

# Chapter 10

## IS-IS Monitoring and Troubleshooting

Table 32 summarizes the command-line interface (CLI) commands you can use to monitor IS-IS. In the table, the commands are grouped by functionality. In the remainder of this chapter, the commands are explained alphabetically.

**Table 32: Commands for Monitoring IS-IS**

Task or Information to Monitor	Command
Status of interfaces on which IS-IS is running.	show isis interface on page 400
IS-IS routing table entries.	show isis routes on page 403
Database entries.	show isis database on page 397
Remove database entries.	clear isis database on page 392
Adjacent routers.	show isis adjacency on page 394
Remove adjacencies.	clear isis adjacency on page 392
SPF calculations.	show isis spf on page 404
IS-IS traffic statistics.	show isis statistics on page 407
Zero IS-IS traffic statistics.	clear isis statistics on page 393

### System ID Format in Command Output

In IS-IS command output, the CLI displays the system identifier (sysid) numerically by default. If you want the host name to be displayed instead, you must define the sysid and map it to a host name. To do this, include the static-host-mapping statement at the [edit system] hierarchy level of the configuration:

```
[edit system]
cli# show
static-host-mapping{
  host-name {
    sysid system-identifier;
  }
}
```

## clear isis adjacency

**Syntax** clear isis adjacency <system-id>

**Description** Remove the entries from the IS-IS adjacency database.

**Options** none—Remove all entries from the adjacency database.

*system-id*—(Optional) Remove the specified entry from the adjacency database. Specify *system-id* by name, not by address prefix.

**Required Privilege Level** clear

**See Also** show isis adjacency on page 394

**Sample Output**

```
user@host> show isis adjacency
IS-IS adjacency database:
Interface      System          L State      Hold (secs) SNPA
so-1/0/0.0     karakul         3 Up         26
so-1/1/3.0     1921.6800.5080 3 Up         23
so-5/0/0.0     1921.6800.5080 3 Up         19
user@host> clear isis adjacency karakul
user@host> show isis adjacency
IS-IS adjacency database:
Interface      System          L State      Hold (secs) SNPA
so-1/0/0.0     karakul         3 Initializing 26
so-1/1/3.0     1921.6800.5080 3 Up         24
so-5/0/0.0     1921.6800.5080 3 Up         21
```

## clear isis database

**Syntax** clear isis database <system-id>

**Description** Remove the entries from the IS-IS link-state database, which contains data about protocol data unit (PDU) packets.

**Options** none—Remove all the entries from the link-state database.

*system-id*—(Optional) Remove the specified entries. Specify *system-id* by name, not by address prefix.

**Required Privilege Level** clear

**See Also** show isis database on page 397

**Sample Output**

```
user@host> show isis database
IS-IS level 1 link-state database:
LSP ID          Sequence Checksum Lifetime (secs)
crater.00-00    0x12     0x84dd         1139
  1 LSPs
IS-IS level 2 link-state database:
LSP ID          Sequence Checksum Lifetime (secs)
crater.00-00    0x19     0xe92c         1134
badlands.00-00  0x16     0x1454         985
carlsbad.00-00  0x33     0x220b         1015
ranier.00-00    0x2e     0xfc31         1007
1921.6800.5066.00-00  0x11     0x7313         566
1921.6800.5067.00-00  0x14     0xd9d4         939
  6 LSPs
```

```

user@host> clear isis database
user@host> show isis database
IS-IS level 1 link-state database:
LSP ID                Sequence Checksum Lifetime (secs)

IS-IS level 2 link-state database:
LSP ID                Sequence Checksum Lifetime (secs)

