0, Nbr Ignored 0, LLS 0,
  Authentication 0,

OSPF LSA errors
  Type 0, Length 0, Data 0, Checksum 0,
```

```
            OSPF Router with ID (10.1.1.4) (Process ID 1)

OSPF queues statistic for process ID 1:

  OSPF Hello queue size 0, no limit, drops 0, max size 2
  OSPF Router queue size 0, limit 200, drops 0, max size 2


Interface statistics:


    Interface Serial2/0

OSPF packets received/sent

  Type          Packets              Bytes
  RX Invalid    0                    0
  RX Hello      11                   528
  RX DB des     4                    148
  RX LS req     1                    60
  RX LS upd     3                    216
  RX LS ack     2                    128
  RX Total      21                   1080

  TX Failed     0                    0
 TX Hello      14                   1104
  TX DB des     3                    252
  TX LS req     1                    56
  TX LS upd     3                    392
  TX LS ack     2                    128
  TX Total      23                   1932

OSPF header errors
  Length 0, Checksum 0, Version 0, Bad Source 0,
  No Virtual Link 0, Area Mismatch 0, No Sham Link 0,
  Self Originated 0, Duplicate ID 0, Hello 0,
  MTU Mismatch 0, Nbr Ignored 0, LLS 0,
  Authentication 0,

OSPF LSA errors
  Type 0, Length 0, Data 0, Checksum 0,


    Interface Ethernet0/0

OSPF packets received/sent

  Type          Packets              Bytes
  RX Invalid    0                    0
  RX Hello      13                   620
  RX DB des     3                    116
  RX LS req     1                    36
  RX LS upd     3                    228
  RX LS ack     4                    216
  RX Total      24                   1216

  TX Failed     0                    0
  TX Hello      17                   1344
  TX DB des     4                    276
  TX LS req     1                    56
  TX LS upd     7                    656
  TX LS ack     2                    128
```

```
  TX Total      31                  2460

OSPF header errors
  Length 0, Checksum 0, Version 0, Bad Source 13,
  No Virtual Link 0, Area Mismatch 0, No Sham Link 0,
  Self Originated 0, Duplicate ID 0, Hello 0,
  MTU Mismatch 0, Nbr Ignored 0, LLS 0,
  Authentication 0,

OSPF LSA errors
  Type 0, Length 0, Data 0, Checksum 0,


Summary traffic statistics for process ID 1:

OSPF packets received/sent

  Type          Packets             Bytes
  RX Invalid    0                   0
  RX Hello      24                  1148
  RX DB des     7                   264
  RX LS req     2                   96
  RX LS upd     6                   444
  RX LS ack     6                   344
  RX Total      45                  2296

  TX Failed     0                   0
  TX Hello      31                  2448
  TX DB des     7                   528
  TX LS req     2                   112
  TX LS upd     10                  1048
  TX LS ack     4                   256
  TX Total      54                  4392

OSPF header errors
  Length 0, Checksum 0, Version 0, Bad Source 13,
  No Virtual Link 0, Area Mismatch 0, No Sham Link 0,
  Self Originated 0, Duplicate ID 0, Hello 0,
  MTU Mismatch 0, Nbr Ignored 0, LLS 0,
  Authentication 0,

OSPF LSA errors
  Type 0, Length 0, Data 0, Checksum 0,
```

The network administrator can issue the **clear ip ospf traffic** command to reset all counters and restart all statistics collections:

```
Router# clear ip ospf traffic
```

Displaying and Clearing Enhanced Traffic Statistics for OSPFv3: Example

The following example shows display output for the **show ipv6 ospf traffic** command for OSPFv3:

```
Router# show ipv6 ospf traffic

OSPFv3 statistics:
  Rcvd: 32 total, 0 checksum errors
        10 hello, 7 database desc, 2 link state req
        9 link state updates, 4 link state acks
```

