

Commands: show n through show o

COMMAND DESCRIPTION

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1 Command Descriptions

Commands starting with “show n” through commands starting with “show o” are included.

This document applies to both the Ericsson SmartEdge® and SM family routers. However, the software that applies to the SM family of systems is a subset of the SmartEdge OS; some of the functionality described in this document may not apply to SM family routers.

For information specific to the SM family chassis, including line cards, refer to the SM family chassis documentation.

For specific information about the differences between the SmartEdge and SM family routers, refer to the Technical Product Description *SM Family of Systems* (part number 5/221 02-CRA 119 1170/1) in the **Product Overview** folder of this Customer Product Information library.

1.1 show nat logging-profile

1.1.1 Purpose

Displays information about a NAT logging profile.

1.1.2 Command

```
show nat logging-profile profile-name
```

1.1.3 Syntax Description

<i>profile-name</i>	Name of NAT logging profile.
<i>detail</i>	Displays detailed information about a NAT logging profile.

1.1.4 Default

None

1.1.5 Usage Guidelines

Use the `show nat logging profile` command to display information about a logging profile.



When troubleshooting, check the following fields:

- **Valid**—If this field shows `no`, the profile was not downloaded to the line cards and is not in use.
- **Destination IP**—Make sure a valid route exists to the destination IP address in the context.

1.1.6 Examples

The following output shows that the logging profile has been downloaded (Valid: `yes`) and that a route exists to `100.1.1.1`:

```
[local]Redback(config-ctx)#show nat logging-profile nat-log-profile
Profile name       : nat-log-profile
Profile context id : 0x40080009
Profile grid       : 0x00000001
Valid              : yes
Source ip          : 10.10.1.1
Source port        : 4242
Destination ip     : 100.1.1.1
Destination port   : 8989
Destination ctx    : 0x40080001
Transport protocol : udp
Export version     : v9
Dscp               : ef (0x2e)
Max ip-packet-size : 1400
```

1.2 show nat policy

```
show nat policy [pol-name [detail]]
```

1.2.1 Purpose

Displays information for configured Network Address Translation (NAT) policies in the current context.

1.2.2 Command Mode

all modes

1.2.3 Syntax Description

<i>pol-name</i>	Optional. NAT policy name.
<i>detail</i>	Optional. Displays more detailed information about the specified NAT policy. Used only with the <i>pol-name</i> argument.



1.2.4 Default

When entered without any optional syntax, the `show nat policy` command displays information for all configured NAT policies in the current context.

1.2.5 Usage Guidelines

Use the `show nat policy` command to display information for configured NAT policies in the current context.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.2.6 Examples

The following example displays information about all configured NAT policies in the current context:

```
[local]Redback>show nat policy
```

Policy-Grid	Rules	Slot-Mask	Binds	Policy-Name
0x00000001	4	0x00000010	1	pol1
0x00000002	1	0x00040000	1	pol2

The following example displays information about the `pol1` policy:

```
[local]Redback#show nat policy pol1
```

Policy name	:	pol1
Policy grid	:	0x1
Number of rules	:	4
Slot mask	:	0x10
Number of binds	:	1

The following example displays detailed information about the `pol1` policy:



```
[local]Redback#show nat policy poll detail
```

```
Policy name      : poll
Policy grid      : 0x1
Number of rules   : 4
Slot mask        : 0x10
Number of binds   : 1
Circuit          : 3/1
```

```
Reference counters (in circuits * classes):
```

Slot	1	2	3	4	5	6	9	10	11	12	13	14
	0	0	1	0	0	0	0	0	0	0	0	0

```
Static NAT Rules:
```

In/Out	Protocol	Src-Addr	Port	NAT-Src-Addr	Port	NAT-Ctx-Id
in	tcp/ip	10.1.1.3	80	100.1.1.3	8080	0x40080001
in	tcp/ip	10.1.2.3	80	100.1.2.3	8080	0x40080001
in	tcp/ip	10.1.3.3	80	100.1.3.3	8080	0x40080001
in	tcp/ip	10.1.4.3	80	100.1.4.3	8080	0x40080001

Class-Name	Action	Pool-Grid	Pool-Ctx-Id	Timeout(sec)
default	na[p]t	0x2	0x40080001	tcp 86400 udp 120

Class-Name	Action	Pool-Grid/ Context-Id	Dest-IP-Addr/ Context-Id	Timeout(sec)
default	na[p]t	0x2 0x40080001	170.16.1.1 0x40080001	tcp 86400 udp 120 finrst 240 icmp 60 syn 128 basic 3600
CLASS2	na[p]t	0x2	0x40080001	tcp 86400 udp 120 finrst 240 icmp 60 syn 128 basic 3600
CLASS3	na[p]t	0x0	0x40080001	tcp 86400 udp 120 finrst 240 icmp 60 syn 128 basic 3600

1.3 show nat pool

```
show nat pool [nat-pool-name [detail]]
```

1.3.1 Purpose

Displays information about configured Network Address Translation (NAT) pools in the current context.

1.3.2 Command Mode

all modes



1.3.3 Syntax Description

<code>nat-pool-name</code>	Optional. NAT pool name.
<code>detail</code>	Optional. Displays detailed information about the specified NAT pool.

1.3.4 Default

When entered without any optional syntax, the `show nat pool` command displays information about all configured NAT pools in the current context.

1.3.5 Usage Guidelines

Use the `show nat pool` command to display information about NAT pools in the current context.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.3.6 Examples

The following example displays information for all configured NAT pools in the current context:

```
[local]Redback>show nat pool

Pool-Grid Context-Id Type Rcrds Slot-Mask Pool-Name
0x00000002 0x40080001 napt/M      3 0x00040010 pool1
0x00000003 0x40080001 napt      1 0x00000000 pool_test
```

The following example displays detailed information about the `pool1` pool:



```
[local]Redback>show nat pool pool1 detail
```

```
Pool name       : pool1
Pool context id  : 0x40080001
Pool grid       : 0x2
Pool type       : napt, multi-bind
Number of records : 3
Slot mask      : 0x40010
```

```
Reference counters (in circuits * classes):
```

Slot	1	2	3	4	5	6	9	10	11	12	13	14
	0	0	2	0	0	0	0	1	0	0	0	0

```
NAT Address Ranges:
```

Start-IP-Addr	End-IP-Addr	Start-Port	End-Port
100.1.1.3	100.1.1.3	45056	49151
100.1.1.3	100.1.1.3	49152	57343
100.1.1.3	100.1.1.3	57344	65535

1.4 show nd circuit

```
show nd circuit [circuit-handle | detail | interface]
```

1.4.1 Purpose

Displays Neighbor Discovery (ND) circuit information for one or more ND circuits.

1.4.2 Command Mode

all modes



1.4.3 Syntax Description

<code>circuit-handle</code>	<p>Optional. Circuit handle of the circuit, in the following syntax: <i>slot/port:channel:sub-channel/circuit-id</i>.</p> <ul style="list-style-type: none"> • <i>slot</i>—Chassis slot number of a traffic card to which the circuit is mapped. • <i>port</i>—Required if you enter the slot argument. Port number for the circuit. • <i>channel</i>—Channel number of the circuit. • <i>sub-channel</i>—Sub-channel number of the circuit. • <i>circuit-id</i>—Circuit ID number of circuit. <p>If circuit handle is omitted, circuit information for all circuits on the specified port or channel is displayed.</p>
<code>detail</code>	Optional. Displays detailed ND circuit information.
<code>interface</code>	Optional. Displays all ND circuits bound to the interface.

1.4.4 Default

None

1.4.5 Usage Guidelines

Use the `show nd circuit` command to display ND circuit information for one or more ND circuits. Specify a circuit handle to display ND circuit information for the specified circuit. If the circuit handle is omitted, a summary for all circuits on the specified port or channel is displayed.

The following ND information is included in the detailed display for a specified ND circuit:

- IPv6 prefixes assigned to the circuit.
- The ND profile assigned to the circuit, or the default ND profile if a profile is not assigned.
- The subscriber addresses formed by the host, and the SmartEdge router has learned of the addresses.
- Time, in seconds, when the next unsolicited Router Advertisement (RA) message is to be sent.
- Description of the reason the circuit is in the Down state, if the circuit is down.



- Circuit status.
- Circuit type (subscriber or nonsubscriber).

1.4.6 Examples

The following example displays ND circuit information for the circuit handle 1/4:1023:63/6/2/6:

```
[local]Redback>show nd circuit 1/4:1023:63/6/2/6
```

```
Circuit handle      : 1/4:1023:63/6/2/6      Intf grid          : 0x10000004
Mac addr           : 00:30:88:13:07:92      Status            : Up
Port type          : ethernet               Circuit type       : Subscriber
Interface name     : sub
Circuit MTU        : 1492                   Next RA message: 1(secs)
ND Profile         : profile7               IPv6 Proto State: Up
Subscriber Prefix  : 3ffe:a:c:1::/64
```

1.5 show nd interface

```
show nd interface [if-name] [detail]
```

1.5.1 Purpose

Displays interface information for one or more Neighbor Discovery (ND) router interfaces.

1.5.2 Command Mode

all modes

1.5.3 Syntax Description

<i>if-name</i>	Optional. Name of an ND router interface.
<i>detail</i>	Optional. Displays detailed interface information.

1.5.4 Default

None



1.5.5 Usage Guidelines

Use the **show nd interface** command to display interface information for one or more ND router interfaces.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see *Modifying Output of show Commands* in *Using the CLI*.

1.5.6 Examples

The following example displays interface information for the **sub** ND router interface, with all default settings:

```
[local]Redback>show nd interface sub
Intf Grid  Mac Address      Status Circuit      IPv6 Address
0x10000004 00:30:88:13:07:92 Up      3ffe:a:c::1/48 (mbind)
Interface name: sub, link-local address fe80::230:88ff:fe04:20bf
Subscriber circuit count: 1
Interface parameters:
RA suppress: no           RA reachable time(msec): 60000
RA interval(sec): 200      RA life time(sec): 1800
Managed address config: no Other stateful config: no
Prefix valid life(sec): 2592000 Prefix preferred life(sec): 604800
NS Retry interval(msec): 5000
```

1.6 show nd neighbor

show nd neighbor [ipv6-addr | detail | interface if-name]

1.6.1 Purpose

Displays neighbor information for one or more Neighbor Discovery (ND) router interfaces.

1.6.2 Command Mode

- all modes



1.6.3 Syntax Description

<code>ipv6-addr</code>	Optional. IP Version 6 (IPv6) address in the format A:B:C:D:E:F:G:H for which neighbor information is displayed.
<code>detail</code>	Optional. Displays detailed neighbor information.
<code>interface</code> <code>if-name</code>	Optional. Name of an ND router interface for which neighbor information is displayed.

1.6.4 Default

None

1.6.5 Usage Guidelines

Use the `show nd neighbor` command to display neighbor information for one or more ND router interfaces. Table 1 lists the fields displayed by this command without the `detail` keyword.

Table 1 Fields Displayed by the show nd neighbor Command

Field	Description
IPv6 Address	IPv6 address of the neighbor.
Age	Remaining time for which this neighbor is retained in the ND table.
Link-layer Addr	Medium access control (MAC) address of the neighbor.
State	Type of entry in the ND table, according to one of the following conditions: <ul style="list-style-type: none">• <code>intf</code>—IPv6 address and MAC address are for a local interface.• <code>reach</code>—IPv6 address and MAC address are for an external router, which is reachable.
Circuit	Physical circuit (slot number and port) over which an advertisement message from this neighbor was received.

Table 2 lists the additional fields that are displayed with the `detail` keyword.

Table 2 Fields Displayed by the show nd neighbor detail Command

Field	Description
<code>interface</code>	Name of the ND interface for this neighbor.



Table 2 Fields Displayed by the show nd neighbor detail Command

Field	Description
entry has <i>text</i> attribute(s)	Type of attributes for this neighbor, such as: <ul style="list-style-type: none"> • dynamic (nbr NA pkt)—This entry was discovered dynamically with an Neighbor Advertisement (NA) message. • dynamic (nbr NS pkt)—This entry was discovered dynamically with an Neighbor Solicitation (NS) message. • dynamic (nbr RA pkt)—This entry was discovered dynamically with a Router Advertisement (RA) message. • interface—This entry is for the ND interface.
Router refresh in <i>nnn</i> seconds	Time until the next refresh.
reachable uptime <i>dddhhmm</i>	Elapsed time that the neighbor has been reachable (days, hours, minutes).
number of times refreshed <i>nnn</i>	Number of times this neighbor entry has been refreshed during the reachable uptime period.
min/max request	Minimum and maximum number of NS messages sent during the reachable uptime period.
total NS/NA	Total number of NS and NA messages sent during the reachable uptime period.
min/max/avg resolution time	Minimum, maximum and average times to resolve this neighbor's IP address, in milliseconds, during the reachable uptime period.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context *ctx-name*** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context *ctx-name*** construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.6.6 Examples

The following example displays the neighbors for the **int1** ND router interface:



```
[local]Redback>show nd neighbor interface int1
```

IPv6 Address	Age	Link-layer Addr	State	Circuit
2002::2	0	00:30:88:00:11:0b	intf	3/8
2005::1	0	00:30:88:00:11:09	intf	3/6
2005::2	269	00:30:88:00:32:94	reach	3/6
2006::1	0	00:30:88:00:11:0f	intf	3/12
fe80::230:88ff:fe00:1109	0	00:30:88:00:11:09	intf	3/6
fe80::230:88ff:fe00:110b	0	00:30:88:00:11:0b	intf	3/8
fe80::230:88ff:fe00:110f	0	00:30:88:00:11:0f	intf	3/12
fe80::230:88ff:fe00:3294	15	00:30:88:00:32:94	reach	3/6
fe80::2b0:64ff:fe2c:523	272	00:b0:64:2c:05:23	reach	3/12

The following example displays detailed information for the known neighbors; only the output for the 2005::1 IPv6 address is listed:

```
[local]Redback>show nd neighbor detail
```

IPv6 Address	Age	Link-layer Addr	State	Circuit
2005::1	139	00:30:88:00:11:09	reach	1/8

```
interface: to_se2
```

```
the entry has dynamic(nbr NS pkt) attribute(s), Router
```

```
refresh in 160 sec, reachable uptime 02d15h57
```

```
number of time refreshed 816, min/max request 1/1, total NS/NA 817/817
```

```
min/max/avg resolution time 2/38/2 msec
```

1.7 show nd prefix

```
show nd prefix {all | interface {if-name | detail}}
```




1.7.1 Purpose

Displays prefix information for one or more Neighbor Discovery (ND) router interfaces.

1.7.2 Command Mode

- all modes

1.7.3 Syntax Description

all	Displays prefix information for all ND router interfaces in the context.
interface	Displays prefix information for one or more ND router interfaces.
if-name	Name of an ND router interface.
detail	Displays detailed prefix information.

1.7.4 Default

None

1.7.5 Usage Guidelines

Use the **show nd prefix** command to display prefix information for one or more ND router interfaces. Table 3 lists the fields displayed by this command without the **detail** keyword.

Table 3 Fields Displayed by the show nd prefix Command

Field	Description
IPv6 Addresses	IPv6 address of the neighbor.
Onlink	State of the onlink configuration flag.
Autoconf	State of the auto-configuration flag.
ValidLife	Value for the Valid Lifetime field.