```

## clear isis statistics

**Syntax** clear isis statistics

**Description** Zero statistics about IS-IS traffic.

**Required Privilege Level** view

**See Also** show isis statistics on page 407

**Sample Output**

```

user@host> show isis statistics
IS-IS statistics for merino:

PDU type      Received  Processed   Drops      Sent      Reremit
LSP           12793    12793       0           8666     719
IIH           116751   116751      0          118834    0
CSNP          203956   203956      0          204080    0
PSNP           7356     7350        6           8635     0
Unknown       0         0            0            0         0
Totals        340856   340850      6          340215   719

Total packets received: 340856 Sent: 340934

SNP queue length:          0 Drops:          0
LSP queue length:          0 Drops:          0

SPF runs:                   1064
Fragments rebuilt:          1087
LSP regenerations:          436
Purges initiated:           0

user@host> clear isis statistics

user@host> show isis statistics
IS-IS statistics for merino:

PDU type      Received  Processed   Drops      Sent      Reremit
LSP            0         0           0            0         0
IIH            3         3           0            3         0
CSNP           2         2           0            4         0
PSNP           0         0           0            0         0
Unknown        0         0           0            0         0
Totals         5         5           0            7         0

Total packets received: 5 Sent: 7

SNP queue length:          0 Drops:          0
LSP queue length:          0 Drops:          0

SPF runs:                   0
Fragments rebuilt:          0
LSP regenerations:          0
Purges initiated:           0

```

## show isis adjacency

**Syntax** show isis adjacency <system-id> <brief | detail>

**Description** Display information about IS-IS neighbors.

**Options** brief—(Optional) Display brief information about the entries in the IS-IS link-state database.

detail—(Optional) Display detailed information about the entries in the IS-IS link-state database. Entries are listed by system identifier (sysid).

system-id—(Optional) Display the entries in the link-state database for the specified system.

**Default:** brief

**Required Privilege Level** view

**See Also** clear isis adjacency on page 392

**Sample Output** Sample Output: show isis adjacency brief on page 396  
Sample Output: show isis adjacency detail on page 396

**Options at a Glance** Table 33 summarizes which information is included in each of the show isis adjacency command. In this table, output fields are listed in alphabetical order. In the Output Fields section, the output fields are listed in the order in which they are displayed.

**Table 33: Show IS-IS Adjacency Output Field Summary**

Options	Field Description
Detail	Expires in—How long until the adjacency expires, in seconds.
Detail	Circuit type—Bit mask of levels on this interface.
Brief	Hold (secs)—Remaining hold time of the adjacency.
All	Interface—Interface through which the adjacency is made.
Detail	IP addresses—IP address of this neighbor.
All	L—Level.
Detail	Last transition—Time of the last Up/Down transition.
Detail	Priority—Priority to become the designated intermediate system.
Brief	SNPA—Subnetwork point of attachment.
Detail	Speaks—Protocols supported by this neighbor.
All	State—State of the adjacency. It can be Up, Down, New, Initializing, or Rejected.
All	System—System identifier (sysid), printed as a name if possible.
Detail	Up/Down transitions—Count of adjacency status changes from Up to Down or from Down to Up.

<b>Output Fields</b>	Interface—Interface through which the adjacency is made.	.
	System—(Brief output only) System identifier (sysid), printed as a name if possible.	.
	L—Level:	.
	1—Level 1 only	.
	2—Level 2 only	.
	3—Level 1 and Level 2	.
	An exclamation point (!) preceding the level number indicates that the adjacency is missing an IP address.	.
	State—State of the adjacency. It can be Up, Down, New, Initializing, or Rejected.	.
	Hold (secs)—(Brief output only) Remaining hold time of the adjacency.	.
	SNPA—(Brief output only) Subnetwork point of attachment.	.
	Expires in—(Detail output only) How long until the adjacency expires, in seconds.	.
	Priority—(Detail output only) Priority to become the designated intermediate system.	.
	Up/Down transitions—(Detail output only) Count of adjacency status changes from Up to Down or from Down to Up.	.
	Last transition—(Detail output only) Time of the last Up/Down transition.	.
	Circuit type—(Detail output only) Bit mask of levels on this interface.	.
	Speaks—(Detail output only) Protocols supported by this neighbor.	.
	IP addresses—(Detail output only) IP address of this neighbor.	.