```
        0 LSA ignored

  Sent: 45 total, 0 failed
        17 hello, 12 database desc, 2 link state req
        8 link state updates, 6 link state acks



            OSPFv3 Router with ID (10.1.1.4) (Process ID 6)

OSPFv3 queues statistic for process ID 6
  Hello queue size 0, no limit, max size 2
  Router queue size 0, limit 200, drops 0, max size 2


Interface statistics:


    Interface Serial2/0

OSPFv3 packets received/sent

  Type          Packets              Bytes
  RX Invalid    0                    0
  RX Hello      5                    196
  RX DB des     4                    172
  RX LS req     1                    52
  RX LS upd     4                    320
  RX LS ack     2                    112
  RX Total      16                   852

  TX Failed     0                    0
  TX Hello      8                    304
  TX DB des     3                    144
  TX LS req     1                    52
  TX LS upd     3                    252
  TX LS ack     3                    148
  TX Total      18                   900

OSPFv3 header errors
  Length 0, Checksum 0, Version 0, No Virtual Link 0,
  Area Mismatch 0, Self Originated 0, Duplicate ID 0,
  Instance ID 0, Hello 0, MTU Mismatch 0,
  Nbr Ignored 0, Authentication 0,

OSPFv3 LSA errors
  Type 0, Length 0, Data 0, Checksum 0,


    Interface Ethernet0/0

OSPFv3 packets received/sent

  Type          Packets              Bytes
  RX Invalid    0                    0
  RX Hello      6                    240
  RX DB des     3                    144
  RX LS req     1                    52
  RX LS upd     5                    372
  RX LS ack     2                    152
  RX Total      17                   960

  TX Failed     0                    0
  TX Hello      11                   420
```

```
  TX DB des     9                   312
  TX LS req     1                   52
  TX LS upd     5                   376
  TX LS ack     3                   148
  TX Total      29                  1308

OSPFv3 header errors
  Length 0, Checksum 0, Version 0, No Virtual Link 0,
  Area Mismatch 0, Self Originated 0, Duplicate ID 0,
  Instance ID 0, Hello 0, MTU Mismatch 0,
  Nbr Ignored 0, Authentication 0,

OSPFv3 LSA errors
  Type 0, Length 0, Data 0, Checksum 0,


Summary traffic statistics for process ID 6:

OSPFv3 packets received/sent

  Type          Packets             Bytes
  RX Invalid    0                   0
  RX Hello      11                  436
  RX DB des     7                   316
  RX LS req     2                   104
  RX LS upd     9                   692
  RX LS ack     4                   264
  RX Total      33                  1812

  TX Failed     0                   0
  TX Hello      19                  724
  TX DB des     12                  456
  TX LS req     2                   104
  TX LS upd     8                   628
  TX LS ack     6                   296
  TX Total      47                  2208

OSPFv3 header errors
  Length 0, Checksum 0, Version 0, No Virtual Link 0,
  Area Mismatch 0, Self Originated 0, Duplicate ID 0,
  Instance ID 0, Hello 0, MTU Mismatch 0,
  Nbr Ignored 0, Authentication 0,

OSPFv3 LSA errors
  Type 0, Length 0, Data 0, Checksum 0,
```

The network administrator can issue the **clear ipv6 ospf traffic** command to reset all counters and restart all statistics collections:

```
Router# clear ipv6 ospf traffic
```

Additional References

The following sections provide references related to the OSPF Enhanced Traffic Statistics for OSPFv2 and OSPFv3 feature.

Related Documents

Related Topic	Document Title
OSPF commands	*Cisco IOS IP Routing Protocols Command Reference*
OSPF configuration	*Cisco IOS IP Routing: OSPF Configuration Guide*, Release 12.4

Standards

Standard	Title
None	—

MIBs

MIB	MIBs Link
None	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

RFCs

RFC	Title
	—

Technical Assistance

Description	Link
The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies. Access to most tools on the Cisco Support website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register on Cisco.com.	http://www.cisco.com/techsupport

Command Reference

This section documents only commands that are new or modified.

- **clear ipv6 ospf traffic**
- **show ip ospf traffic**
- **show ipv6 ospf traffic**

clear ipv6 ospf traffic

To reset counters and clear IPv6 OSPFv3 traffic statistics, use the **clear ipv6 ospf traffic** command privileged EXEC mode.

clear ipv6 ospf traffic

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.4(6)T	This command was introduced.
12.2(31)SB2	This command was integrated into Cisco IOS Release 12.2(31)SB2.
12.2(33)SRB	This command was integrated into Cisco IOS Release 12.2(33)SRB.

Examples

The following example resets the counters and clears the OSPFv3 traffics statistics:

```
Router# clear ipv6 ospf traffic
```

Related Commands

Command	Description
clear ip ospf traffic	Clears OSPFv2 traffic statistics.
show ip ospf traffic	Displays OSPFv2 traffic statistics.
show ipv6 ospf traffic	Displays OSPFv3 traffic statistics.

show ip ospf traffic

To display Open Shortest Path First (OSPF) traffic statistics, use the **show ip ospf traffic** command in user EXEC or privileged EXEC mode.

show ip ospf [*process-id*] **traffic** [*interface-type interface-number*]

Syntax Description

process-id	(Optional) Process ID. If the *process-id* argument is included, only information for the specified routing process is displayed.
interface-type interface-number	(Optional) Type and number associated with a specific OSPF interface.

Command Default

When the **show ip ospf traffic** command is entered without any arguments, global OSPF traffic statistics are displayed, including queue statistics for each OSPF process, statistics for each interface, and per OSPF process statistics.

Command Modes

User EXEC
Privileged EXEC

Command History

Release	Modification
12.3(11)T	This command was introduced.
12.0(28)S	This command was integrated into Cisco IOS Release 12.0(28)S.
12.4(6)T	Support for the OSPF Enhanced Traffic Statistics for OSPFv2 and OSPFv3 was added for Cisco IOS Release 12.4(6)T.
12.2(31)SB2	This command was integrated into Cisco IOS Release 12.2(31)SB2.
12.2(33)SRB	This command was integrated into Cisco IOS Release 12.2(33)SRB.

Usage Guidelines

You can limit the displayed traffic statistics to those for a specific OSPF process by entering a value for the *process-id* argument, or you can limit output to traffic statistics for a specific interface associated with an OSPF process by entering values for the *interface-type* and *interface-number* arguments. To reset counters and clear statistics, use the **clear ip ospf traffic** command.

Examples

Cisco IOS Release 12.0(28)S

The following is sample output from the **show ip ospf traffic** command.

```
Router# show ip ospf traffic

OSPF statistics:
  Rcvd: 5300 total, 730 checksum errors
        333 hello, 10 database desc, 3 link state req
        24 link state updates, 13 link state acks

  Sent: 264 total
```

```
        222 hello, 12 database desc, 3 link state req
        17 link state updates, 12 link state acks


           OSPF Router with ID (10.0.1.2) (Process ID 100)

OSPF queues statistic for process ID 100:

  OSPF Hello queue size 0, no limit, max size 3
  OSPF Router queue size 0, limit 200, drops 0, max size 3

Interface statistics:

    Interface Loopback0

OSPF packets received/sent
     Invalid  Hellos   DB-des   LS-req   LS-upd   LS-ack   Total
Rx:  0        0        0        0        0        0        0
Tx:  0        0        0        0        0        0        0

OSPF header errors
  Length 0, Checksum 0, Version 0, Bad Source 0,
  No Virtual Link 0, Area Mismatch 0, No Sham Link 0,
  Self Originated 0, Duplicate ID 0, LLS 0,
  Authentication 0,