*Table 3 Fields Displayed by the show nd prefix Command*

Field	Description
PrefLife	Value for the Preferred Lifetime field.
S	Status, according to one of the following conditions: <ul style="list-style-type: none">• c—Prefix is explicitly configured with the prefix command (in ND router interface configuration mode).• i—Prefix is derived from the IPv6 address of the ND router interface.

Table 4 lists the fields displayed by this command with the **detail** keyword.

Table 4 Fields Displayed by the show nd prefix detail Command

Field	Description
Intf Grid	Internal system ID for the interface for this prefix.
Mac Address	Configured medium access control (MAC) address for this prefix.
Status	Physical circuit status, according to one of the following conditions: <ul style="list-style-type: none">• Down—Circuit is not operational.• Up—Circuit is operational.
Circuit	Physical circuit ID, in one of the following formats: <ul style="list-style-type: none">• Cct invalid—Circuit is not bound to an interface.• <i>slot/port:internal circuit ID</i>.
IPv6 Address	Configured IPv6 address for this prefix.
interface name	Name of the ND interface for this prefix.
link-local address	Link address, derived by the system from the MAC address for the port prefix.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.



Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.7.6 Examples

The following example displays ND prefixes for all ND interfaces:

```
[local]Redback>show nd prefix all
ND prefix(es) on interface int1:
IPv6 Address          Onlink  AutoConf  ValidLife  PrefLife  S
2005::1/64             Y       Y         2592000    604800    i
2006::1/64             Y       Y         2592000    604800    c
  on interface ipv6-tunnel:
2006::2/64             Y       Y         2592000    604800    i
```

The following example displays detailed information for ND prefixes:

```
[local]Redback>show nd prefix interface detail
Intf Grid  Mac Address          Status Circuit          IPv6 Address
0x10000005 00:00:00:00:00:00 Down   Cct invalid            2005::1/64
  interface name: int1, link-local address ::
0x1000000a 00:00:00:00:00:00 Down   Cct invalid            2006::2/64
  interface name: ipv6-tunnel, link-local address ::
```

1.8 show nd profile

show nd profile [*profile-name*]

1.8.1 Purpose

Displays ND profile information for a context.

1.8.2 Command Mode

all modes

1.8.3 Syntax Description

profile-name | Optional. Name of an ND profile.

1.8.4 Default

None



1.8.5 Usage Guidelines

Use the **show nd profile** command to display ND profile information for a context. If the profile name is omitted from the command, then all ND profiles within the context (including the default profile GLOBAL_DEFAULT_PROFILE) is displayed. If an ND profile name is specified, all of the ND profile parameters for the specified profile are displayed.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.8.6 Examples

The following example displays ND profile information for the profile **profile7**:

```
[local]Redback>show nd profile profile7
```

```
--- ND Profile profile7 ---
```

Grid	: 4		
RA Flags	: On-Link		
RA Interval	: 5	RA Lifetime	: 1000
NS Retry	: 5000	# Subscriber Ckts	: 1
Preferred Lifetime	: 18000	Valid Lifetime	: 25000
# DAD Retries	: 1	IPV6 Down on DAD Failure:	FALSE

The following example displays ND profile information for all ND profiles in the context, including GLOBAL_DEFAULT_PROFILE, the default profile:

```
[local]Redback>show nd profile
```

Profile Name	Grid	Ckts
GLOBAL_DEFAULT_PROFILE	0	0
profile7	4	1



1.9 show nd static-neighbor

```
show nd static-neighbor {all | interface {if-name | detail}}
```

1.9.1 Purpose

Displays information for the configured static neighbors for one or more Neighbor Discovery (ND) router interfaces.

1.9.2 Command Mode

- all modes

1.9.3 Syntax Description

<code>all</code>	Displays static-neighbor information for all ND router interfaces in the context.
<code>interface</code>	Displays static-neighbor information for one or more ND router interfaces.
<code>if-name</code>	Name of an ND router interface.
<code>detail</code>	Displays detailed static-neighbor information.

1.9.4 Default

None

1.9.5 Usage Guidelines

Use the `show nd static-neighbor` command to display information for the configured static neighbors for one or more ND router interfaces.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.



1.9.6 Examples

The following example displays the static neighbors for the `int1` ND router interface:

```
[local]Redback>show nd static-neighbor interface int1
```

ND static neighbor(s) on interface int1:

IPv6 Address	Mac Address
2006::1	00:30:88:00:0a:30

1.10 show nd statistics

```
show nd statistics [interface if-name]
```

1.10.1 Purpose

Displays global statistics for one or more Neighbor Discovery (ND) router interfaces.

1.10.2 Command Mode

- all modes

1.10.3 Syntax Description

<code>interface</code> <code><i>if-name</i></code>	Optional. Name of an ND router interface for which statistics are displayed.
---	--

1.10.4 Default

None

1.10.5 Usage Guidelines

Use the `show nd statistics` command to display global statistics for one or more ND router interfaces. Table 5 lists the fields displayed by this command; entries are listed for each ND interface.



Table 5 Fields Displayed by the show nd statistics Command

Field	Description
RS	Number of Router Solicitation (RS) messages sent and received.
RA	Number of Router Advertisement (RA) messages sent and received.
NS	Number of Neighbor Solicitation (NS) messages sent and received.
NA	Number of Neighbor Advertisement (NA) messages sent and received.
OTHER	Number of other types of messages sent and received.
BAD	Number of malformed or unsupported messages sent and received.
TOTAL	Number of all types of messages sent and received.
cache miss/upload	Number of cache misses and uploads.
rib req/clear	Number of Routing Information Base (RIB) request and clear operations.
install/delete	Number of installation and deletion operations in the ND table.
total neighbor entries	Number of neighbor entries in the ND table (of all types).
static	Number of static neighbor entries in the ND table.
interface	Number of interface neighbor entries in the ND table.
subscriber	Number of subscriber neighbor cache entries in the ND table.
dynamic	Number of dynamic (discovered by the ND router for this interface) neighbor entries in the ND table.
total reachable neighbor entries	Number of neighbor entries in the ND table (of all types) that can be reached.
total subscriber ckts	Number of subscriber circuits.
up	Number of subscriber circuits currently in an up state.
ipv6 up	Number of subscriber circuits in which the IPv6 stack is in an up state.
down	Number of subscriber circuits currently in a down state.
deleted	Number of subscriber circuits deleted.
DAD reported	Number of duplicate IPv6 addresses detected.
last time stats cleared at <i>hh:mm:ss</i> ago	Last time that the global ND statistics were cleared (using the <code>clear nd statistics all</code> command).



Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context** *ctx-name* construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context** *ctx-name* construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.10.6 Examples

The following example displays statistics for the `int1` ND router interface:

```
[local]Redback>show nd statistics interface int1
ND statistics for interface int1:

      RS      RA      NS      NA      OTHER      BAD      TOTAL
Send: 0      836     3008     3271         0         0      7115
Recv: 0      819     3274     2979        15         0      7087

cache-miss/upload 4/0, rib req/clear 0/0, install/delete 836/4
total neighbor entries 9; static 0, interface 6, subscriber 0 dynamic 3
total reachable neighbor entries 7
total subscriber ckts 5; up 5, ipv6 up 5, down 0, deleted 0
Duplicate Addresses (DAD) reported 0
last time stats cleared at 21:04:19 ago
```

1.11 show nd summary

show nd summary

1.11.1 Purpose

Displays Neighbor Discovery (ND) summary information for the ND router global settings.

1.11.2 Command Mode

- all modes

1.11.3 Syntax Description

This command has no keywords or arguments.



1.11.4 Default

None

1.11.5 Usage Guidelines

Use the `show nd summary` command to display ND summary information for the ND router global settings.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (`|`) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.11.6 Examples

The following example displays ND summary information for the ND router global settings; in this case, the settings are all defaults:

```
[local]Redback>show nd summary
```

ND router global setting:

```
RA suppress: no                      RA reachable time(msec): 0
RA interval(sec): 200                RA life time(sec): 1800
Managed address config: no          Other stateful config: no
Prefix valid life(sec): 2592000      Prefix preferred life(sec): 604800
NS interval(msec): 0
```

1.12 show netop

```
show netop {advertise | snmp version | connection-mode}
```



1.12.1 Purpose

Displays the configuration of the communication between the NetOp Element Management System (EMS) server and the SmartEdge router.

1.12.2 Command Mode

- all modes

1.12.3 Syntax Description

<code>advertise</code>	Displays configuration information for advertisement packets.
<code>snmp version</code>	Displays the version of the SNMP traps that are sent to the NetOp EMS server.
<code>connection-mode</code>	Displays the type of encryption the SmartEdge router allows, if any, on the connection between the NetOp EMS server and the SmartEdge router.

1.12.4 Default

None

1.12.5 Usage Guidelines

Use the `show netop` command to display the configuration of the communication between the NetOp EMS server and the SmartEdge router.

This communication is configured by the `connection mode` command (in NetOp configuration mode); for information about this command, see the *Command List*.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.



1.12.6 Examples

The following example displays the configuration data for the advertisement packets sent to a NetOp EMS server:

```
[local]Redback>show netop advertise
```

IP Address	Port	Interval	Node Group
192.168.0.1	6581	10	NOCuser1

The following example shows that the SmartEdge router allows both unencrypted and Transport Layer Security (TLS) communication between itself and the NetOp EMS server:

```
[local]Redback>show netop connection-mode
```

```
unencrypted
```

```
tls
```

1.13 show ntp associations

```
show ntp associations[remote-ip-addr] [detail [all-contexts]]
```

1.13.1 Purpose

Displays current associations among Network Time Protocol (NTP) servers and peers, and reports NTP daemon statistics.

1.13.2 Command Mode

all modes



1.13.3 Syntax Description

<code>remote-ip-addr</code>	Displays the status of a remote peer.
<code>detail</code>	Specifies detailed clock statistics.
<code>all-contexts</code>	Optional with the <code>detail</code> keyword; displays information for all contexts.

1.13.4 Default

None

1.13.5 Usage Guidelines

Use the `show ntp associations` command to display current associations among NTP servers, peers, and clients, and report NTP statistics. To display the status of a remote peer, add the `remote-ip-addr` argument. For NTP statistics for the current context, use the `show ntp associations` construct. To display data for all contexts add the `all-contexts` keyword.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (`|`) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.13.6 Examples

The following example displays detailed NTP associations data for the current context:



```
[local]Redback#show ntp associations detail
remote 10.192.16.236, local 10.192.35.52
hmode client, pmode server, stratum 4, precision -18
leap 00, refid [155.53.174.12], rootdistance 0.26860, rootdispersion 0.13405
ppoll 10, hpoll 10, keyid 0, version 3, association 39940
valid 4, reach 067, unreach 0, flash 0x0000, boffset 0.00000, ttl/mode 0
timer 16589676s, flags config, bclient
reference time:      cflaedc2.701da7fc  Mon, Feb  8 2010 12:08:34.437
originate timestamp: cflaf178.718ca2a0  Mon, Feb  8 2010 12:24:24.443
receive timestamp:   cflaf178.6f854046  Mon, Feb  8 2010 12:24:24.435
transmit timestamp:   cflaf0a3.f8394749  Mon, Feb  8 2010 12:20:51.969
filter delay:  0.00473  0.00461  0.00185  0.00194
                0.00272  1.00363  0.00000  0.00000
filter offset: 0.010296 0.010356 0.009153 0.009196
                0.010260 -0.48957 0.000000 0.000000
filter order:  1      0      2      3
                4      5      6      7
offset 0.010356, delay 0.00461, error bound 0.43840, filter error 0.17682
context id: 0x40080001

remote 155.53.12.12, local 10.192.35.52
hmode client, pmode server, stratum 4, precision -18
leap 00, refid [130.100.199.242], rootdistance 0.21339, rootdispersion 0.10818
ppoll 10, hpoll 10, keyid 0, version 3, association 39941
valid 7, reach 377, unreach 0, flash 0x0000, boffset 0.00000, ttl/mode 0
timer 16589676s, flags system_peer, config, bclient
reference time:      cflae73a.0ble2476  Mon, Feb  8 2010 11:40:42.043
originate timestamp: cflaeff7.493bfb9d  Mon, Feb  8 2010 12:17:59.286
receive timestamp:   cflaeff7.b8f1b25f  Mon, Feb  8 2010 12:17:59.722
transmit timestamp:   cflaeff7.40a54823  Mon, Feb  8 2010 12:17:59.252
filter delay:  0.46986  0.24446  0.05669  0.26521
                0.79604  0.81943  0.10710  0.06923
filter offset: -0.20143 -0.08754 0.007487 -0.10189
                -0.36687 -0.37947 -0.02487 -0.00480
filter order:  2      1      3      0
                4      5      6      7
offset 0.007487, delay 0.05669, error bound 0.17146, filter error 0.12712
context id: 0x40080001
```

1.14 show ntp status

show ntp status

1.14.1 Purpose

Displays the current Network Time Protocol (NTP) parameter settings and synchronization status.

1.14.2 Command Mode

all modes

1.14.3 Syntax Description

This command has no keywords or arguments.



1.14.4 Default

None

1.14.5 Usage Guidelines

Use the `show ntp status` command to display NTP parameter settings and synchronization status.

If the `slowsync` command (in NTP configuration mode) has not been enabled, it takes a few seconds for the NTP daemon to adjust time with valid NTP servers. While the NTP daemon is in the process of collecting samples from remote NTP servers, the `Source is not synced yet` message is displayed; see the “Examples” section. For more information about the `slowsync` command, see the *Command List*.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (`|`) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.14.6 Examples

The following example contains sample output in a case where synchronization has taken place after five minutes:



```
[local]Redback>show ntp status
```

```
Ntpd version 4.0.98f
system peer: 155.53.12.12
system peer mode: client
leap indicator: 00
stratum: 3
precision: -15
root distance: 0.02441 s
root dispersion: 0.04129 s
reference ID: [155.53.12.12]
reference time: bde128a0.ea5204af Mon, Nov 21 2005 14:43:44.915
system flags: bclient monitor ntp kernel stats kernel_sync
jitter: 0.003784 s
stability: 0.035 ppm
broadcastdelay: 0.003998 s
authdelay: 0.000000 s
```

The following example shows sample output in a case where the NTP daemon has been started, but is in the process of trying to synchronize (within the first five minutes) with the remote server:

```
[local]Redback>show ntp status
```

```
Ntpd version 4.0.98f
Source is not synced yet
```



The following example shows sample output in a case where the daemon has not been started:

```
[local]Redback>show ntp status
```

```
Ntpd version 4.0.98f
```

```
... not running
```

1.15 show ospf

```
show ospf [instance-id]
```

1.15.1 Purpose

Displays high-level information for all Open Shortest Path First (OSPF) instances, or optionally, for a specific instance.

1.15.2 Command Mode

all modes

1.15.3 Syntax Description

<i>instance-id</i>	Optional. The ID of a specific instance. The range of values is 1 to 65,535.
--------------------	--

1.15.4 Default

Displays OSPF instance information for all instances associated with the context.

1.15.5 Usage Guidelines

Use the `show ospf` command to display high-level information for all OSPF instances, or optionally, for a specific OSPF instance. This command can be executed on the active and standby XCRPs to verify nonstop-routing (NSR) support and status.



Note: By default, most **show** commands in any mode display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can precede the **show** command with the **context ctx-name** construct to view output for the specified context without entering that context. For more information, see the **context** command description.