**Sample Output: show isis adjacency brief**

```
user@host> show isis adjacency brief
IS-IS adjacency database:
Interface System L State Hold (secs) SNPA
so-1/0/0.0 1921.6800.5067 2 Up 13
so-1/1/0.0 1921.6800.5067 2 Up 25
so-1/2/0.0 1921.6800.5067 2 Up 20
so-1/3/0.0 1921.6800.5067 2 Up 19
so-2/0/0.0 1921.6800.5066 2 Up 19
so-2/1/0.0 1921.6800.5066 2 Up 17
so-2/2/0.0 1921.6800.5066 2 Up 20
so-2/3/0.0 1921.6800.5066 2 Up 20
so-5/0/0.0 ranier 2 Up 17
```

**Sample Output: show isis adjacency detail**

```
user@host> show isis adjacency detail
IS-IS adjacency database:

1921.6800.5067
  Interface: so-1/0/0.0, Level: 2, State: Up, Expires in: 17 secs
  Priority: 0, Up/Down transitions: 1, Last transition: 02:18:14 ago
  Circuit type: 0, Speaks: IP
  IP addresses: 192.168.129.34

1921.6800.5067
  Interface: so-1/1/0.0, Level: 2, State: Up, Expires in: 20 secs
  Priority: 0, Up/Down transitions: 1, Last transition: 02:18:13 ago
  Circuit type: 0, Speaks: IP
  IP addresses: 192.168.129.38

1921.6800.5067
  Interface: so-1/2/0.0, Level: 2, State: Up, Expires in: 24 secs
  Priority: 0, Up/Down transitions: 1, Last transition: 02:18:23 ago
  Circuit type: 0, Speaks: IP
  IP addresses: 192.168.129.42
...
```

## show isis database

- Syntax** show isis database <system-id> <brief | detail | extensive>
- Description** Display the entries in the IS-IS link-state database, which contains data about PDU packets.
- Options** brief—(Optional) Display brief information about the entries in the link-state database.  
 detail—(Optional) Display detailed information about the entries in the link-state database.  
 extensive—(Optional) Display very detailed information about the entries in the link-state database.  
 system-id—(Optional) Display the link-state database entries for the specified system.
- Default:** brief
- Required Privilege Level** view
- See Also** clear isis database on page 392
- Sample Output** Sample Output: show isis database brief on page 398  
 Sample Output: show isis database detail on page 398  
 Sample Output: show isis database extensive on page 399
- Options at a Glance** Table 34 summarizes which information is included in each of the show isis database command options. In this table, output fields are listed in alphabetical order. In the Output Fields section, the output fields are listed in the order in which they are displayed.

Table 34: Show ISIS Database Output Field Summary

Options	Field Description
All	Checksum—Checksum value of the LSP.
Detail Extensive	IP prefix—Prefix advertised by this LSP.
Detail	IS neighbor—An IS-IS neighbor of the advertising system.
All	Lifetime (secs)—Remaining lifetime of the LSP, in seconds.
All	LSP ID—Link-state PDU (LSP) identifier.
Detail Extensive	lsp-id—Link-state PDU (LSP) identifier.
Detail Extensive	Metric—Metric of the prefix or neighbor.
All	Sequence—Sequence number of the LSP.
Extensive	Additional fields contain internal IS-IS information that is useful only in troubleshooting obscure problems.

- Output Fields** LSP ID—Link-state PDU (LSP) identifier.
- Sequence—Sequence number of the LSP.
- Checksum—Checksum value of the LSP.
- Lifetime (secs)—Remaining lifetime of the LSP, in seconds.
- IP prefix—(Detail and Extensive output only) Prefix advertised by this LSP.
- IS neighbor—(Detail output only) An IS-IS neighbor of the advertising system.
- Metric—(Detail and Extensive output only) Metric of the prefix or neighbor.

The remaining fields contain internal IS-IS information that is useful only in troubleshooting obscure problems. For more details about these fields, contact your customer support representative.