OSPF LSA errors
  Type 0, Length 0, Data 0, Checksum 0,


     Interface Serial3/0

  OSPF packets received/sent
      Invalid  Hellos   DB-des   LS-req   LS-upd   LS-ack   Total
Rx:   0        111      3        1        7        6        128
Tx:   0        111      4        1        12       5        133

  OSPF header errors
    Length 0, Checksum 0, Version 0, Bad Source 0,
    No Virtual Link 0, Area Mismatch 0, No Sham Link 0,
    Self Originated 0, Duplicate ID 0, LLS 0,
    Authentication 0,

  OSPF LSA errors
    Type 0, Length 0, Data 0, Checksum 0,

    Interface Serial2/0

  OSPF packets received/sent
      Invalid  Hellos   DB-des   LS-req   LS-upd   LS-ack   Total
Rx:   0        0        0        0        0        0        0
Tx:   0        0        0        0        0        0        0
  OSPF header errors
    Length 0, Checksum 0, Version 0, Bad Source 0,
    No Virtual Link 0, Area Mismatch 0, No Sham Link 0,
    Self Originated 0, Duplicate ID 0, LLS 0,
    Authentication 0,

OSPF LSA errors
  Type 0, Length 0, Data 0, Checksum 0,

  Interface Ethernet0/0

  OSPF packets received/sent
```

```
       Invalid  Hellos   DB-des   LS-req   LS-upd   LS-ack   Total
Rx:    0        222      7        2        17       7        255
Tx:    0        111      8        2        5        7        133

OSPF header errors
  Length 0, Checksum 730, Version 800, Bad Source 0,
  No Virtual Link 0, Area Mismatch 0, No Sham Link 0,
  Self Originated 3387, Duplicate ID 0, LLS 0,
  Authentication 0,

OSPF LSA errors
  Type 0, Length 0, Data 0, Checksum 0,


Summary traffic statistics for process ID 100:
  Rcvd: 5300 total, 4917 errors
        333 hello, 10 database desc, 3 link state req
        24 link state upds, 13 link state acks, 0 invalid
  Sent: 266 total
        222 hello, 12 database desc, 3 link state req
        17 link state upds, 12 link state acks, 0 invalid
```

Table 1 describes the significant fields shown in the display.

Table 1 show ip ospf traffic Field Descriptions

Field	Description
OSPF statistics	Traffic statistics accumulated for all OSPF processes running on the router. To ensure compatibility with the **show ip traffic** command, only checksum errors are displayed. Identifies the route map name.
OSPF queues statistic for process ID	Statistics specific to Cisco IOS software.
OSPF Hello queue	Statistics for the internal Cisco IOS queue between the packet switching code (process IP Input) and the OSPF hello process for all received OSPF packets.
OSPF Router queue	Statistics for the internal Cisco IOS queue between the OSPF hello process and the OSPF router for all received OSPF packets except OSPF hellos.
queue size	Actual size of the queue.
queue limit	Maximum allowed size of the queue.
queue max size	Maximum recorded size of the queue.
Interface statistics	Per-interface traffic statistics for all interfaces that belong to the specific OSPF process ID.
OSPF packets received/set	Number of OSPF packets received and sent on the interface, sorted by packet types.
OSPF header errors	Packet appears in this section if it was discarded because of an error in the header of an OSPF packet. The discarded packet is counted under the appropriate discard reason.

Table 1 show ip ospf traffic Field Descriptions (continued)

Field	Description
OSPF LSA errors	Packet appears in this section if it was discarded because of an error in the header of an OSPF link-state advertisement (LSA). The discarded packet is counted under the appropriate discard reason.
Summary traffic statistics for process ID	Summary traffic statistics accumulated for an OSPF process. **Note** The OSPF process ID is a unique value assigned to the OSPF process in the configuration. The value for the received errors is the sum of the OSPF header errors that are detected by the OSPF process, unlike the sum of the checksum errors that are listed in the global OSPF statistics.

Cisco IOS Release 12.4(6)T

The following is sample output from the **show ip ospf traffic** command that displays the detailed traffic information for OSPF packets received and sent on each OSPF interface and OSPF process.