Note: To filter the output, at the end of the **show** command, append a space followed by a pipe (|) and the keywords and arguments for filtering. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.15.6 Examples

The following example displays output from the **show ospf 1** command for OSPF instance 1:

```
[local]Redback>show ospf 1
```

```

--- OSPF Instance 1/Router ID 11.11.11.11 ---

Intra-Distance   : 110                Inter-Distance   : 110
Ext-Distance     : 110                Type of Service  : TOS-Type0
Area Border Rtr  : No                 AS Boundary Rtr  : No
Auto-Cost        : Yes                Flood Queued     : 0
SPF Delay        : 5                  SPF Holdtime     : 10
Full SPF Count   : 7                  Incr SPF Count   : 0
Full SPF Vers    : 7                  Incr SPF Vers    : 0
SPF LastCompute  : 00:05:26           Nbrs Adjacent    : 2
Nbrs Exchanging  : 0                  Global Exchg Max : 300
Redist Metric     : Unspecified        Redist Queued    : 0
Redist Count     : 0                  Redist Quantum   : 2000
Stub Rtr Config  : None                Stub Rtr Delay   : 0
Stub Router      : No                 BGP Converged    : No
MPLS Traffic Eng: No                  IGP Shortcuts    : Yes
Demand DC Clear  : 10001              Demand Indicate  : 0
Demand DoNotAge  : 0                  Helper Neighbors : 65535
Graceful Restart : No                  Restart Status   : No Restart
Graceful Helper  : Yes                 Strict Check     : No
Fast Convergence : Yes                 Fast LSA Orig    : No
Nonstop-Routing  : No NSR              NSR Status       : N/A
Tunnel Shortcuts : Yes
Redist Pending   : No

Area List (1 total):
0.0.0.0
```

Using the **show ospf 1** command on the standby XCRP displays the NSR status to verify the NSR availability of the standby XCRP.



```
standby#show ospf 1
```

```
--- OSPF Instance 1 (Shutdown)/Router ID 11.11.11.11 ---
```

Intra-Distance	: 110	Inter-Distance	: 110
Ext-Distance	: 110	Type of Service	: TOS-Type0
Area Border Rtr	: No	AS Boundary Rtr	: No
Auto-Cost	: Yes	Flood Queued	: 0
SPF Delay	: 5	SPF Holdtime	: 10
Full SPF Count	: 0	Incr SPF Count	: 0
Full SPF Vers	: 0	Incr SPF Vers	: 0
SPF LastCompute	: N/A	Nbrs Adjacent	: 0
Nbrs Exchanging	: 0	Global Exchg Max	: 300
Redist Metric	: Unspecified	Redist Queued	: 0
Redist Count	: 0	Redist Quantum	: 2000
Stub Rtr Config	: None	Stub Rtr Delay	: 0
Stub Router	: No	BGP Converged	: No
MPLS Traffic Eng	: No	IGP Shortcuts	: Yes
Demand DC Clear	: 0	Demand Indicate	: 0
Demand DoNotAge	: 0	Helper Neighbors	: 0
Graceful Restart	: No	Restart Status	: No Restart
Graceful Helper	: Yes	Strict Check	: No
Fast Convergence	: Yes	Fast LSA Orig	: No
Nonstop-Routing	: Yes	NSR Status	: Ready
Tunnel Shortcuts	: Yes		
Redist Pending	: No		
Shut Conditions	:		

```
Area List (1 total):  
0.0.0.0
```

1.16 show ospf3

```
show ospf3 [instance-id]
```

1.16.1 Purpose

Displays high-level information for all Open Shortest Path First Version 3 (OSPFv3) instances, or optionally, for a specific instance.

1.16.2 Command Mode

all modes



1.16.3 Syntax Description

`instance-id` | Optional. Instance ID. The range of values is 1 to 65,535.

1.16.4 Default

Displays OSPFv3 instance information for all instances associated with the context.

1.16.5 Usage Guidelines

Use the `show ospf3` command to display high-level information for all OSPFv3 instances, or optionally, for a specific OSPFv3 instance.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.16.6 Examples

The following example displays output from the `show ospf3` command for OSPFv3 instance 1:



```
[local]Redback>show ospf3 1
```

```
--- OSPFv3 Instance 1/Router ID 2.2.2.2 ---
```

Intra-Distance	: 110	Inter-Distance	: 110
Ext-Distance	: 110	AS Scoped LSA	: 0
Area Border Rtr	: No	AS Boundary Rtr	: No
Auto-Cost	: Yes	Flood Queued	: 0
SPF Delay	: 10	SPF Holdtime	: 0
Full SPF Count	: 4	Incr SPF Count	: 0
Full SPF Vers	: 4	Incr SPF Vers	: 0
SPF LastCompute	: 00:01:47	Nbrs Adjacent	: 2
Nbrs Exchanging	: 0	Global Exchg Max:	300
Redist Metric	: Unspecified	Redist Queued	: 0
Redist Count	: 0	Redist Quantum	: 2000
Stub Rtr Config	: None	Stub Rtr Delay	: 0
Stub Router	: No	BGP Converged	: No
MPLS Traffic Eng:	No	MPLS Shortcuts	: No
Demand DC Clear	: 0	Demand Indicate	: 0
Demand DoNotAge	: 0	Helper Neighbors:	0
Graceful Restart:	Disabled	Restart Status	: No Restart
Helper StrictChk:	No		

```
Area List (1 total):
```

```
0.0.0.0
```



1.17 show ospf3 area

```
show ospf3 area [instance-id {area-id | ip-addr}] [brief]
```

1.17.1 Purpose

Displays information about Open Shortest Path First Version 3 (OSPFv3) areas.

1.17.2 Command Mode

all modes

1.17.3 Syntax Description

<i>instance-id</i>	Optional. Instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. IP address.
<i>brief</i>	Optional. Provides a summary of information.

1.17.4 Default

Displays summary information for all OSPFv3 areas.

1.17.5 Usage Guidelines

Use the `show ospf3 area` command to display information about OSPFv3 areas.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.17.6 Examples

The following example displays output from the `show ospf3 area` command:



```
[local]Redback>show ospf3 area
```

```
--- OSPFv3 Area 0.0.0.0 Instance 1/Router ID 2.2.2.2 ---
```

Area Type	: Regular	Interface Count	: 3
LSA Count	: 13	LSA Checksum	: 0x06f2c6
ABR Count	: 0	ASBR Count	: 0
Adjacent Nbrs	: 2	Up Interfaces	: 3
Demand DC Clear	: 0	Demand Indicate	: 0
Demand DoNotAge	: 0	Max Indicate ID	: 0.0.0.0

```
Interface ID List:
```

```
0.0.0.1      0.0.0.2      0.0.0.4
```

The following example displays output from the **show ospf3 area 1 0.0.0.0** command:



```
[local]Redback>show ospf3 area 1 0.0.0.0
```

```
--- OSPFv3 Area 0.0.0.0 Instance 1/Router ID 2.2.2.2 ---
```

Area Type	: Regular	Interface Count:	3
LSA Count	: 13	LSA Checksum	: 0x06f2c6
ABR Count	: 0	ASBR Count	: 0
Adjacent Nbrs	: 2	Up Interfaces	: 3
Demand DC Clear:	0	Demand Indicate:	0
Demand DoNotAge:	0	Max Indicate ID:	0.0.0.0

Interface ID List:

```
0.0.0.1      0.0.0.2      0.0.0.4
```

The following example displays output from the **show ospf3 area brief** command:

```
[local]Redback>show ospf3 area brief
```

```
--- OSPFv3 Areas for Instance 1/Router ID 2.2.2.2 ---
```

Area	Type	Intf-Count	LSA-Count	LSA cksum
0.0.0.0	Regular	3	13	0x0006f2c6

1.18 show ospf3 asbr

```
show ospf3 asbr [instance-id [all]] [all]
```



1.18.1 Purpose

Displays routes to autonomous system boundary routers (ASBRs) and other Open Shortest Path First Version 3 (OSPFv3) routers.

1.18.2 Command Mode

all modes

1.18.3 Syntax Description

<i>instance-id</i>	Optional. Instance ID. The range of values is 1 to 65,535.
<i>all</i>	Optional. Displays information about ASBRs and other OSPFv3 routers.

1.18.4 Default

None

1.18.5 Usage Guidelines

Use the `show ospf3 asbr` command to display routes to ASBRs and other OSPFv3 routers.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.18.6 Examples

The following example displays routes to all ASBRs:



```
[local]Redback>show ospf3 asbr
```

```
--- ASBR entries for OSPFv3 Instance 1/Router ID 2.2.2.2 ---
```

Destination	Cost	Route-Type	Area	NextHop
3.3.3.3	1	Intra	0.0.0.0	fe80::230:88ff:fe00:3294

The following example displays routes to ASBR 5:

```
[local]Redback>show ospf3 asbr 5
```

```
--- ASBR entries for OSPFv3 Instance 5/Router ID 2.2.2.2 ---
```

Destination	Cost	Route-Type	Area	NextHop
3.3.3.3	1	Intra	0.0.0.0	1280::230:88fd:fe00:3567

The following example displays routes to all ASBRs and other OSPFv3 routes:

```
[local]Redback>show ospf3 asbr all
```

```
--- ASBR entries for OSPFv3 Instance 1/Router ID 2.2.2.2 ---
```

Destination	Cost	Route-Type	Area	NextHop
3.3.3.3	1	Intra	0.0.0.0	fe80::230:88ff:fe00:3294

1.19 show ospf3 database

```
show ospf3 database [instance-id] [area-id / ip-addr] [detail]
[summary]
```



1.19.1 Purpose

Displays information stored in the Open Shortest Path First Version 3 (OSPFv3) link-state database (LSDB).

1.19.2 Command Mode

all modes

1.19.3 Syntax Description

<i>instance-id</i>	Optional. OSPFv3 instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. Area IP address.
<i>detail</i>	Optional. Displays detailed information.
<i>summary</i>	Optional. Displays summary information.

1.19.4 Default

None

1.19.5 Usage Guidelines

Use the `show ospf3 database` command to display information stored in the OSPFv3 LSD.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.



1.19.6 Examples

The following example provides information about link-state advertisement (LSA) type, link ID, advertising router IP address, link-state age, checksums, and sequence number:

```
[local]Redback>show ospf3 database
```

```
--- OSPFv3 Link State Database for Instance 1/Router ID 2.2.2.2 ---
```

Router Link State Advertisements (Area 0.0.0.0)

LinkID	AdvertisingRtr	Sequence #	ChkSm	Length	LSAge
0.0.0.0	2.2.2.2	80000006	9b12	56	440
0.0.0.0	3.3.3.3	80000005	7336	56	90
0.0.0.0	4.4.4.4	80000198	bf3b	56	410

Network Link State Advertisements (Area 0.0.0.0)

LinkID	AdvertisingRtr	Sequence #	ChkSm	Length	LSAge
0.0.0.4	2.2.2.2	80000001	6781	32	440
0.0.0.5	4.4.4.4	80000001	6572	32	432
0.0.0.6	4.4.4.4	80000001	29b1	32	457

Intra Area Prefix Link State Advertisements (Area 0.0.0.0)

LinkID	AdvertisingRtr	Sequence #	ChkSm	Length	LSAge
0.0.0.0	2.2.2.2	8000000a	1b04	52	440
0.0.0.4	2.2.2.2	80000001	b996	52	440
0.0.0.0	3.3.3.3	80000006	59c0	52	433
0.0.3.237	4.4.4.4	80000001	cf80	52	432



0.0.3.238	4.4.4.4	80000001	bb93	52	457
-----------	---------	----------	------	----	-----

Link Type Link State Advertisements (Area 0.0.0.0)

LinkID	AdvertisingRtr	Sequence #	ChkSm	Length	LSAge
0.0.0.2	2.2.2.2	80000001	d92d	64	462
0.0.0.6	4.4.4.4	80000002	4524	64	1678
0.0.0.2	10.12.209.174	80000001	86f1	64	600
0.0.0.4	2.2.2.2	80000001	21ea	64	462
0.0.0.4	3.3.3.3	80000001	b8a2	64	445
0.0.0.4	10.12.209.163	80000001	c516	64	1283
0.0.0.4	10.12.209.174	80000001	cdaf	64	600

External Link State Advertisements

LinkID	AdvertisingRtr	Sequence #	ChkSm	Length	LSAge
0.0.0.18	3.3.3.3	80000001	3829	36	90
0.0.0.19	3.3.3.3	80000001	aaa4	36	90

1.20 show ospf3 database advertising router

```
show ospf3 database [instance-id] [area-id / ip-addr] advertising  
router {router-id | self-originate} [detail [debug] | debug]
```

1.20.1 Purpose

Displays information about Open Shortest Path First Version 3 (OSPFv3) advertising router link-state advertisements (LSAs).

1.20.2 Command Mode

all modes



1.20.3 Syntax Description

<i>instance-id</i>	Optional. OSPFv3 instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. Area IP address.
<i>router-id</i>	OSPFv3 router ID in the form <i>A.B.C.D</i> .
self-originate	Displays self-originated LSAs.
detail	Optional. Provides detailed information.
debug	Optional. Displays debug information.

1.20.4 Default

None

1.20.5 Usage Guidelines

Use the **show ospf3 database advertising router** command to display information about OSPFv3 advertising router LSAs.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.20.6 Examples

The following example provides information specific to the advertising router, 3.3.3.3:



```
[local]Redback>show ospf3 database advertising-router 3.3.3.3
```

```
--- OSPFv3 Link State Database for Instance 1/Router ID 2.2.2.2 ---
```

```
Router Link State Advertisements (Area 0.0.0.0)
```

LinkID	AdvertisingRtr	Sequence #	ChkSm	Length	LSAge
0.0.0.0	3.3.3.3	80000005	7336	56	127

```
Intra Area Prefix Link State Advertisements (Area 0.0.0.0)
```

LinkID	AdvertisingRtr	Sequence #	ChkSm	Length	LSAge
0.0.0.0	3.3.3.3	80000006	59c0	52	470

```
Link Type Link State Advertisements (Area 0.0.0.0)
```

LinkID	AdvertisingRtr	Sequence #	ChkSm	Length	LSAge
0.0.0.4	3.3.3.3	80000001	b8a2	64	482

```
External Link State Advertisements
```

LinkID	AdvertisingRtr	Sequence #	ChkSm	Length	LSAge
0.0.0.18	3.3.3.3	80000001	3829	36	127
0.0.0.19	3.3.3.3	80000001	aaa4	36	127

1.21 show ospf3 database grace

```
show ospf3 database [instance-id] [area-id / ip-addr] grace [all  
[router-id] | link-id [router-id | self-originate] | self-originate]  
[detail [debug] | debug]
```



1.21.1 Purpose

Displays information about Open Shortest Path First Version 3 (OSPFv3) grace link-state advertisement (LSA) database entries.

1.21.2 Command Mode

all modes

1.21.3 Syntax Description

<i>instance-id</i>	Optional. OSPFv3 instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. Area IP address.
<i>all</i>	Optional. Displays all grace LSAs.
<i>router-id</i>	Optional. Advertising router ID in the form <i>A.B.C.D</i> .
<i>link-id</i>	Optional. LSA ID in the form <i>A.B.C.D</i> .
<i>self-originate</i>	Optional. Displays self-originated LSAs.
<i>detail</i>	Optional. Provides detailed information.
<i>debug</i>	Optional. Displays debug information.

1.21.4 Default

None

1.21.5 Usage Guidelines

Use the **show ospf3 database grace** command to display information about OSPFv3 grace LSA database entries.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.



Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.21.6 Examples

The following example displays general output from the **show ospf3 database grace** command:

```
[local]Redback>show ospf3 database grace

--- OSPFv3 Link State Database for Instance 1/Router ID 2.2.2.2 ---

      Grace Link State Advertisements (Area 0.0.0.0)
LinkID      AdvertisingRtr  Sequence #  ChkSm  Length  LSAge
0.0.0.4     2.2.2.2                80000001   bb07   36      59
```

The following example displays detailed output from the **show ospf3 database grace** command:

```
[local]Redback>show ospf3 database grace detail

--- OSPFv3 Link State Database for Instance 1/Router ID 2.2.2.2 ---

      --- Grace LSA 0.0.0.4 (Area 0.0.0.0) ---

Link State Id      : 0.0.0.4          Advertising Router  : 2.2.2.2
Sequence Number    : 0x80000001      Checksum           : 0xbb07
Length             : 36
```

1.22 show ospf3 database inter-prefix

```
show ospf3 database [instance-id] [area-id / ip-addr]
inter-prefix [all [router-id] | link-id [router-id] | self-originate]
| self-originate] [detail [debug] | debug]
```

1.22.1 Purpose

Displays information about Open Shortest Path First Version 3 (OSPFv3) interarea prefix link-state advertisement (LSA) database entries.

1.22.2 Command Mode

all modes



1.22.3 Syntax Description

<i>instance-id</i>	Optional. OSPFv3 instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. Area IP address.
all	Optional. Displays all interarea prefix LSAs.
<i>router-id</i>	Optional. Advertising router ID in the form <i>A.B.C.D</i> .
<i>link-id</i>	Optional. LSA ID in the form <i>A.B.C.D</i> .
self-originate	Optional. Displays self-originated LSAs.
detail	Optional. Provides detailed information.
debug	Optional. Displays debug information.

1.22.4 Default

None

1.22.5 Usage Guidelines

Use the **show ospf3 database inter-prefix** command to display information about OSPFv3 interarea prefix LSA database entries.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.22.6 Examples

The following example displays general output from the **show ospf3 database inter-prefix** command:



```
[local]Redback>show ospf3 database inter-prefix

--- OSPFv3 Link State Database for Instance 1/Router ID 2.2.2.2 ---

      Inter Area Prefix Link State Advertisements (Area 0.0.0.0)
LinkID      AdvertisingRtr  Sequence #  ChkSm  Length  LSAge
0.0.0.15    3.3.3.3              80000002   d997   44      763
```

The following example displays detailed output from the **show ospf3 database inter-prefix** command:

```
[local]Redback>show ospf3 database inter-prefix detail

--- OSPFv3 Link State Database for Instance 1/Router ID 2.2.2.2 ---

--- Inter Area Prefix LSA 0.0.0.15 (Area 0.0.0.0) ---

Link State Id      : 0.0.0.15          Advertising Router   : 3.3.3.3
Sequence Number    : 0x80000002        Checksum            : 0xd997
Length             : 44
Age                : 767
Metric             : 10
IPV6Prefix         : 2007::/112
```

1.23 show ospf3 database inter-router

```
show ospf3 database [instance-id] [area-id / ip-addr]
inter-router [all [router-id] | link-id [router-id | self-originate]
| self-originate] [detail [debug] | debug]
```

1.23.1 Purpose

Displays information about Open Shortest Path First Version 3 (OSPFv3) interarea router link-state advertisement (LSA) database entries.

1.23.2 Command Mode

all modes

1.23.3 Syntax Description

<i>instance-id</i>	Optional. OSPFv3 instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. Area IP address.
all	Optional. Displays all interarea router LSAs.
<i>router-id</i>	Optional. Advertising router ID in the form A.B.C.D .
<i>link-id</i>	Optional. LSA ID in the form A.B.C.D .



self-originate	Optional. Displays self-originated LSAs.
detail	Optional. Provides detailed information.
debug	Optional. Displays debug information.

1.23.4 Default

None

1.23.5 Usage Guidelines

Use the **show ospf3 database inter-router** command to display information about OSPFv3 interarea router LSA database entries.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.23.6 Examples

The following example displays general output from the **show ospf3 database inter-router** command:

```
[local]Redback>show ospf3 database inter-router

--- OSPFv3 Link State Database for Instance 1/Router ID 2.2.2.2 ---

      Inter Area Router Link State Advertisements (Area 0.0.0.0)
LinkID      AdvertisingRtr  Sequence #  ChkSm  Length  LSAge
0.0.0.20    3.3.3.3             80000001   deed   32      644
```

The following example displays detailed output from the **show ospf3 database inter-router** command:

```
[local]Redback>show ospf3 database inter-router detail

--- OSPFv3 Link State Database for Instance 1/Router ID 2.2.2.2 ---

      --- Inter Area Router LSA 0.0.0.20 (Area 0.0.0.0) ---

Link State Id      : 0.0.0.20          Advertising Router   : 3.3.3.3
Sequence Number    : 0x80000001        Checksum            : 0xdeed
Length             : 32                 Options             : V6,E,R,DC
Metric             : 10                 Age                 : 647
Router-Id          : 4.4.4.4
```



1.24 show ospf3 database intra-prefix

```
show ospf3 database [instance-id] [area-id / ip-addr]  
inter-router [all [router-id] | link-id [router-id | self-originate]  
| self-originate] [detail [debug] | debug]
```

1.24.1 Purpose

Displays information about Open Shortest Path First Version 3 (OSPFv3) intra-area prefix link-state advertisement (LSA) database entries.

1.24.2 Command Mode

all modes

1.24.3 Syntax Description

<i>instance-id</i>	Optional. OSPFv3 instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. Area IP address.
all	Optional. Displays all intra-area prefix LSAs.
<i>router-id</i>	Optional. Advertising router ID in the form A.B.C.D .
<i>link-id</i>	Optional. LSA ID in the form A.B.C.D .
self-originate	Optional. Displays self-originated LSAs.
detail	Optional. Provides detailed information.
debug	Optional. Displays debug information.

1.24.4 Default

None

1.24.5 Usage Guidelines

Use the `show ospf3 database intra-prefix` command to display information about OSPFv3 intra-area prefix LSA database entries.



Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context** *ctx-name* construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context** *ctx-name* construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.24.6 Examples

The following example displays output from the **show ospf3 database intra-prefix** command:

```
[local]Redback>show ospf3 database intra-prefix
```

```
--- OSPFv3 Link State Database for Instance 1/Router ID 2.2.2.2 ---
```

```

      Intra Area Prefix Link State Advertisements (Area 0.0.0.0)

LinkID           AdvertisingRtr   Sequence #   ChkSm   Length   LSAge
0.0.0.0           2.2.2.2             8000000a    1b04    52       572
0.0.0.4           2.2.2.2             80000001    b996    52       572
0.0.0.0           3.3.3.3             80000006    59c0    52       565
0.0.3.237         4.4.4.4             80000001    cf80    52       564
0.0.3.238         4.4.4.4             80000001    bb93    52       589

```

1.25 show ospf3 database link

```
show ospf3 database [instance-id] [area-id / ip-addr] link [all
[router-id] | link-id [router-id | self-originate] | self-originate]
[detail [debug] | debug]
```



1.25.1 Purpose

Displays information about Open Shortest Path First Version 3 (OSPFv3) link link-state advertisements (LSAs).

1.25.2 Command Mode

all modes

1.25.3 Syntax Description

<i>instance-id</i>	Optional. OSPFv3 instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. Area IP address.
all	Optional. Displays all link LSAs.
<i>router-id</i>	Optional. Advertising router ID in the form A.B.C.D .
<i>link-id</i>	Optional. LSA ID in the form A.B.C.D .
self-originate	Optional. Displays self-originated LSAs.
detail	Optional. Provides detailed information.
debug	Optional. Displays debug information.

1.25.4 Default

None

1.25.5 Usage Guidelines

Use the **show ospf3 database link** command to display information about OSPFv3 link LSAs.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.



Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.25.6 Examples

The following example displays output from the **show ospf3 database link** command:

```
[local]Redback>show ospf3 database link

--- OSPFv3 Link State Database for Instance 1/Router ID 2.2.2.2 ---

LinkID      Link Type Link State Advertisements (Area 0.0.0.0) (Interface 0.0.0.2)
0.0.0.2      AdvertisingRtr Sequence # ChkSm Length LSAge
0.0.0.6      2.2.2.2      80000001 d92d 64 614
0.0.0.2      4.4.4.4      80000002 4524 64 1830
0.0.0.2      10.12.209.174 80000001 86f1 64 752

LinkID      Link Type Link State Advertisements (Area 0.0.0.0) (Interface 0.0.0.4)
0.0.0.4      AdvertisingRtr Sequence # ChkSm Length LSAge
0.0.0.4      2.2.2.2      80000001 21ea 64 614
0.0.0.4      3.3.3.3      80000001 b8a2 64 597
0.0.0.4      10.12.209.163 80000001 c516 64 1435
0.0.0.4      10.12.209.174 80000001 cdaf 64 752
```

1.26 show ospf3 database network

show ospf3 database [*instance-id*] [*area-id* / *ip-addr*] **network** [*all* [*router-id*] | *link-id* [*router-id* | *self-originate*] | *self-originate*] [*detail* [*debug*] | *debug*]

1.26.1 Purpose

Displays information about Open Shortest Path First Version 3 (OSPFv3) network link-state advertisements (LSAs).

1.26.2 Command Mode

all modes

1.26.3 Syntax Description

<i>instance-id</i>	Optional. OSPFv3 instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. Area IP address.
<i>all</i>	Optional. Displays all network LSAs.



<i>router-id</i>	Optional. Advertising router ID in the form <i>A.B.C.D</i> .
<i>link-id</i>	Optional. LSA ID in the form <i>A.B.C.D</i> .
self-originate	Optional. Displays self-originated LSAs.
detail	Optional. Provides detailed information.
debug	Optional. Displays debug information.

1.26.4 Default

None

1.26.5 Usage Guidelines

Use the **show ospf3 database network** command to display information about OSPFv3 network LSAs.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.26.6 Examples

The following example displays information specific to network LSAs:



```
[local]Redback>show ospf3 database network
```

```
--- OSPFv3 Link State Database for Instance 1/Router ID 2.2.2.2 ---
```

```
Network Link State Advertisements (Area 0.0.0.0)
```

LinkID	AdvertisingRtr	Sequence #	ChkSm	Length	LSAge
0.0.0.4	2.2.2.2	80000001	6781	32	607
0.0.0.5	4.4.4.4	80000001	6572	32	599
0.0.0.6	4.4.4.4	80000001	29b1	32	624

1.27 show ospf3 database nssa

```
show ospf3 database [instance-id] [area-id / ip-addr] nssa [[all
[router-id] | link-id [router-id | self-originate] | self-originate]
[detail [debug] | debug]
```

1.27.1 Purpose

Displays information about Open Shortest Path First Version 3 (OSPFv3) not-so-stubby-area (NSSA) link-state advertisements (LSAs).

1.27.2 Command Mode

all modes

1.27.3 Syntax Description

<i>instance-id</i>	Optional. OSPFv3 instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. Area IP address.
<i>all</i>	Optional. Displays all NSSA LSAs.
<i>router-id</i>	Optional. Advertising router ID in the form <i>A.B.C.D</i> .



<i>link-id</i>	Optional. LSA ID in the form <i>A.B.C.D</i> .
self-originate	Optional. Displays self-originated LSAs.
detail	Optional. Provides detailed information.
debug	Optional. Displays debug information.

1.27.4 Default

None

1.27.5 Usage Guidelines

Use the **show ospf3 database nssa** command to display information about OSPFv3 NSSA LSAs.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.27.6 Examples

The following example displays general output from the **show ospf3 database nssa** command:

```
[local]Redback>show ospf3 database nssa
```

```
--- OSPFv3 Link State Database for Instance 1/Router ID 3.3.3.3 ---
```

```
NSSA Link State Advertisements (Area 0.0.0.3)
```

LinkID	AdvertisingRtr	Sequence #	ChkSm	Length	LSAge
0.0.0.0	3.3.3.3	80000002	bcd f	44	1126



The following example displays detailed output from the **show ospf3 database nssa** command:

```
[local]Redback>show ospf3 database nssa detail
```

```
--- OSPFv3 Link State Database for Instance 1/Router ID 3.3.3.3 ---
```

```
--- NSSA LSA 0.0.0.0 (Area 0.0.0.3) ---
```

Link State Id	: 0.0.0.0	Advertising Router	: 3.3.3.3
Sequence Number	: 0x80000002	Checksum	: 0xbcdf
Length	: 44		
Prefix Len	: 128	Metric	: 1
Options	: 0x0	Flags	: 0x0
Metric-Type	: TYPE1		
IPV6 Prefix	: ::/128		

1.28 show ospf3 database router

```
show ospf3 database [instance-id] [area-id / ip-addr] router [all
[router-id] | link-id [router-id | self-originate] | self-originate]
[detail [debug] | debug]
```

1.28.1 Purpose

Displays information about Open Shortest Path First Version 3 (OSPFv3) router link-state advertisements (LSAs).

1.28.2 Command Mode

all modes



1.28.3 Syntax Description

<i>instance-id</i>	Optional. OSPFv3 instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. Area IP address.
all	Optional. Displays all router LSAs.
<i>router-id</i>	Optional. Advertising router ID in the form <i>A.B.C.D</i> .
<i>link-id</i>	Optional. LSA ID in the form <i>A.B.C.D</i> .
self-originate	Optional. Displays self-originated LSAs.
detail	Optional. Provides detailed information.
debug	Optional. Displays debug information.

1.28.4 Default

None

1.28.5 Usage Guidelines

Use the **show ospf3 database router** command to display information about OSPFv3 router LSAs.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.28.6 Examples

The following example displays general output from the **show ospf3 database router** command:



```
[local]Redback>show ospf3 database router
```

```
--- OSPFv3 Link State Database for Instance 1/Router ID 2.2.2.2 ---
```

```
Router Link State Advertisements (Area 0.0.0.0)
```

LinkID	AdvertisingRtr	Sequence #	ChkSm	Length	LSAge
0.0.0.0	2.2.2.2	80000006	9b12	56	628
0.0.0.0	3.3.3.3	80000005	7336	56	278
0.0.0.0	4.4.4.4	80000198	bf3b	56	598

The following example displays detailed output from the **show ospf3 database router** command:

```
[local]Redback>show ospf3 database router detail
```

```
--- OSPFv3 Link State Database for Instance 1/Router ID 2.2.2.2 ---
```

```
--- Router LSA 0.0.0.0 (Area 0.0.0.0) ---
```

Link State Id	: 0.0.0.0	Advertising Router	: 2.2.2.2
Sequence Number	: 0x80000006	Checksum	: 0x9b12
Length	: 56	Options	: V6,E,R,DC
RouterBits	:	LinkCount	: 2
Age	: 645		
Link Type	: transit	Interface Id	: 0.0.0.2
Link Metric	: 10	NBR Interface Id	: 0.0.0.6



NBR Router Id : 4.4.4.4

Link Type : transit Interface Id : 0.0.0.4

Link Metric : 1 NBR Interface Id : 0.0.0.4

NBR Router Id : 2.2.2.2

--- Router LSA 0.0.0.0 (Area 0.0.0.0) ---

Link State Id : 0.0.0.0 Advertising Router : 3.3.3.3

Sequence Number : 0x80000005 Checksum : 0x7336

Length : 56 Options : V6,E,R,DC

RouterBits : E LinkCount : 2

Age : 295

Link Type : transit Interface Id : 0.0.0.2

Link Metric : 10 NBR Interface Id : 0.0.0.5

NBR Router Id : 4.4.4.4

Link Type : transit Interface Id : 0.0.0.4

Link Metric : 1 NBR Interface Id : 0.0.0.4

NBR Router Id : 2.2.2.2

--- Router LSA 0.0.0.0 (Area 0.0.0.0) ---



```

Link State Id      : 0.0.0.0          Advertising Router  : 4.4.4.4
Sequence Number    : 0x80000198       Checksum            : 0xbf3b
Length             : 56                Options             : V6,E,R,DC
RouterBits         :                   LinkCount            : 2
Age                : 615

```

```

Link Type          : transit           Interface Id        : 0.0.0.6
Link Metric        : 10                NBR Interface Id    : 0.0.0.6
NBR Router Id     : 4.4.4.4

```

```

Link Type          : transit           Interface Id        : 0.0.0.5
Link Metric        : 10                NBR Interface Id    : 0.0.0.5
NBR Router Id     : 4.4.4.4

```

1.29 show ospf3 debug

show ospf3 debug

1.29.1 Purpose

Displays Open Shortest Path First Version 3 (OSPFv3) debug information.