**Sample Output: show isis database brief**

```

user@host> show isis database
user@host> show isis database brief
IS-IS level 1 link-state database:
LSP ID                Sequence Checksum Lifetime (secs)
1921.6800.5080.00-00    0x89    0xfad    682
1921.6800.5081.00-00    0x69    0x8b2b   1103
  2 LSPPs

IS-IS level 2 link-state database:
LSP ID                Sequence Checksum Lifetime (secs)
1921.6800.5080.00-00    0x8d    0x7b1    685
1921.6800.5081.00-00    0x69    0x8b2b   1063
  2 LSPPs
    
```

**Sample Output: show isis database detail**

```

user@host> show isis database detail
IS-IS level 1 link-state database:
1921.6800.5080.00-00 Sequence: 0x89, Checksum: 0xfad, Lifetime: 1198 secs
  IS neighbor:    1921.6800.5080.01 Metric:    10
  IS neighbor:    1921.6800.5081.00 Metric:    10
  IS neighbor:    1921.6800.5080.02 Metric:     0
  IP prefix:      192.168.8.198/32 Metric:    10 Internal
  IP prefix:      192.168.8.192/32 Metric:    10 Internal
  IP prefix:      192.168.8.196/32 Metric:    10 Internal
1921.6800.5081.00-00 Sequence: 0x69, Checksum: 0x8b2b, Lifetime: 1199 secs
  IS neighbor:    1921.6800.5080.00 Metric:    10
  IS neighbor:    1921.6800.5081.02 Metric:     0
  IP prefix:      192.168.8.197/32 Metric:    10 Internal
  IP prefix:      192.168.8.193/32 Metric:    10 Internal

IS-IS level 2 link-state database:
1921.6800.5080.00-00 Sequence: 0x8d, Checksum: 0x7b1, Lifetime: 1198 secs
  IS neighbor:    1921.6800.5080.01 Metric:    10
  IS neighbor:    1921.6800.5081.00 Metric:    10
  IS neighbor:    1921.6800.5080.02 Metric:     0
  IP prefix:      192.168.8.198/32 Metric:    10 Internal
  IP prefix:      192.168.8.192/32 Metric:    10 Internal
  IP prefix:      192.168.8.196/32 Metric:    10 Internal
1921.6800.5081.00-00 Sequence: 0x69, Checksum: 0x8b2b, Lifetime: 1199 secs
  IS neighbor:    1921.6800.5080.00 Metric:    10
  IS neighbor:    1921.6800.5081.02 Metric:     0
  IP prefix:      192.168.8.197/32 Metric:    10 Internal
  IP prefix:      192.168.8.193/32 Metric:    10 Internal
    
```

**Sample Output: show isis database extensive**

```

user@host> show isis database extensive
IS-IS level 1 link-state database:

1921.6800.5081.00-00 Sequence: 0x89, Checksum: 0x4b4b, Lifetime: 1199 secs

IS neighbor: 1921.6800.5080.00 Metric: 10
IS neighbor: 1921.6800.5081.02 Metric: 0

IP prefix: 192.168.8.197/32 Metric: 10 Internal
IP prefix: 192.168.8.193/32 Metric: 10 Internal

Header: LSP id: 1921.6800.5081.00-00, Length: 206 bytes
Allocated length: 1492 bytes
Remaining lifetime: 854 secs, Level: 2, Interface: 0
Estimated free bytes: 1286, Actual free bytes: 1286
Aging timer expires in: 854 secs
Protocols: IP

Packet: LSP id: 1921.6800.5081.00-00, Length: 206 bytes, Lifetime: 1199 secs
Checksum: 0x4b4b, Sequence: 0x89, Attributes: 0x3 <L1 L2>
NLPID: 0x83, Fixed length: 27 bytes, Version: 1, Sysid length: 0 bytes
Packet type: 20, Packet version: 1, Max area: 0

TLVs:
Area address: 47.0005.80ff.f800.0000.0108.0001 (13)
Speaks: IP
IP router id: 192.168.5.81
IP address: 192.168.5.81
IS neighbor: 1921.6800.5081.02, Metric: 0
IS neighbor: 1921.6800.5080.00, Metric: 10
Maximum bandwidth: 622Mbps
IP address: 192.168.8.192
Neighbor's IP address: 192.168.8.193
IP prefix: 192.168.8.193/32
Administrative groups: 0 <none>
IS neighbor: 1921.6800.5080.00, Metric: 10
Maximum bandwidth: 155Mbps
IP address: 192.168.8.196
Neighbor's IP address: 192.168.8.197
IP prefix: 192.168.8.197/32
Administrative groups: 0 <none>
IP prefix: 192.168.8.193/32, Internal, Metrics: default 10
IP prefix: 192.168.8.197/32, Internal, Metrics: default 10
IS neighbor: 1921.6800.5080.00, Internal, Metrics: default 10
IS neighbor: 1921.6800.5080.00, Internal, Metrics: default 10

IS-IS level 2 link-state database:
...