```
Router# show ip ospf traffic

OSPF statistics:
.
.
.

    Interface Ethernet0/0.1

OSPF packets received/sent

  Type          Packets              Bytes
  RX Invalid    0                    0
  RX Hello      0                    0
  RX DB des     0                    0
  RX LS req     0                    0
  RX LS upd     0                    0
  RX LS ack     0                    0
  RX Total      0                    0

  TX Failed     0                    0
  TX Hello      16                   1216
  TX DB des     0                    0
  TX LS req     0                    0
  TX LS upd     0                    0
  TX LS ack     0                    0
  TX Total      16                   1216

.
.
.
    Interface Serial2/0

OSPF packets received/sent

  Type          Packets              Bytes
  RX Invalid    0                    0
  RX Hello      11                   528
  RX DB des     4                    148
```

```
  RX LS req     1                   60
  RX LS upd     3                   216
  RX LS ack     2                   128
  RX Total      21                  1080

  TX Failed     0                   0
  TX Hello      14                  1104
  TX DB des     3                   252
  TX LS req     1                   56
  TX LS upd     3                   392
  TX LS ack     2                   128
  TX Total      23                  1932
.
.
.
    Interface Ethernet0/0

OSPF packets received/sent

  Type          Packets             Bytes
  RX Invalid    0                   0
  RX Hello      13                  620
  RX DB des     3                   116
  RX LS req     1                   36
  RX LS upd     3                   228
  RX LS ack     4                   216
  RX Total      24                  1216

  TX Failed     0                   0
  TX Hello      17                  1344
  TX DB des     4                   276
  TX LS req     1                   56
  TX LS upd     7                   656
  TX LS ack     2                   128
  TX Total      31                  2460

.
.
.

Summary traffic statistics for process ID 1:

OSPF packets received/sent

  Type          Packets             Bytes
  RX Invalid    0                   0
  RX Hello      24                  1148
  RX DB des     7                   264
  RX LS req     2                   96
  RX LS upd     6                   444
  RX LS ack     6                   344
  RX Total      45                  2296

  TX Failed     0                   0
  TX Hello      31                  2448
  TX DB des     7                   528
  TX LS req     2                   112
  TX LS upd     10                  1048
  TX LS ack     4                   256
  TX Total      54                  4392

OSPF header errors
  Length 0, Checksum 0, Version 0, Bad Source 13,
  No Virtual Link 0, Area Mismatch 0, No Sham Link 0,
```

```
  Self Originated 0, Duplicate ID 0, Hello 0,
  MTU Mismatch 0, Nbr Ignored 0, LLS 0,
  Authentication 0,

OSPF LSA errors
  Type 0, Length 0, Data 0, Checksum 0,
```

The network administrator wants to start collecting new statistics, resetting the counters and clearing the traffic statistics by entering the **clear ip ospf traffic** command as follows:

```
Router# clear ip ospf traffic
```

Related Commands

Command	Description
clear ip ospf traffic	Clears OSPFv2 traffic statistics.
clear ipv6 ospf traffic	Clears OSPFv3 traffics statistics.
show ipv6 ospf traffic	Displays OSPFv3 traffic statistics.

show ipv6 ospf traffic

To display IPv6 Open Shortest Path First Version 3 (OSPFv3) traffic statistics, use the **show ipv6 ospf traffic** command in privileged EXEC mode.

show ipv6 ospf [*process-id*] **traffic** [*interface-type interface-number*]

Syntax Description

process-id	(Optional) OSPF process ID for which you want traffic statistics (for example, queue statistics, statistics for each interface under the OSPF process, and per OSPF process statistics).
interface-type interface-number	(Optional) Type and number associated with a specific OSPF interface.

Command Default

When the **show ipv6 ospf traffic** command is entered without any arguments, global OSPF traffic statistics are displayed, including queue statistics for each OSPF process, statistics for each interface, and per OSPF process statistics.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.4(6)T	This command was introduced.
12.2(31)SB2	This command was integrated into Cisco IOS Release 12.2(31)SB2.
12.2(33)SRB	This command was integrated into Cisco IOS Release 12.2(33)SRB.

Usage Guidelines

You can limit the displayed traffic statistics to those for a specific OSPF process by entering a value for the *process-id* argument, or you can limit output to traffic statistics for a specific interface associated with an OSPF process by entering values for the *interface-type* and *interface-number* arguments. To reset counters and clear statistics, use the **clear ipv6 ospf traffic** command.

Examples

The following example shows the display output for the **show ipv6 ospf traffic** command for OSPFv3:

```
Router# show ipv6 ospf traffic

OSPFv3 statistics:
  Rcvd: 32 total, 0 checksum errors
        10 hello, 7 database desc, 2 link state req
        9 link state updates, 4 link state acks
        0 LSA ignored

  Sent: 45 total, 0 failed
        17 hello, 12 database desc, 2 link state req
        8 link state updates, 6 link state acks
```

```
        OSPFv3 Router with ID (10.1.1.4) (Process ID 6)

OSPFv3 queues statistic for process ID 6
  Hello queue size 0, no limit, max size 2
  Router queue size 0, limit 200, drops 0, max size 2


Interface statistics:


    Interface Serial2/0

OSPFv3 packets received/sent

  Type          Packets              Bytes
  RX Invalid    0                    0
  RX Hello      5                    196
  RX DB des     4                    172
  RX LS req     1                    52
  RX LS upd     4                    320
  RX LS ack     2                    112
  RX Total      16                   852

  TX Failed     0                    0
  TX Hello      8                    304
  TX DB des     3                    144
  TX LS req     1                    52
  TX LS upd     3                    252
  TX LS ack     3                    148
  TX Total      18                   900

OSPFv3 header errors
  Length 0, Checksum 0, Version 0, No Virtual Link 0,
  Area Mismatch 0, Self Originated 0, Duplicate ID 0,
  Instance ID 0, Hello 0, MTU Mismatch 0,
  Nbr Ignored 0, Authentication 0,

OSPFv3 LSA errors
  Type 0, Length 0, Data 0, Checksum 0,


    Interface Ethernet0/0

OSPFv3 packets received/sent

  Type          Packets              Bytes
  RX Invalid    0                    0
  RX Hello      6                    240
  RX DB des     3                    144
  RX LS req     1                    52
  RX LS upd     5                    372
  RX LS ack     2                    152
  RX Total      17                   960

  TX Failed     0                    0
  TX Hello      11                   420
  TX DB des     9                    312
  TX LS req     1                    52
  TX LS upd     5                    376
  TX LS ack     3                    148
  TX Total      29                   1308

OSPFv3 header errors
  Length 0, Checksum 0, Version 0, No Virtual Link 0,
```

```
  Area Mismatch 0, Self Originated 0, Duplicate ID 0,
  Instance ID 0, Hello 0, MTU Mismatch 0,
  Nbr Ignored 0, Authentication 0,

OSPFv3 LSA errors
  Type 0, Length 0, Data 0, Checksum 0,


Summary traffic statistics for process ID 6:

OSPFv3 packets received/sent

  Type          Packets              Bytes
  RX Invalid    0                    0
  RX Hello      11                   436
  RX DB des     7                    316
  RX LS req     2                    104
  RX LS upd     9                    692
  RX LS ack     4                    264
  RX Total      33                   1812

  TX Failed     0                    0
  TX Hello      19                   724
  TX DB des     12                   456
  TX LS req     2                    104
  TX LS upd     8                    628
  TX LS ack     6                    296
  TX Total      47                   2208