1.29.2 Command Mode

all modes

1.29.3 Syntax Description

This command has no keywords or arguments.



1.29.4 Default

None

1.29.5 Usage Guidelines

Use the `show ospf3 debug` command to display OSPFv3 debug information.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.29.6 Examples

The following example displays output from the `show ospf3 debug` command:

```
[local]Redback>show ospf3 debug
```

```
--- OSPFv3 Debug Types/Filters ---
```

Type	Filter
LSDB	
Neighbor	
Policy	

1.30 show ospf3 global

```
show ospf3 global
```




1.30.1 Purpose

Displays summary information for Open Shortest Path First Version 3 (OSPFv3) global settings.

1.30.2 Command Mode

EXEC

1.30.3 Syntax Description

This command has no keywords or arguments

1.30.4 Default

None

1.30.5 Usage Guidelines

Use the `show ospf3 global` command to display summary information for OSPFv3 global settings.

1.30.6 Examples

The following example shows how to display summary information for OSPFv3 global settings:

```
[local]Redback#show ospf3 global
```

```
--- OSPFv3 Global Information ---
```

Instance Count	: 5	Equal-Cost Paths	: 8
Virtual Link Count	: 2	Sham Link Count	: 0
Neighbors Exchanging	: 0	Exchanging Nbr Max	: 300
Restarted	: No	Restart reason	: Unknown
High Res Timers	: Yes	Receive Cfg EOF	: Yes
Shared Mem. Cleanup	: No	Backup XCRP	: No
Drop Non-Link-Local	: No	Config Drop Non-L-L	: Yes
Schedule Delay usecs	: 1000		

```
[local]Redback#
```

1.31 show ospf3 interface

```
show ospf3 interface [if-name] [detail]
```



1.31.1 Purpose

Displays Open Shortest Path First Version 3 (OSPFv3) interface information.

1.31.2 Command Mode

all modes

1.31.3 Syntax Description

<i>if-name</i>	Optional. Name of a particular interface.
<i>detail</i>	Optional. Displays detailed information.

1.31.4 Default

Displays summary information about all configured OSPFv3 interfaces in the context.

1.31.5 Usage Guidelines

Use the `show ospf3 interface` command to display OSPFv3 interface information.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.31.6 Examples

The following example displays output from the `show ospf3 interface` command:



```
[local]Redback>show ospf3 interface
```

```
--- OSPFv3 Interfaces for Instance 1/Router ID 2.2.2.2 ---
```

Name	NetworkType	Cost	Priority	State	Area
lo	loopback	1	N/A	Loopback	0.0.0.0
to_mer	broadcast	10	1	BDR	0.0.0.0
to_ven	broadcast	1	1	DR	0.0.0.0

1.32 show ospf3 intra-rib

```
show ospf3 intra-rib instance-id {area-id | ip-addr} [detail]
```

1.32.1 Purpose

Displays Open Shortest Path First Version 3 (OSPFv3) intra-Routing Information Base (RIB) information.

1.32.2 Command Mode

all modes

1.32.3 Syntax Description

<i>instance-id</i>	OSPFv3 instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Area IP address in the form A.B.C.D .
<i>detail</i>	Optional. Displays detailed information.

1.32.4 Default

Displays summary information about all configured OSPFv3 intra-RIB information.



1.32.5 Usage Guidelines

Use the `show ospf3 intra-rib` command to display OSPFv3 intra-RIB information.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.32.6 Examples

The following example displays output from the `show ospf3 intra-rib` command:

```
[local]Redback>show ospf3 intra-rib 1 0
-- Intra Area 0.0.0.0 entries for Instance 1/Router ID 2.2.2.2 --
Destination      Cost  LS-Type  LSDB Id      Spf  NextHop
2.2.2.2          0     Router   0.0.0.0       0    ::
3.3.3.3          1     Router   0.0.0.0       5    fe80::230:88ff:fe00:3294
4.4.4.4         10     Router   0.0.0.0       5    fe80::2b0:64ff:fe2c:523
2.2.2.2          1     Network  0.0.0.4       5    to_ven
4.4.4.4         11     Network  0.0.0.5       5    fe80::230:88ff:fe00:3294
4.4.4.4         10     Network  0.0.0.6       5    to_mer
```

1.33 show ospf3 malform

`show ospf3 malform`

1.33.1 Purpose

Displays Open Shortest Path First Version 3 (OSPFv3) malform log information.

1.33.2 Command Mode

all modes

1.33.3 Syntax Description

This command has no keywords or arguments.



1.33.4 Default

None

1.33.5 Usage Guidelines

Use the **show ospf3 malform** command to display OSPFv3 malform log information.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.33.6 Examples

The following example displays output from the **show ospf3 malform** command:

```
[local]Redback>show ospf3 malform
```

```
OSPF3 malform messages (3 total entries):
Feb 16 10:03:47 Malformed msg Type: DD (nbr fe80::2b0:64ff:fe2c:523, context 0x40080001, 28 bytes, repeated 0
0302 001c 0404 0404 0000 0000 e082 0000 0000 0013 05dc 0007 0000 0bab
Feb 16 10:03:52 Malformed msg Type: LSR (nbr fe80::230:88ff:fe00:3294, context 0x40080001, 40 bytes, repeated
0303 0028 0a0c d1a3 0000 0000 562d 0000 0003 2009 0000 0004 0a0c d1a3 8000 2002 0000 0004 0a0c d1a3
Feb 16 10:03:52 Malformed msg Type: DD (nbr fe80::2b0:64ff:fe2c:523, context 0x40080001, 28 bytes, repeated 0
0302 001c 0404 0404 0000 0000 e082 0000 0000 0013 05dc 0007 0000 0bab
```

1.34 show ospf3 neighbor

```
show ospf3 neighbor [neighbor-id | interface [ip-addr | if-name]]
[detail]
```

1.34.1 Purpose

Displays Open Shortest Path First Version 3 (OSPFv3) neighbor information.

1.34.2 Command Mode

all modes



1.34.3 Syntax Description

<code>neighbor-id</code>	Optional. ID of the neighbor for which information is displayed.
<code>interface</code>	Optional. Displays information for the specified neighbor interface.
<code>ip-addr</code>	Optional. IP address of the interface.
<code>if-name</code>	Optional. Interface name.
<code>detail</code>	Optional. Displays detailed information.

1.34.4 Default

Displays summary information for all OSPFv3 neighbors.

1.34.5 Usage Guidelines

Use the `show ospf3 neighbor` command to display OSPFv3 neighbor information.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (`|`) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.34.6 Examples

The following example displays output from the `show ospf3 neighbor` command:



```
[local]Redback>show ospf3 neighbor
```

```
--- OSPFv3 Neighbors for Instance 1/Router ID 2.2.2.2 ---
```

NeighborID	Pri	State	DR-State	InterfaceName	TimeLeft
4.4.4.4	1	Full	DR	to_mer	35
3.3.3.3	1	Full	BDR	to_ven	40

1.35 show ospf3 route

```
show ospf3 route [instance-id] [ipv6-addr [/prefix-length] |
external | inter-area | intra-area | redistributed | summary |
vpn] [detail]
```

1.35.1 Purpose

Displays Open Shortest Path First Version 3 (OSPFv3) route information.

1.35.2 Command Mode

all modes

1.35.3 Syntax Description

<i>instance-id</i>	Optional. OSPFv3 instance ID. The range of values is 1 to 65,535.
<i>ipv6-addr</i>	Optional. IP address in the form A:B:C:D:E:F:G .
<i>prefix-length</i>	Optional. Prefix length. The range of values is 0 to 32.
external	Optional. Displays all external routes.
inter-area	Optional. Displays all interarea routes.
intra-area	Optional. Displays all intra-area routes.
redistributed	Optional. Displays routes redistributed from other routing protocols.
summary	Optional. Displays route summary information.



vpn	Optional. Displays redistributed Virtual Private Network (VPN) routes. This option is only available in a VPN context.
detail	Optional. Displays detailed route information.

1.35.4 Default

Displays basic route information for all instances.

1.35.5 Usage Guidelines

Use the **show ospf3 route** command to display OSPFv3 route information.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.35.6 Examples

The following example displays a summary of all OSPFv3 routes:

```
[local]Redback>show ospf3 route

--- OSPFv3 Routes for Instance 1/Router ID 2.2.2.2 ---

Destination                                Type      Dest-Type/Proto  Cost  #hop
2005::/112                                Intra     Net              1     1
  Nexthop: to_ven
2006::/112                                Intra     Net              10    1
  Nexthop: to_mer
2007::/112                                Intra     Net              11    1
  Nexthop: fe80::230:88ff:fe00:3294
4001::2/128                               Intra     Net              0     1
  Nexthop: lo
4001::3/128                               Intra     Net              2     1
  Nexthop: fe80::230:88ff:fe00:3294
6001::/48                                 EXT T2    Net              0     1
  Nexthop: fe80::230:88ff:fe00:3294
6002::/64                                 EXT T2    Net              0     1
  Nexthop: fe80::230:88ff:fe00:3294
```

1.36 show ospf3 spf

show ospf3 spf [*instance-id*] [*last* | *log* | *scheduling*] [*timestamp*]



1.36.1 Purpose

Displays Open Shortest Path First Version 3 (OSPFv3) Shortest Path First (SPF) calculation statistics.

1.36.2 Command Mode

all modes

1.36.3 Syntax Description

<i>instance-id</i>	OSPFv3 instance ID. Displays SPF information only for the specified instance.
<i>last</i>	Optional. Displays the most recent SPF route calculation.
<i>log</i>	Optional. Displays the SPF calculation timing log.
<i>scheduling</i>	Optional. Displays the SPF route calculation scheduling log.
<i>timestamp</i>	Optional. Displays the SPF timestamp.

1.36.4 Default

Displays SPF information for all configured instances of OSPFv3.

1.36.5 Usage Guidelines

Use the `show ospf3 spf` command to display OSPFv3 SPF calculation statistics.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.36.6 Examples

The following example displays all SPF information for all OSPFv3 instances:



```
[local]Redback>show ospf3 spf
```

```
--- OSPFv3 SPF Route Calculation Timing Log ---
```

Maximum SPF-Phase Timings

When (elapsed)	Instance/Area	Phase	Duration
00:10:19	1/N/A	Init	< 1 ms
00:18:48	1/0.0.0.0	Intra	2 ms
00:18:48	1/0.0.0.0	Inter	1 ms
00:10:19	1/N/A	External	1 ms
00:16:25	1/N/A	Post	1 ms

Most Recent SPF-Phase Timings

When (elapsed)	Instance/Area	Phase	Duration
00:10:19	1/N/A	Init	< 1 ms
00:10:19	1/0.0.0.0	Intra	< 1 ms
00:10:19	1/0.0.0.0	Inter	< 1 ms
00:10:19	1/N/A	External	1 ms
00:10:19	1/N/A	Post	< 1 ms
00:16:10	1/N/A	Init	< 1 ms
00:16:10	1/0.0.0.0	Intra	1 ms
00:16:10	1/0.0.0.0	Inter	< 1 ms
00:16:10	1/N/A	External	< 1 ms
00:16:10	1/N/A	Post	< 1 ms
00:16:25	1/N/A	Init	< 1 ms



00:16:25	1/0.0.0.0	Intra	< 1 ms
00:16:25	1/0.0.0.0	Inter	< 1 ms
00:16:25	1/N/A	External	< 1 ms
00:16:25	1/N/A	Post	1 ms
00:16:37	1/N/A	Init	< 1 ms
00:16:37	1/0.0.0.0	Intra	< 1 ms
00:16:37	1/0.0.0.0	Inter	< 1 ms
00:16:37	1/N/A	External	< 1 ms
00:16:37	1/N/A	Post	1 ms
00:18:48	1/N/A	Init	< 1 ms
00:18:48	1/0.0.0.0	Intra	2 ms
00:18:48	1/0.0.0.0	Inter	1 ms
00:18:48	1/N/A	External	< 1 ms
00:18:48	1/N/A	Post	1 ms

1.37 show ospf3 statistics

```
show ospf3 statistics [instance-id] [interface if-name] [detail]
[neighbor ip-addr | interface if-name] [packet-io] [scheduler
[detail]]
```

1.37.1 Purpose

Displays Open Shortest Path First Version 3 (OSPFv3) statistics.

1.37.2 Command Mode

all modes



1.37.3 Syntax Description

<code>instance-id</code>	Optional. Instance ID. The range of values is 1 to 65,535.
<code>interface if-name</code>	Optional. Interface name. Displays OSPFv3 statistics for the specified interface. When used with neighbor keyword, displays OSPFv3 statistics for all neighbors on the specified interface.
<code>detail</code>	Optional. Displays detailed statistics.
<code>neighbor</code>	Optional. Displays neighbor statistics.
<code>ip-addr</code>	Optional. IP address of the neighbor interface for which OSPFv3 statistics are displayed.
<code>packet-io</code>	Optional. Displays packet I/O statistics.
<code>scheduler</code>	Optional. Displays scheduler statistics.

1.37.4 Default

None

1.37.5 Usage Guidelines

Use the `show ospf3 statistics` command to display OSPFv3 statistics.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.37.6 Examples

The following example displays statistics for all configured OSPFv3 interfaces and neighbors:



```
[local]Redback>show ospf3 statistics
```

```
--- OSPFv3 Statistics for Instance 1 ---
```

Max flood queue length	: 2	Interval	: 00:19:34
LSAs received	: 95	LSAs sent	: 104
LSAs changes received	: 58	LSA Retransmissions	: 6
Packet Retransmissions	: 3	RIB initializations	: 1
Routes downloaded	: 14	Routes deleted	: 1
Download Errors	: 0	RIB IPC messages	: 5
Download SPF Delays	: 0	SPF Download Delays	: 0
DC Indicate originated	: 0	DC Indicate purged	: 0
DC DoNotAge purged	: 0		

	Hello	DD	LSR	LSU	ACK
Sent	241	21	8	42	23
Recv	239	17	7	41	19

1.38 show ospf3 summary-address

```
show ospf3 summary-address [instance-id]
```

1.38.1 Purpose

Displays Open Shortest Path First Version 3 (OSPFv3) summary address information.