```

## show isis interface

**Syntax** show isis interface <*interface-name*> <brief | detail>

**Description** Display status information about the interfaces on which IS-IS is configured.

**Options** brief—(Optional) Display brief information about IS-IS interfaces.

detail—(Optional) Display detailed information about IS-IS interfaces.

*interface-name*—(Optional) Name of an interface. You can include wildcard characters in the interface name, as described in “Wildcard Characters in Interface Names” on page 110.

**Default:** brief

**Required Privilege Level** view

**Sample Output** Sample Output: show isis interface (Standard) on page 401  
 Sample Output: show isis interface brief on page 402  
 Sample Output: show isis interface detail on page 402

**Options at a Glance** Table 35 summarizes which information is included in each of the show isis interface command options. In this table, output fields are listed in alphabetical order. In the Output Fields section, the output fields are listed in the order in which they are displayed.

**Table 35: Show IS-IS Interface Output Field Summary**

Options	Field Description
Detail	Adjacencies—Number of adjacencies established on this interface.
All	CirID—Circuit identifier.
Detail	Circuit type—Circuit type.
Detail	Hello (s)—Interface’s hello interval.
Detail	Hold (s)—Interface’s hold time.
Detail	Index—Interface index assigned by the JUNOS kernel.
Detail	<i>interface-name</i> —Name of the interface.
Brief	Interface—Interface through which the adjacency is made.
All	L or Level—Level.
Brief	Level 1 DR—Level 1 designated intermediate system.
Brief	Level 2 DR—Level 2 designated intermediate system.
Standard	L1/L2 Metric—Interface’s metric for Level 1 and Level 2. If there is no information, the metric is 0.
Detail	LSP interval—Interface’s LSP interval.
Detail	Metric—Metric value for this interface.
Detail	Priority—Priority value for this interface.
Detail	State—Internal implementation information.
Detail	Sysid—System identifier.

- Output Fields**
- interface-name*—(Detail output only) Name of the interface.
  - Index—(Detail output only) Interface index assigned by the JUNOS kernel.
  - State—(Detail output only) Internal implementation information.
  - Circuit id—(Detail output only) Circuit identifier.
  - Circuit type—(Detail output only) Circuit type:
    - 1—Level 1 only
    - 2—Level 2 only
    - 3—Level 1 and Level 2
  - LSP interval—(Detail output only) Interface's LSP interval.
  - Sysid—(Detail output only) System identifier. Interface—(Brief output only) Interface through which the adjacency is made.
  - L or Level—Level:
    - 1—Level 1 only
    - 2—Level 2 only
    - 3—Level 1 and Level 2
  - CirID—Circuit identifier.
  - Level 1 DR—(Brief output only) Level 1 designated intermediate system.
  - Level 2 DR—(Brief output only) Level 2 designated intermediate system.
  - L1/L2 Metric—(Standard output only) Interface's metric for Level 1 and Level 2. If there is no information, the metric is 0.
  - Adjacencies—(Detail output only) Number of adjacencies established on this interface.
  - Priority—(Detail output only) Priority value for this interface.
  - Metric—(Detail output only) Metric value for this interface.
  - Hello (s)—(Detail output only) Interface's hello interval.
  - Hold (s)—(Detail output only) Interface's hold time.