OSPFv3 header errors
  Length 0, Checksum 0, Version 0, No Virtual Link 0,
  Area Mismatch 0, Self Originated 0, Duplicate ID 0,
  Instance ID 0, Hello 0, MTU Mismatch 0,
  Nbr Ignored 0, Authentication 0,

OSPFv3 LSA errors
  Type 0, Length 0, Data 0, Checksum 0,
```

The network administrator wants to start collecting new statistics, resetting the counters and clearing the traffic statistics by entering the **clear ipv6 ospf traffic** command as follows:

```
Router# clear ipv6 ospf traffic
```

Table 1 describes the significant fields shown in the display.

Table 2 show ipv6 ospf traffic Field Descriptions

Field	Description
OSPFv3 statistics	Traffic statistics accumulated for all OSPF processes running on the router. To ensure compatibility with the **show ip traffic** command, only checksum errors are displayed. Identifies the route map name.
OSPFv3 queues statistic for process ID	Queue statistics specific to Cisco IOS software.
Hello queue	Statistics for the internal Cisco IOS queue between the packet switching code (process IP Input) and the OSPF hello process for all received OSPF packets.
Router queue	Statistics for the internal Cisco IOS queue between the OSPF hello process and the OSPF router for all received OSPF packets except OSPF hellos.

Table 2 show ipv6 ospf traffic Field Descriptions (continued)

Field	Description
queue size	Actual size of the queue.
queue limit	Maximum allowed size of the queue.
queue max size	Maximum recorded size of the queue.
Interface statistics	Per-interface traffic statistics for all interfaces that belong to the specific OSPFv3 process ID.
OSPFv3 packets received/sent	Number of OSPFv3 packets received and sent on the interface, sorted by packet types.
OSPFv3 header errors	Packet appears in this section if it was discarded because of an error in the header of an OSPFv3 packet. The discarded packet is counted under the appropriate discard reason.
OSPFv3 LSA errors	Packet appears in this section if it was discarded because of an error in the header of an OSPF link-state advertisement (LSA). The discarded packet is counted under the appropriate discard reason.
Summary traffic statistics for process ID	Summary traffic statistics accumulated for an OSPFv3 process. **Note** The OSPF process ID is a unique value assigned to the OSPFv3 process in the configuration. The value for the received errors is the sum of the OSPFv3 header errors that are detected by the OSPFv3 process, unlike the sum of the checksum errors that are listed in the global OSPF statistics.

Related Commands

Command	Description
clear ip ospf traffic	Clears OSPFv2 traffic statistics.
clear ipv6 ospf traffic	Clears OSPFv3 traffic statistics.
show ip ospf traffic	Displays OSPFv2 traffic statistics.

Feature Information for OSPF Enhanced Traffic Statistics for OSPFv2 and OSPFv3

Table 3 lists the release history for this feature.

Not all commands may be available in your Cisco IOS software release. For release information about a specific command, see the command reference documentation.

Use Cisco Feature Navigator to find information about platform support and software image support. Cisco Feature Navigator enables you to determine which Cisco IOS and Catalyst OS software images support a specific software release, feature set, or platform. To access Cisco Feature Navigator, go to http://www.cisco.com/go/cfn. An account on Cisco.com is not required.

Note Table 3 lists only the Cisco IOS software release that introduced support for a given feature in a given Cisco IOS software release train. Unless noted otherwise, subsequent releases of that Cisco IOS software release train also support that feature.

Table 3 Feature Information for OSPF Enhanced Traffic Statistics for OSPFv2 and OSPFv3

Feature Name	Releases	Feature Information
OSPF Enhanced Traffic Statistics for OSPFv2 and OSPFv3	12.4(6)T 12.2(31)SB2 12.2(33)SRB	This document describes the detailed OSPF traffic statistics that are provided when the user enters the new and modified commands show commands for OSPFv2 and OSPFv3.