1.38.2 Command Mode

all modes



1.38.3 Syntax Description

<code>instance-id</code>	Optional. OSPFv3 instance ID. The range of values is 1 to 65,535.
--------------------------	---

1.38.4 Default

None

1.38.5 Usage Guidelines

Use the `show ospf3 summary-address` command to display OSPFv3 summary address information.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.38.6 Examples

The following example displays OSPFv3 summary address information:

```
[local]Redback>show ospf3 summary-address
```

```
--- OSPFv3 Summaries for Instance 1/Router ID 3.3.3.3 ---
```

Prefix	Length	Tag	Type	Status	Metric
7000::	110	0x0	advertise	inactive	

1.39 show ospf area

```
show ospf area [instance-id] [area-id [ip-addr]] [brief]
```



1.39.1 Purpose

Displays information about Open Shortest Path First (OSPF) areas.

1.39.2 Command Mode

all modes

1.39.3 Syntax Description

<i>instance-id</i>	Optional. Instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. IP address.
<i>brief</i>	Optional. Provides a summary of information.

1.39.4 Default

Displays summary information for all OSPF areas.

1.39.5 Usage Guidelines

Use the **show ospf area** command to display information about OSPF areas.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.39.6 Examples

The following example displays output from the **show ospf area** command:

```
[local]Redback>show ospf area
```



```
--- OSPF Area 0.0.0.0 Instance 1/Router ID 193.10.25.7 ---
```

```
Area Type      : Transit      Interface Count: 2
SPF Count      : 12           Virtual Nbr     : 0
LSA Count      : 15           LSA Checksum   : 0x095e76
ABR Count      : 2            ASBR Count     : 1
Interface List:
193.4.5.2      193.10.25.7
```

```
--- OSPF Area 0.0.0.1 Instance 1/Router ID 193.10.25.7 ---
```

```
Area Type      : Transit      Interface Count: 2
SPF Count      : 12           Virtual Nbr     : 0
LSA Count      : 16           LSA Checksum   : 0x083b1d
ABR Count      : 2            ASBR Count     : 1
Interface List:
10.1.1.1       10.3.1.1
```

The following example displays output from the **show ospf area 0.0.0.1** command. The area type for area 0.0.0.1 is transit. The OSPF-enabled interface IP addresses are 10.1.1.1 and 10.3.1.1, and the number of Shortest Path First (SPF) calculations performed is 12:

```
[local]Redback>show ospf area 0.0.0.1
```




```
--- OSPF Area 0.0.0.0 Instance 1/Router ID 193.10.25.7 ---
```

```
Area Type      : Regular      Interface Count: 1
LSA Count      : 1            LSA Checksum   : 0x0a40d
ABR Count      : 0            ASBR Count     : 0
Adjacent Nbrs  : 0            Up Interfaces   : 1
```

Interface List:

```
193.4.5.2
```

The following example displays output from the **show ospf area brief** command:

```
[local]Redback>show ospf area brief
```

```
--- OSPF Areas for Instance 1/Router ID 193.10.25.7 ---
```

Area	Type	Intf-Count	LSA-Count	LSA cksum
0.0.0.0	Regular	1	3	0x00026314
0.0.0.1	Regular	2	2	0x00007d78

1.40 show ospf border-routers

```
show ospf border-routers [instance-id] [abr | all | asbr] [detail]
```

1.40.1 Purpose

Displays routes to area border routers (ABRs), autonomous system boundary routers (ASBRs), and other Open Shortest Path First (OSPF) routers.



1.40.2 Command Mode

all modes

1.40.3 Syntax Description

<i>instance-id</i>	Optional. Instance ID. The range of values is 1 to 65,535.
abr	Optional. Lists information about ABRs.
all	Optional. Lists information about ABRs, ASBRs, and other OSPF routers.
asbr	Optional. Lists information about ASBRs.
detail	Optional. Displays detailed information.

1.40.4 Default

None

1.40.5 Usage Guidelines

Use the **show ospf border-routers** command to display routes to ABRs, ASBRs, and other OSPF routers.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.40.6 Examples

The following example indicates that there is a route to an ABR at IP address 33.33.33.33. The next-hop IP address is 193.4.4.1 and the route cost is 11:

```
[local]Redback>show ospf border-routers abr
```



--- Border Routers for OSPF Instance 1/Router ID 193.10.25.7 ---

Destination	Next Hop(s)	Cost	Type	Route-Type	Area
33.33.33.33	193.4.4.1	11	ABR	Intra	0.0.0.0
33.33.33.33	10.3.2.2	1	ABR	Intra	0.0.0.1

The following example indicates that there is a route to an ASBR at IP address 22.22.22.22. The next-hop IP address is 10.1.2.2 and the route cost is 1:

```
[local]Redback>show ospf border-router asbr
```

--- Border Routers for OSPF Instance 1/Router ID 193.10.25.7 ---

Destination	Next Hop(s)	Cost	Type	Route-Type	Area
19.4.123.89	193.4.4.1	1	ASBR	Intra	0.0.0.0
22.22.22.22	10.1.2.2	1	ASBR	Intra	0.0.0.1

The following example provides detailed information about all ABRs, ASBRs, and other routers:

```
[local]Redback>show ospf border-routers detail
```

--- Border Routers for OSPF Instance 1/Router ID 193.10.25.7 ---

Destination	: 19.4.123.89	Type	: Intra
Dest-type	: ASBR	Cost	: 1
Area	: 0.0.0.0	Back Link Data	: 193.4.4.1
LSDB Type	: Rtr	LSDB ID	: 19.4.123.89
LSDB Adv Router:	19.4.123.89	Next Hop Count	: 1
SPF Count	: 12		



Next Hops : 193.4.4.1

Route Flags : changed

Destination : 33.33.33.33

Type : Intra

Dest-type : ABR

Cost : 11

Area : 0.0.0.0

Back Link Data : 20.1.1.1

LSDB Type : Rtr

LSDB ID : 33.33.33.33

LSDB Adv Router: 33.33.33.33

Next Hop Count : 1

SPF Count : 12

Next Hops : 193.4.4.1

Route Flags : changed

Destination : 22.22.22.22

Type : Intra

Dest-type : ASBR

Cost : 1

Area : 0.0.0.1

Back Link Data : 10.1.2.2

LSDB Type : Rtr

LSDB ID : 22.22.22.22

LSDB Adv Router: 22.22.22.22

Next Hop Count : 1

SPF Count : 12

Next Hops : 10.1.2.2

Route Flags : changed

Destination : 33.33.33.33

Type : Intra

Dest-type : ABR

Cost : 1

Area : 0.0.0.1

Back Link Data : 10.3.2.2

LSDB Type : Rtr

LSDB ID : 33.33.33.33

LSDB Adv Router: 33.33.33.33

Next Hop Count : 1



SPF Count : 12
Next Hops : 10.3.2.2
Route Flags : changed

1.41 show ospf database

`show ospf database [instance-id] [area-id / ip-addr]`

1.41.1 Purpose

Displays information stored in the Open Shortest Path First (OSPF) link-state database (LSDB).

1.41.2 Command Mode

all modes

1.41.3 Syntax Description

<i>instance-id</i>	Optional. OSPF instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. Area IP address.

1.41.4 Default

None

1.41.5 Usage Guidelines

Use the `show ospf database` command to display information stored in the OSPF LSDB.



Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context** *ctx-name* construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context** *ctx-name* construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.41.6 Examples

The following example provides information about link-state advertisement (LSA) type, link ID, advertising router IP address, link-state age, checksums, and sequence number:

```
[local]Redback>show ospf database
```

```
--- OSPF Link State Database for Instance 1/Router ID 193.10.25.7 ---
```

Router Link State Advertisements (Area 0.0.0.0)

LinkID	AdvertisingRtr	Sequence #	ChkSm	Option	Length	LSAge
19.4.123.89	19.4.123.89	80000fe5	a3dc	E,DC	60	146
33.33.33.33	33.33.33.33	80000006	a66e	E	36	165
111.11.11.11	111.11.11.11	80000042	83b7	E	60	603
193.10.25.7	193.10.25.7	80000006	ffe0	E	48	145

Network Link State Advertisements (Area 0.0.0.0)

LinkID	AdvertisingRtr	Sequence #	ChkSm	Option	Length	LSAge
20.1.1.2	19.4.123.89	80000001	1ea7	E,DC	32	164
193.4.4.1	19.4.123.89	80000001	d9e	E,DC	32	146



Summary Network Link State Advertisements (Area 0.0.0.0)

LinkID	AdvertisingRtr	Sequence #	ChkSm	Option	Length	LSAge
10.1.0.0	33.33.33.33	80000001	fbcb	E	28	126
10.1.0.0	111.11.11.11	8000002a	c1d5	E	28	453
10.1.0.0	193.10.25.7	80000001	ec78	E	28	184
10.2.0.0	33.33.33.33	80000001	f8d2	E	28	176
10.2.0.0	193.10.25.7	80000001	ea78	E	28	137
10.3.0.0	33.33.33.33	80000001	ecdd	E	28	176
10.3.0.0	193.10.25.7	80000001	d48e	E	28	184

Summary AS Border Router Link State Advertisements (Area 0.0.0.0)

LinkID	AdvertisingRtr	Sequence #	ChkSm	Option	Length	LSAge
22.22.22.22	33.33.33.33	80000002	8bf1	E	28	99
22.22.22.22	193.10.25.7	80000001	75a1	E	28	137

Router Link State Advertisements (Area 0.0.0.1)

LinkID	AdvertisingRtr	Sequence #	ChkSm	Option	Length	LSAge
22.22.22.22	22.22.22.22	8000000c	3b10	E	48	102
33.33.33.33	33.33.33.33	8000000c	4ca1	E	48	101
193.10.25.7	193.10.25.7	80000008	111a	E	48	130

Network Link State Advertisements (Area 0.0.0.1)

LinkID	AdvertisingRtr	Sequence #	ChkSm	Option	Length	LSAge
10.1.1.1	193.10.25.7	80000001	f824	E	32	143
10.2.2.2	33.33.33.33	80000001	9157	E	32	101
10.3.1.1	193.10.25.7	80000001	9e5	E	32	130



Summary Network Link State Advertisements (Area 0.0.0.1)

LinkID	AdvertisingRtr	Sequence #	ChkSm	Option	Length	LSAge
19.4.123.89	33.33.33.33	80000001	a941	E	28	158
19.4.123.89	193.10.25.7	80000001	91f1	E	28	139
20.1.1.0	33.33.33.33	80000001	774a	E	28	175
20.1.1.0	193.10.25.7	80000001	c38c	E	28	139
193.4.0.0	33.33.33.33	80000001	f017	E	28	158
193.4.0.0	193.10.25.7	80000001	7436	E	28	184
193.10.25.7	33.33.33.33	80000001	5888	E	28	135
193.10.25.7	193.10.25.7	80000001	1b2	E	28	185

Summary AS Border Router Link State Advertisements (Area 0.0.0.1)

LinkID	AdvertisingRtr	Sequence #	ChkSm	Option	Length	LSAge
19.4.123.89	33.33.33.33	80000001	9159	E	28	158
19.4.123.89	193.10.25.7	80000001	790a	E	28	139

External Link State Advertisements

LinkID	AdvertisingRtr	Sequence #	ChkSm	Option	Length	LSAge
7.0.0.0	19.4.123.89	8000002b	f38f	DC	36	242
8.0.0.0	19.4.123.89	8000002b	e69b	DC	36	242
9.9.9.0	19.4.123.89	8000002b	a65	DC	36	242
25.1.1.0	22.22.22.22	80000001	ee70	E	36	141
26.0.0.0	22.22.22.22	80000001	f867	E	36	141
27.1.0.0	22.22.22.22	80000001	df7e	E	36	141



28.1.1.0	22.22.22.22	80000001	c794	E	36	131
30.0.0.0	22.22.22.22	80000001	ef96	E	36	131

1.42 show ospf database advertising router

```
show ospf database [instance-id] [area-id / ip-addr] advertising
router {router-id | self-originate} [detail]
```

1.42.1 Purpose

Displays information about Open Shortest Path First (OSPF) advertising router link-state advertisements (LSAs).

1.42.2 Command Mode

all modes

1.42.3 Syntax Description

<i>instance-id</i>	Optional. OSPF instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. Area IP address.
<i>router-id</i>	OSPF router ID in the form <i>A.B.C.D</i> .
<i>self-originate</i>	Displays self-originated LSAs.
<i>detail</i>	Optional. Provides detailed information.

1.42.4 Default

None

1.42.5 Usage Guidelines

Use the `show ospf database advertising router` command to display information about OSPF advertising router LSAs.



Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context** *ctx-name* construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context** *ctx-name* construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.42.6 Examples

The following example provides information specific to the advertising router, 192.10.25.7:

```
[local]Redback>show ospf database 1 0.0.0.1 advertising-router 192.10.25.7
--- OSPF Link State Database for Instance 1/Router ID 193.10.25.7 ---

          Router Link State Advertisements (Area 0.0.0.1)
LinkID      AdvertisingRtr  Sequence # ChkSm  Option Length LSAge
22.22.22.22 22.22.22.22 8000000c 3b10  E      48    188
33.33.33.33 33.33.33.33 8000000c 4ca1  E      48    187
193.10.25.7 193.10.25.7 80000008 111a  E      48    216

          Network Link State Advertisements (Area 0.0.0.1)
LinkID      AdvertisingRtr  Sequence # ChkSm  Option Length LSAge
10.1.1.1    193.10.25.7 80000001 f824  E      32    229
10.2.2.2    33.33.33.33 80000001 9157  E      32    187
10.3.1.1    193.10.25.7 80000001 9e5   E      32    216

          Summary Network Link State Advertisements (Area 0.0.0.1)
LinkID      AdvertisingRtr  Sequence # ChkSm  Option Length LSAge
19.4.123.89 33.33.33.33 80000001 a941  E      28    244
19.4.123.89 193.10.25.7 80000001 91f1  E      28    225
20.1.1.0    33.33.33.33 80000001 774a  E      28    261
20.1.1.0    193.10.25.7 80000001 c38c  E      28    225
193.4.0.0   33.33.33.33 80000001 f017  E      28    244
193.4.0.0   193.10.25.7 80000001 7436  E      28    270
193.10.25.7 33.33.33.33 80000001 5888  E      28    221
193.10.25.7 193.10.25.7 80000001 d1b2  E      28    271

          Summary AS Border Router Link State Advertisements (Area 0.0.0.1)
LinkID      AdvertisingRtr  Sequence # ChkSm  Option Length LSAge
19.4.123.89 33.33.33.33 80000001 9159  E      28    244
19.4.123.89 193.10.25.7 80000001 790a  E      28    225
```

1.43 show ospf database area-scope-opaque

```
show ospf database [instance-id] [area-id | ip-addr]
area-scope-opaque [all | link-id] [self-originate] [detail]
```

1.43.1 Purpose

Displays information about Open Shortest Path First (OSPF) opaque Type 10 link-state advertisements (LSAs).



1.43.2 Command Mode

all modes

1.43.3 Syntax Description

<i>instance-id</i>	Optional. OSPF instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. Area IP address.
<i>all</i>	Optional. Displays all opaque Type 10 LSAs.
<i>link-id</i>	Optional. LSA ID in the form <i>A.B.C.D</i> .
<i>self-originate</i>	Optional. Displays self-originated LSAs.
<i>detail</i>	Optional. Provides detailed information.