**Sample Output: show isis interface (Standard)**

```

user@host> show isis interface
IS-IS interface database:
Interface L CirID Level 1 DR      Level 2 DR      L1/L2 Metric
fxp0.0 3      0x2 Disabled    Disabled        10/10
fxp1.0 3      0x3 mpls6.03    mpls6.03        10/10
lo0.0 0       0x1 Passive     Passive         0/0
sr0.0 3       0x1 Point to point Point to point  10/10
sr1.0 3       0x1 Point to point Point to point  10/10

```

**Sample Output: show isis interface brief**

```

user@host> show isis interface brief
IS-IS interface database:
Interface L CirID Level 1 DR          Level 2 DR
lo0.0      3  0x1 crater.01          crater.01
so-1/0/0.0 2  0x9 Disabled          crater.09
so-1/1/0.0 2  0x7 Disabled          crater.07
so-1/2/0.0 2  0x3 Disabled          crater.03
so-1/3/0.0 2  0x5 Disabled          crater.05
so-2/0/0.0 2  0x2 Disabled          crater.02
so-2/1/0.0 2  0x4 Disabled          crater.04
so-2/2/0.0 2  0x6 Disabled          crater.06
so-2/3/0.0 2  0x8 Disabled          crater.08
so-5/0/0.0 2  0xa Disabled          crater.0a
so-5/0/1.0 2  0xb Disabled          crater.0b
so-5/0/2.0 2  0xc Disabled          crater.0c
so-5/0/3.0 2  0xd Disabled          crater.0d
    
```

**Sample Output: show isis interface detail**

```

user@host> show isis interface detail
lo0.0
  Index: 3, State: 0x7, Circuit id: 0x1, Circuit type: 3
  LSP interval: 100 ms, Sysid: crater
  Level Adjacencies Priority Metric Hello (s) Hold (s)
    1                0      64      0      9      27
    2                0      64      0      9      27

so-1/0/0.0
  Index: 5, State: 0x106, Circuit id: 0x9, Circuit type: 2
  LSP interval: 100 ms
  Level Adjacencies Priority Metric Hello (s) Hold (s)
    2                1      64     10      9      27

so-1/1/0.0
  Index: 6, State: 0x106, Circuit id: 0x7, Circuit type: 2
  LSP interval: 100 ms
  Level Adjacencies Priority Metric Hello (s) Hold (s)
    2                1      64     10      9      27
...
    
```

## show isis routes

<b>Syntax</b>	show isis routes
<b>Description</b>	Display the routes in the IS-IS routing table.
<b>Required Privilege Level</b>	view
<b>Output Fields</b>	<p>Current version—Number of the current version of the IS-IS routing table.</p> <p>L1—Version of Level 1 SPF that was run.</p> <p>L2—Version of Level 2 SPF that was run.</p> <p>Prefix—Destination of the route.</p> <p>L—Level:</p> <ul style="list-style-type: none"> <li>1—Level 1 only</li> <li>2—Level 2 only</li> <li>3—Level 1 and Level 2</li> </ul> <p>Version—Version of SPF that generated the route.</p> <p>Metric—Metric value associated with the route.</p> <p>Type— Metric type. It can be int (internal) or ext (external).</p> <p>Interface—Interface to the next hop.</p> <p>Via—System identifier of the next hop, displayed as a name if possible.</p>