1.43.4 Default

None

1.43.5 Usage Guidelines

Use the **show ospf database area-scope-opaque** command to display information about OSPF opaque Type 10 LSAs. Opaque Type 10 LSAs are not flooded beyond the borders of their associated area.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.43.6 Examples

The following example displays summary OSPF area scope opaque (Type 10) LSA information:



```
[local]Redback>show ospf database area-scope-opaque
```

```
--- OSPF Link State Database for Instance 1/Router ID 10.1.2.2 ---
```

```
Area scope Opaque Link State Advertisements (Area 0.0.0.1)
```

LinkID	AdvertisingRtr	Sequence #	ChkSm	Option	Length	LSAge
1.0.0.0	10.1.2.2	80000001	4ca5	E,O	28	13
1.0.0.1	10.1.2.2	80000001	5e6e	E,O	116	13

The following example displays detailed OSPF area-scope-opaque (Type 10) LSA information:

```
[local]Redback>show ospf database area-scope-opaque detail
```

```
--- OSPF Link State Database for Instance 1/Router ID 10.1.2.2 ---
```

```
--- Area scope Opaque LSA 1.0.0.0 (Area 0.0.0.1) ---
```

Link State Id	: 1.0.0.0	Advertising Router	: 10.1.2.2
Sequence Number	: 0x80000001	Checksum	: 0x4ca5
Options	: E,O	Length	: 28

TLV Type:	: Router	TLV Length:	: 4
Router ID	: 10.1.2.2		

```
--- Area scope Opaque LSA 1.0.0.1 (Area 0.0.0.1) ---
```

Link State Id	: 1.0.0.1	Advertising Router	: 10.1.2.2
---------------	-----------	--------------------	------------



Sequence Number	: 0x80000001	Checksum	: 0x5e6e
Options	: E,O	Length	: 116
TLV Type:	: Link	TLV Length:	: 92
Sub-TLV Type:	: Link-Type	Sub-TLV Length:	: 1
Link Type	: Multi-access		
Sub-TLV Type:	: Link-ID	Sub-TLV Length:	: 4
IP Address(es)	: 10.1.1.1		
Sub-TLV Type:	: Local-Address	Sub-TLV Length:	: 4
IP Address(es)	: 10.1.2.2		
Sub-TLV Type:	: TE Metric	Sub-TLV Length:	: 4
Metric Value	: 1		
Sub-TLV Type:	: Max Bandwidth	Sub-TLV Length:	: 4
Bytes/Second	: 12500000.000000 / Hex: 0x4b3ebc20		
Sub-TLV Type:	: Max Reserved BW	Sub-TLV Length:	: 4
Bytes/Second	: 12500000.000000 / Hex: 0x4b3ebc20		
Sub-TLV Type:	: Unreserved BW	Sub-TLV Length:	: 32
P[0] Bytes/Second	: 12500000.000000 / Hex: 0x4b3ebc20		



P[1] Bytes/Second : 12500000.000000 / Hex: 0x4b3ebc20
P[2] Bytes/Second : 12500000.000000 / Hex: 0x4b3ebc20
P[3] Bytes/Second : 12500000.000000 / Hex: 0x4b3ebc20
P[4] Bytes/Second : 12500000.000000 / Hex: 0x4b3ebc20
P[5] Bytes/Second : 12500000.000000 / Hex: 0x4b3ebc20
P[6] Bytes/Second : 12500000.000000 / Hex: 0x4b3ebc20

P[7] Bytes/Second : 12500000.000000 / Hex: 0x4b3ebc20

Sub-TLV Type: : Class/Color Sub-TLV Length: : 4
Class/Color : 0x00000000

1.44 show ospf database as-scope-opaque

```
show ospf database [instance-id] [area-id | ip-addr]  
as-scope-opaque [all | link-id] [self-originate] [detail]
```

1.44.1 Purpose

Displays information about Open Shortest Path First (OSPF) opaque Type 11 link-state advertisements (LSAs).

1.44.2 Command Mode

all modes

1.44.3 Syntax Description

<i>instance-id</i>	Optional. OSPF instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. Area IP address.
<i>all</i>	Optional. Displays all opaque Type 11 LSAs.



<code>link-id</code>	Optional. LSA ID in the form <code>A.B.C.D</code> .
<code>self-originate</code>	Optional. Displays self-originated LSAs.
<code>detail</code>	Optional. Provides detailed information.

1.44.4 Default

None

1.44.5 Usage Guidelines

Use the `show ospf database as-scope-opaque` command to display information about OSPF opaque Type 10 LSAs. Opaque Type 11 LSAs are not flooded beyond the borders of their associated autonomous system (AS).

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.44.6 Examples

The following example displays summary OSPF AS scope opaque (Type 11) LSA information:

```
[local]Redback>show ospf database as-scope-opaque
```

```
--- OSPF Link State Database for Instance 1/Router ID 193.10.25.7 ---
```

```
AS scope Opaque Link State Advertisements (Area 0.0.0.1)
```

LinkID	AdvertisingRtr	Sequence #	ChkSm	Option	Length	LSAge
4.0.0.0	193.10.25.7	80000001	c5a	E,DC,O	36	6



The following example displays detailed OSPF AS scope opaque (Type 11) LSA information:

```
[local]Redback>show ospf database as-scope-opaque detail
```

```
--- OSPF Link State Database for Instance 1/Router ID 193.10.25.7 ---
```

```
--- AS scope Opaque LSA 4.0.0.0 (Area 0.0.0.1) ---
```

Link State Id	: 4.0.0.0	Advertising Router	: 193.10.25.7
Sequence Number	: 0x80000001	Checksum	: 0xc5a
Options	: E,DC,O	Length	: 36
TLV Type:	: Capabilities	TLV Length:	: 12
Sub-TLV Type:	: Capability Bits	Sub-TLV Length:	: 4
Graceful Restart	: No	Graceful Helper	: Yes
Stub Router	: No	P2P over LAN	: Yes
MPLS TE	: No	MPLS TE PCS	: No

1.45 show ospf database database-summary

```
show ospf database [instance-id] [area-id / ip-addr]  
database-summary
```

1.45.1 Purpose

Displays a count, grouped by type, of Open Shortest Path First (OSPF) link-state advertisements (LSAs).



1.45.2 Command Mode

all modes

1.45.3 Syntax Description

<i>instance-id</i>	Optional. OSPF instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. Area IP address.

1.45.4 Default

None

1.45.5 Usage Guidelines

Use the `show ospf database database-summary` command to display a count, grouped by type, of OSPF LSAs.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.45.6 Examples

The following example displays a summary of database information:

```
[local]Redback>show ospf database database-summary
```



--- OSPF Database Summary for Instance 1/Router ID 193.10.25.7 ---

Area ID	Router	Network	Sum-Net	Sum-ASBR	NSSA
0.0.0.0	1	0	2	0	0
	Opaque-Area	Opaque-Link	Deleted	MaxAge	
	0	0	0	0	

Area ID	Router	Network	Sum-Net	Sum-ASBR	NSSA
0.0.0.1	1	0	1	0	0
	Opaque-Area	Opaque-Link	Deleted	MaxAge	
	0	0	0	0	

Instance AS External
 0

1.46 show ospf database external

```
show ospf database [instance-id] [area-id / ip-addr] external [all  
| link-id] [router-id | self-originate]] [detail]
```

1.46.1 Purpose

Displays information about Open Shortest Path First (OSPF) Type 5 autonomous system (AS) external link-state advertisements (LSAs).

1.46.2 Command Mode

all modes



1.46.3 Syntax Description

<i>instance-id</i>	Optional. OSPF instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. Area IP address.
all	Optional. Displays all Type 5 AS external LSAs.
<i>link-id</i>	Optional. LSA ID in the form <i>A.B.C.D</i> .
<i>router-id</i>	Optional. OSPF router ID in the form <i>A.B.C.D</i> .
self-originate	Optional. Displays self-originated LSAs.
detail	Optional. Provides detailed information.

1.46.4 Default

None

1.46.5 Usage Guidelines

Use the **show ospf database external** command to display information about OSPF Type 5 AS external LSAs.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.46.6 Examples

The following example displays output from the **show ospf database external** command:

```
[local]Redback>show ospf database external
```



```
--- OSPF Link State Database for Instance 1/Router ID 193.10.25.7 ---
```

External Link State Advertisements

LinkID	AdvertisingRtr	Sequence #	ChkSm	Option	Length	LSAge
7.0.0.0	19.4.123.89	80000001	4865	DC	36	186
8.0.0.0	19.4.123.89	80000001	3b71	DC	36	186
9.9.9.0	19.4.123.89	80000001	5e3b	DC	36	185
10.1.0.0	19.4.123.89	80000001	1594	DC	36	28

1.47 show ospf database interface

```
show ospf database [instance-id] [area-id / ip-addr] interface  
{ip-addr | if-name} [detail]
```

1.47.1 Purpose

Displays information about an Open Shortest Path First (OSPF) interface link-state database (LSDB).

1.47.2 Command Mode

all modes

1.47.3 Syntax Description

<i>instance-id</i>	Optional. OSPF instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. Area IP address.
interface <i>ip-addr</i>	Optional. IP address of the OSPF interface.
interface <i>if-name</i>	Optional. Name of the OSPF interface.
detail	Optional. Provides detailed information.



1.47.4 Default

None

1.47.5 Usage Guidelines

Use the `show ospf database interface` command to display information about an OSPF interface LSDB.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.47.6 Examples

The following example displays summary OSPF interface LSDB information for the interface, `two`:

```
[local]Redback>show ospf database interface two
```

```

Link scope Opaque Link State Advertisements (Interface 10.1.1.1)
LinkID           AdvertisingRtr   Sequence #   ChkSm  Option Length LSAge
3.0.0.0          10.1.2.2           80000001    9d11   E,O      44      4

```

The following example displays detailed OSPF interface LSDB information:

```
[local]Redback>show ospf database interface two detail
```



--- Link scope Opaque LSA 3.0.0.0 (Interface 10.1.1.1) ---

Link State Id	: 3.0.0.0	Advertising Router	: 10.1.2.2
Sequence Number	: 0x80000001	Checksum	: 0x9d11
Options	: E,O	Length	: 44

TLV Type:	: Grace Period	TLV Length:	: 4
Restart Period	: 40		

TLV Type:	: Restart Reason	TLV Length:	: 1
Restart Reason	: Unknown		

TLV Type:	: Interface Addr	TLV Length:	: 4
Interface Address	: 10.1.2.2		

1.48 show ospf database link-scope-opaque

```
show ospf database [instance-id] [area-id / ip-addr]  
link-scope-opaque [all | link-id] [self-originate] [detail]
```

1.48.1 Purpose

Displays information about Open Shortest Path First (OSPF) opaque Type 9 link-state advertisements (LSAs).

1.48.2 Command Mode

all modes



1.48.3 Syntax Description

<i>instance-id</i>	Optional. OSPF instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. Area IP address.
all	Optional. Displays all opaque Type 9 LSAs.
<i>link-id</i>	Optional. LSA ID in the form <i>A.B.C.D</i> .
self-originate	Optional. Displays self-originated LSAs.
detail	Optional. Provides detailed information.

1.48.4 Default

None

1.48.5 Usage Guidelines

Use the **show ospf database link-scope-opaque** command to display information about OSPF opaque Type 9 LSAs. Type 9 Opaque LSAs are not flooded beyond the local network.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.48.6 Examples

The following example displays OSPF area scope opaque (Type 9) LSA information:

```
[local]Redback>show ospf database link-scope-opaque
```



```
--- OSPF Link State Database for Instance 1/Router ID 193.10.25.7 ---
```

```
Link scope Opaque Link State Advertisements (Interface 10.1.1.1)
```

LinkID	AdvertisingRtr	Sequence #	ChkSm	Option	Length	LSAge
3.0.0.0	10.1.2.2	80000001	9d11	E,O	44	3

1.49 show ospf database network

```
show ospf database [instance-id] [area-id / ip-addr] network [all |  
link-id] [router-id | self-originate] [detail]
```

1.49.1 Purpose

Displays information about Open Shortest Path First (OSPF) network link-state advertisements (LSAs).

1.49.2 Command Mode

all modes

1.49.3 Syntax Description

<i>instance-id</i>	Optional. OSPF instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. Area IP address.
<i>all</i>	Optional. Displays all network LSAs.
<i>link-id</i>	Optional. LSA ID in the form <i>A.B.C.D</i> .
<i>router-id</i>	Optional. OSPF router ID in the form <i>A.B.C.D</i> .
<i>self-originate</i>	Optional. Displays self-originated LSAs.
<i>detail</i>	Optional. Provides detailed information.

1.49.4 Default

None



1.49.5 Usage Guidelines

Use the `show ospf database network` command to display information about OSPF network LSAs.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.49.6 Examples

The following example displays information specific to network LSAs:

```
[local]Redback>show ospf database 1 0.0.0.1 network
```

```
--- OSPF Link State Database for Instance 1/Router ID 193.10.25.7 ---
```

```

                Network Link State Advertisements (Area 0.0.0.1)

LinkID          AdvertisingRtr    Sequence #   ChkSm  Option Length  LSAge
-----
10.1.1.1        193.10.25.7      80000001    f824   E        32      189
10.2.2.2        33.33.33.33     80000001    9157   E        32      147
10.3.1.1        193.10.25.7     80000001    9e5    E        32      176

```

The following example provides detailed information specific to network LSAs:

```
[local]Redback>show ospf database 1 0.0.0.1 network detail
```



--- OSPF Link State Database for Instance 1/Router ID 193.10.25.7 ---

--- Network LSA 10.1.1.1 (Area 0.0.0.1) ---

Link State Id	: 10.1.1.1	Advertising Router	: 193.10.25.7
Sequence Number	: 0x80000001	Checksum	: 0xf824
Options	: E	Length	: 32
Network Mask	: 255.255.0.0	LinkCount	: 2
Age	: 197		

Attached Routers : 193.10.25.7, 22.22.22.22

--- Network LSA 10.2.2.2 (Area 0.0.0.1) ---

Link State Id	: 10.2.2.2	Advertising Router	: 33.33.33.33
Sequence Number	: 0x80000001	Checksum	: 0x9157
Options	: E	Length	: 32
Network Mask	: 255.255.0.0	LinkCount	: 2
Age	: 155		

Attached Routers : 33.33.33.33, 22.22.22.22

1.50 show ospf database nssa

```
show ospf database [instance-id] [area-id / ip-addr] nssa [all |  
link-id] [router-id | self-originate]] [detail]
```



1.50.1 Purpose

Displays information about Open Shortest Path First (OSPF) not-so-stubby-area (NSSA) link-state advertisements (LSAs).

1.50.2 Command Mode

all modes

1.50.3 Syntax Description

<i>instance-id</i>	Optional. OSPF instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. Area IP address.
all	Optional. Displays all NSSA LSAs.
<i>link-id</i>	Optional. LSA ID in the form <i>A.B.C.D</i> .
<i>router-id</i>	Optional. OSPF router ID in the form <i>A.B.C.D</i> .
self-originate	Optional. Displays self-originated LSAs.
detail	Optional. Provides detailed information.

1.50.4 Default

None

1.50.5 Usage Guidelines

Use the **show ospf database nssa** command to display information about OSPF NSSA LSAs.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.



1.50.6 Examples

The following example displays output from the `show ospf database nssa` command:

```
[local]Redback>show ospf database nssa
```

```
--- OSPF Link State Database for Instance 1/Router ID 10.200.1.1 ---
```

```
      NSSA Link State Advertisements (Area 0.0.0.12)
```

LinkID	AdvertisingRtr	Sequence #	ChkSm	Option	Length	LSAge
0.0.0.0	10.200.1.1	80000021	1db		36	1154

1.51 show ospf database router

```
show ospf database [instance-id] [area-id / ip-addr] router [all |  
link-id] [router-id | self-originate]] [detail]
```

1.51.1 Purpose

Displays information about Open Shortest Path First (OSPF) router link-state advertisements (LSAs).