**Sample Output**

```

user@host> show isis routes
IS-IS routing table Current version: L1: 89 L2: 158
Prefix L Version Metric Type Interface Via
10.1.1.1/32 2 158 20 int so-1/0/0.0 router-d
ge-2/1/0.0 router-d
10.10.20.16/29 2 158 20 int ge-4/2/0.0 router-b
10.10.20.24/29 2 158 20 int so-1/0/0.0 router-d
ge-2/1/0.0 router-d
10.10.20.102/32 2 158 10 int ge-4/2/0.0 router-b
10.10.20.103/32 2 158 20 int so-1/0/0.0 router-d
ge-2/1/0.0 router-d
ge-4/2/0.0 router-b
10.10.20.104/32 2 158 10 int so-1/0/0.0 router-d
ge-2/1/0.0 router-d
10.10.20.248/30 2 158 20 int so-1/0/0.0 router-d
ge-2/1/0.0 router-d
ge-4/2/0.0 router-b
10.10.90.0/29 2 158 20 int so-1/0/0.0 router-d ge-2/1/0.0 router-d
...

```

show isis spf

**Syntax** show isis spf (brief | log | results)

**Description** Display information about shortest-path-first (SPF) calculations.

**Options** brief—Display an overview of SPF calculations.  
 log—Display the log of SPF calculations.  
 results—Display the results of SPF calculations.

**Required Privilege Level** view

**Sample Output** Sample Output: show isis spf brief on page 405  
 Sample Output: show isis spf log on page 405  
 Sample Output: show isis spf results on page 406

**Options at a Glance** Table 36 summarizes which information is included in each of the show isis spf command options. In this table, output fields are listed in alphabetical order. In the Output Fields section, the output fields are listed in the order in which they are displayed.

**Table 36: Show ISIS SPF Interface Output Field Summary**

Options	Field Description
Log	Count—Number of times the SPF was triggered before the SPF computation was performed.
Log	Elapsed time (secs)—Length of time required to complete the SPF computation.
Brief Results	Interface—Interface of the next hop.
Brief Results	Metric—Metric to the node.
Brief Results	Node—Sysid of a node.
Log	Reason—Reason that the SPF computation was completed.
Brief Results	SNPA—Subnet point of attachment (MAC address of the next hop).
Log	Start time—Time that the SPF computation started.
Brief Results	Via—Sysid of the next hop.

<b>Output Fields</b>	Node—Sysid of a node.
	Metric—Metric to the node.
	Interface—Interface of the next hop.
	Via—Sysid of the next hop.
	SNPA—Subnet point of attachment (MAC address of the next hop).
	Start time—(Log output only) Time that the SPF computation started.
	Elapsed time (secs)—(Log output only) Length of time required to complete the SPF computation.
	Count—(Log output only) Number of times the SPF was triggered before the SPF computation was performed.
	Reason—(Log output only) Reason that the SPF computation was completed.

```

Sample Output: show isis spf brief
user@host> show isis spf brief
IS-IS level 1 SPF results:

IS-IS level 2 SPF results:
Node                Metric Interface Via                SNPA
badlands.00        23 so-1/2/0.0 1921.6800.5067
                   so-1/0/0.0 1921.6800.5067
                   so-1/1/0.0 1921.6800.5067
                   so-1/3/0.0 1921.6800.5067
carlsbad.00        13 so-1/2/0.0 1921.6800.5067
                   so-1/0/0.0 1921.6800.5067
                   so-1/1/0.0 1921.6800.5067
                   so-1/3/0.0 1921.6800.5067
1921.6800.5064.00  13 so-1/2/0.0 1921.6800.5067
                   so-1/0/0.0 1921.6800.5067
                   so-1/1/0.0 1921.6800.5067
                   so-1/3/0.0 1921.6800.5067
1921.6800.5067.00  10 so-1/2/0.0 1921.6800.5067
                   so-1/0/0.0 1921.6800.5067
                   so-1/1/0.0 1921.6800.5067
                   so-1/3/0.0 1921.6800.5067
1921.6800.5066.00  10 so-2/2/0.0 1921.6800.5066
                   so-2/0/0.0 1921.6800.5066
                   so-2/1/0.0 1921.6800.5066
                   so-2/3/0.0 1921.6800.5066

5 nodes

```

```

Sample Output: show isis spf log
user@host> show isis spf log
IS-IS level 1 SPF log:
Start time           Elapsed time (secs) Count Reason
Fri Aug 14 18:52:32   0.000427      1 Reconfig
Fri Aug 14 18:52:39   0.000493      1 Updated LSP
Fri Aug 14 19:05:05   0.000463      1 Periodic SPF
Fri Aug 14 19:18:47   0.000475      1 Periodic SPF
Fri Aug 14 19:31:11   0.000461      1 Periodic SPF
...

IS-IS level 2 SPF log:
Start time           Elapsed time (secs) Count Reason
Fri Aug 14 20:46:12   0.001272      1 Updated LSP
Fri Aug 14 21:03:46   0.001256      1 Updated LSP

```

```
• Fri Aug 14 21:05:36 0.001108 1 Reconfig
• Fri Aug 14 21:19:07 0.001808 1 Lost adjacency
• Fri Aug 14 21:19:30 0.001416 1 Updated LSP
• Fri Aug 14 21:30:52 0.001390 1 Periodic SPF
• ...
```

**Sample Output: show isis spf results**

```
user@host> show isis spf results
IS-IS level 1 SPF results:

IS-IS level 2 SPF results:
Node Metric Interface Via SNPA
badlands.00 23 so-1/2/0.0 1921.6800.5067
so-1/0/0.0 1921.6800.5067
so-1/1/0.0 1921.6800.5067
so-1/3/0.0 1921.6800.5067
23 10.255.245.46/32
33 10.101.1.12/30
33 10.101.1.8/30
33 10.101.1.4/30
63 10.20.1.4/32
63 10.20.1.3/32
63 10.20.1.2/32
63 10.20.1.1/32
...
```

## show isis statistics

<b>Syntax</b>	show isis statistics
<b>Description</b>	Display statistics about IS-IS traffic.
<b>Required Privilege Level</b>	view
<b>See Also</b>	clear isis statistics on page 393
<b>Output Fields</b>	<p>PDU type—Protocol data unit type.</p> <p>Received—Number of PDUs received since IS-IS started or since the statistics were zeroed.</p> <p>Processed—Number of PDUs received less the number dropped.</p> <p>Drops—Number of PDUs dropped.</p> <p>Sent—Number of PDUs transmitted since IS-IS started or since the statistics were zeroed.</p> <p>Rexmit—Number of PDUs retransmitted since IS-IS started or since the statistics were zeroed.</p> <p>Total packets received/sent—Total number of PDUs received and transmitted since IS-IS started or since the statistics were zeroed.</p> <p>SNP queue length—Number of CSNP and PSNP packets currently sitting on the SNP queue waiting for processing. This value is almost always 0.</p> <p>LSP queue length—Number of LSPs sitting on the LSP queue waiting for processing. This value is almost always 0.</p> <p>SPF runs—Number of SPF calculations that have been performed. If this number is incrementing rapidly, it indicates that the network is unstable.</p> <p>Fragments rebuilt—Number of LSP fragments that the local system has computed.</p> <p>LSP regenerations—Number of LSPs that have been regenerated. An LSP is regenerated when it is nearing the end of its lifetime and it has not changed.</p> <p>Purges initiated—Number of purges that the system initiated. A purge is initiated if the software decides that an LSP must be removed from the network.</p>

**Sample Output**

```
user@host> show isis statistics
IS-IS statistics for merino:

PDU type      Received  Processed    Drops      Sent      Rexmit
LSP           12227    12227        0          8184     683
IIH           113808   113808       0         115817    0
CSNP          198868   198868       0         198934    0
PSNP           6985     6979         6          8274     0
Unknown        0         0            0           0         0
Totals        331888   331882       6         331209   683

Total packets received: 331888 Sent: 331892

SNP queue length:          0 Drops:          0
LSP queue length:          0 Drops:          0

SPF runs:                   1014
Fragments rebuilt:         1038
LSP regenerations:         425
Purges initiated:          0
```