1.51.2 Command Mode

all modes

1.51.3 Syntax Description

<i>instance-id</i>	Optional. OSPF instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. Area IP address.
<i>all</i>	Optional. Displays all router LSAs.
<i>link-id</i>	Optional. LSA ID in the form <i>A.B.C.D</i> .
<i>router-id</i>	Optional. OSPF router ID in the form <i>A.B.C.D</i> .



self-originate	Optional. Displays self-originated LSAs.
detail	Optional. Provides detailed information.

1.51.4 Default

None

1.51.5 Usage Guidelines

Use the **show ospf database router** command to display information about OSPF router LSAs.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.51.6 Examples

The following example displays output from the **show ospf database router** command:

```
[local]Redback>show ospf database router
```



```
--- OSPF Link State Database for Instance 1/Router ID 10.200.1.1 ---
```

```
Router Link State Advertisements (Area 0.0.0.0)
```

LinkID	AdvertisingRtr	Sequence #	ChkSm	Option	Length	LSAge
10.200.1.1	10.200.1.1	80000026	c2aa	E,O	36	1252

```
Router Link State Advertisements (Area 0.0.0.11)
```

LinkID	AdvertisingRtr	Sequence #	ChkSm	Option	Length	LSAge
10.200.1.1	10.200.1.1	8000002b	c2a4	E,O	36	1252

```
Router Link State Advertisements (Area 0.0.0.12)
```

LinkID	AdvertisingRtr	Sequence #	ChkSm	Option	Length	LSAge
10.200.1.1	10.200.1.1	80000022	73dd	NP,O	24	1302

1.52 show ospf database summary-asbr

```
show ospf database [instance-id] [area-id / ip-addr] summary-asbr  
[all | link-id] [router-id | self-originate]] [detail]
```

1.52.1 Purpose

Displays information about Open Shortest Path First (OSPF) Type 4 summary autonomous system boundary router (ASBR) link-state advertisements (LSAs).

1.52.2 Command Mode

all modes



1.52.3 Syntax Description

<i>instance-id</i>	Optional. OSPF instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. Area IP address.
all	Optional. Displays all Type 4 summary ASBR LSAs.
<i>link-id</i>	Optional. LSA ID in the form <i>A.B.C.D</i> .
<i>router-id</i>	Optional. OSPF router ID in the form <i>A.B.C.D</i> .
self-originate	Optional. Displays self-originated LSAs.
detail	Optional. Provides detailed information.

1.52.4 Default

None

1.52.5 Usage Guidelines

Use the **show ospf database summary-asbr** command to display information about OSPF Type 4 summary ASBR LSAs.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.52.6 Examples

The following example displays output from the **show ospf database summary-asbr** command:

```
[local]Redback>show ospf database summary-asbr
```



```
--- OSPF Link State Database for Instance 1/Router ID 193.10.25.7 ---
```

```
Summary AS Border Router Link State Advertisements (Area 0.0.0.1)
```

LinkID	AdvertisingRtr	Sequence #	ChkSm	Option	Length	LSAge
19.4.123.89	33.33.33.33	80000001	9159	E	28	27
19.4.123.89	193.10.25.7	80000001	790a	E	28	26

1.53 show ospf database summary-network

```
show ospf database [instance-id] [area-id / ip-addr]  
summary-network [all | link-id] [router-id | self-originate]  
[detail]
```

1.53.1 Purpose

Displays information about Open Shortest Path First (OSPF) Type 3 summary network link-state advertisements (LSAs).

1.53.2 Command Mode

all modes

1.53.3 Syntax Description

<i>instance-id</i>	Optional. OSPF instance ID. The range of values is 1 to 65,535.
<i>area-id</i>	Optional. Area ID. The range of values is 0 to 4,294,967,295.
<i>ip-addr</i>	Optional. Area IP address.
<i>all</i>	Optional. Displays all Type 3 summary network LSAs.
<i>link-id</i>	Optional. LSA ID in the form <i>A.B.C.D</i> .
<i>router-id</i>	Optional. OSPF router ID in the form <i>A.B.C.D</i> .
<i>self-originate</i>	Optional. Displays self-originated LSAs.
<i>detail</i>	Optional. Provides detailed information.



1.53.4 Default

Displays link-state database information for all OSPF instances.

1.53.5 Usage Guidelines

Use the `show ospf database summary-network` command to display information about OSPF Type 3 summary network LSAs.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.53.6 Examples

The following example displays output from the `show ospf database summary-network` command:

```
[local]Redback>show ospf database summary-network
```



--- OSPF Link State Database for Instance 1/Router ID 10.200.1.1 ---

Summary Network Link State Advertisements (Area 0.0.0.0)

LinkID	AdvertisingRtr	Sequence #	ChkSm	Option	Length	LSAge
10.200.1.2	10.200.1.1	80000021	b898	E,O	28	1638

Summary Network Link State Advertisements (Area 0.0.0.11)

LinkID	AdvertisingRtr	Sequence #	ChkSm	Option	Length	LSAge
10.200.1.1	10.200.1.1	80000021	c28f	E,O	28	1638

Summary Network Link State Advertisements (Area 0.0.0.12)

LinkID	AdvertisingRtr	Sequence #	ChkSm	Option	Length	LSAge
10.200.1.1	10.200.1.1	80000021	68e3	NP,O	28	1603
10.200.1.2	10.200.1.1	80000021	5eec	NP,O	28	1603

1.54 show ospf debug

show ospf debug

1.54.1 Purpose

Displays Open Shortest Path First (OSPF) debug settings.

1.54.2 Command Mode

all modes

1.54.3 Syntax Description

This command has no keywords or arguments.



1.54.4 Default

None

1.54.5 Usage Guidelines

Use the `show ospf debug` command to display OSPF debug settings.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.54.6 Examples

The following example displays output from the `show ospf debug` command when the `debug ospf packet`, `debug ospf lsdb`, and `debug ospf rib` commands have been enabled in exec mode:

```
[local]Redback>show ospf debug
```



OSPF:

```
packet hello send debugging is turned on
packet hello rcv debugging is turned on
packet lsu send debugging is turned on
packet lsu rcv debugging is turned on
packet lsr send debugging is turned on
packet lsr rcv debugging is turned on
packet dd send debugging is turned on
packet dd rcv debugging is turned on
packet ack send debugging is turned on
packet ack rcv debugging is turned on
lsdb type1 debugging is turned on
lsdb type2 debugging is turned on
lsdb type3 debugging is turned on
lsdb type4 debugging is turned on
lsdb type5 debugging is turned on
lsdb type7 debugging is turned on
rib debugging is turned on
```

1.55 show ospf global

```
show ospf global
```

1.55.1 Purpose

Displays summary information for Open Shortest Path First (OSPF) global settings.



1.55.2 Command Mode

EXEC

1.55.3 Syntax Description

This command has no keywords or arguments

1.55.4 Default

None

1.55.5 Usage Guidelines

Use the `show ospf global` command to display summary information for OSPF global settings.

1.55.6 Examples

The following example shows how to display summary information for OSPF global settings:

```
[local]Redback#show ospf global

---  OSPF Global Information  ---

Instance Count      : 8
Sham Link Count    : 0
Neighbors Exchanging: 0
Restarted          : No
High Res Timers     : Yes
Shared Mem. Cleanup: No
Equal-Cost Paths    : 8
Schedule Delay usecs: 1000
Exchanging Nbr Max : 300
Restart reason      : Unknown
Receive Cfg EOF     : Yes

[local]Redback#
```

1.56 show ospf interface

`show ospf interface [ip-addr | if-name] [detail]`

1.56.1 Purpose

Displays Open Shortest Path First (OSPF) interface information.



1.56.2 Command Mode

all modes

1.56.3 Syntax Description

<i>ip-addr</i>	Optional. IP address of a particular interface.
<i>if-name</i>	Optional. Name of a particular interface.
<i>detail</i>	Optional. Displays detailed information.

1.56.4 Default

Displays summary information about all configured OSPF interfaces in the context.

1.56.5 Usage Guidelines

Use the `show ospf interface` command to display OSPF interface information. Use this command without any keywords or arguments to display summary information for all configured OSPF interfaces in the context. Use the *ip-addr* or *if-name* argument to display information about a specific OSPF interface. Use the `detail` keyword to display additional information.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.56.6 Examples

The following example displays summary OSPF interface information:

```
[local] Redback>show ospf interface
```



--- OSPF Interfaces for Instance 1/Router ID 193.10.25.7 ---

Addr	Len	NetworkType	Cost	Priority	State	Area
192.168.5.2	16	broadcast	1	1	BDR	0.0.0.0
193.10.25.7	32	loopback	1	N/A	Loopback	0.0.0.0
10.1.1.1	16	broadcast	1	1	DR	0.0.0.1
10.3.1.1	16	broadcast	1	1	DR	0.0.0.1

The following example displays in-depth information specific to the 192.168.5.2 interface:

```
[local]Redback>show ospf interface 192.168.5.2 detail
```

--- OSPF Interface 192.168.5.2 Area 0.0.0.0 Instance 1 ---

Network Type	: broadcast	Mask	: 255.255.255.0
Cost	: 1	Logical Intf	: 2/10
MTU	: 1500	Physical Intf	: ethernet 2/10
State	: BDR	Priority	: 1
Hello Interval	: 0	Dead Interval	: 1
Transmit Delay	: 1	Retransmit Int	: 5
DR Router ID	: 10.10.10.16	DR IP Address	: 76.10.2.1
BDR Router ID	: 10.10.10.15	BDR IP Address	: 76.10.2.2
Ack Queued	: 0	Flood Queued	: 0
Ack Delay	: 2	Authentication	: None
LSA Count	: 0	LSA Checksum	: 0
Demand Circuit	: No	Flood Reduction	: No
Fast Hello	: Enabled	Hello's per sec	: 5 <<< =====



1.57 show ospf mpls lsp

```
show ospf mpls lsp [lsp-cct | detail]
```

1.57.1 Purpose

Displays information for label-switched paths (LSPs) known to the Open Shortest Path First (OSPF) instance.

1.57.2 Command Mode

all modes

1.57.3 Syntax Description

<i>lsp-cct</i>	Optional. Circuit number of a particular LSP.
<i>detail</i>	Optional. Displays detailed information.

1.57.4 Default

Displays information for all label-switched paths (LSPs) known to the Open Shortest Path First (OSPF) instance.

1.57.5 Usage Guidelines

Use the **show ospf mpls lsp** command to display LSPs known to the OSPF instance. LSPs known to the OSPF instance may be used as IGP shortcuts, as described in RFC 3906, or tunnel shortcuts (that is, LDP over RSVP tunnels). Use this command without any keywords or arguments to display all LSPs known to the OSPF instance. Use the *lsp-cct* argument to display information about a specific LSP. Use the **detail** keyword to display additional information.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context *ctx-name*** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context *ctx-name*** construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.57.6 Examples

The following example displays LSPs known to the OSPF instance:

```
[local]Redback>show ospf mpls lsp
```

```

    ---  OSPF Label Switched Paths (LSPs)  ---

LSP Endpoint      Circuit      Context  Shortcuts  Status
14.14.14.14       255/3:511:63:31/0/1/2  40080001  IGP,Tunnel Active

```

1.58 show ospf neighbor

```
show ospf neighbor [neighbor-id | interface [ip-addr | if-name]]
[detail]
```

1.58.1 Purpose

Displays Open Shortest Path First (OSPF) neighbor information.

1.58.2 Command Mode

all modes

1.58.3 Syntax Description

<i>neighbor-id</i>	Optional. ID of the neighbor for which information is displayed.
interface	Optional. Displays information for the specified neighbor interface.
<i>ip-addr</i>	Optional. IP address of the interface.
<i>if-name</i>	Optional. Interface name.
detail	Optional. Displays detailed information.



1.58.4 Default

Displays summary information for all OSPF neighbors.

1.58.5 Usage Guidelines

Use the `show ospf neighbor` command to display OSPF neighbor information.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (|) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.58.6 Examples

The following example provides information on all OSPF neighbors for OSPF instance 1 on the SmartEdge router, 193.10.25.7:

```
[local]Redback>show ospf neighbor
```

```
--- OSPF Neighbors for Instance 1/Router ID 193.10.25.7 ---
```

NeighborID	NeighborAddress	Pri	State	DR-State	IntfAddress	TimeLeft
19.4.123.89	193.4.4.1	1	Full	DR	193.4.5.2	35
22.22.22.22	10.1.2.2	1	Full	BDR	10.1.1.1	37
33.33.33.33	10.3.2.2	1	Full	BDR	10.3.1.1	32

The following example provides detailed information about all OSPF neighbors:



```
[local]Redback>show ospf neighbor detail
```

```
--- OSPF Neighbor 1.1.1.1 Area 0.0.0.0 Instance 1 ---
```

```
Address : 13.13.13.1 Interface Addr : 13.13.13.2
```

```
State : Full DR State : Other
```

```
Cost : 1 DR Priority : 1
```

```
DR Router ID : 0.0.0.0      BDR Router ID : 0.0.0.0
```

```
LSA Request : 0            LSA Retrans : 0
```

```
DB Exchange : 0            Time Till Dead : 38
```

```
Hello Options : E          DD Options : E,O
```

```
LDP/IGP SYNC : In          Progress Metric is : Poisoned
```

The following example provides information specific to the OSPF neighbor with router ID, 10.3.1.1:

```
[local]Redback>show ospf neighbor 10.3.1.1
```

```
--- OSPF Neighbors for Instance 1/Router ID 193.10.25.7 ---
```

NeighborID	NeighborAddress	Pri	State	DR-State	IntfAddress	TimeLeft
33.33.33.33	10.3.2.2	1	Full	BDR	10.3.1.1	36

The following example provides detailed information specific to the OSPF neighbor with router ID, 10.3.1.1:

```
[local]Redback>show ospf neighbor 10.3.1.1 detail
```



```
--- OSPF Neighbor 33.33.33.33 Area 0.0.0.1 Instance 1 ---
```

```
Address          : 10.3.2.2          Interface Addr : 10.3.1.1
State            : Full              DR State       : BDR
Cost             : 1                 DR Priority    : 1
DR Router ID     : 10.3.1.1         BDR Router ID  : 10.3.2.2
LSA Request      : 0                LSA Retrans    : 0
DB Exchange      : 0                Time Till Dead : 34
Hello Options    : E                 DD Options     : E,O
LDP/IGP SYNC     : In               Progress Metric is : Poisoned
```

1.59 show ospf route

```
show ospf route [instance-id] [ip-addr [/prefix-length] | external
| inter-area | intra-area | redistributed | summary | vpn] [detail]
```

1.59.1 Purpose

Displays Open Shortest Path First (OSPF) route information.

1.59.2 Command Mode

all modes

1.59.3 Syntax Description

<i>instance-id</i>	Optional. OSPF instance ID. The range of values is 1 to 65,535.
<i>ip-addr</i>	Optional. IP address in the form <i>A.B.C.D</i> .
<i>prefix-length</i>	Optional. Prefix length. The range of values is 0 to 32.
external	Optional. Displays all external routes.
inter-area	Optional. Displays all interarea routes.
intra-area	Optional. Displays all intra-area routes.



redistributed	Optional. Displays routes redistributed from other routing protocols.
summary	Optional. Displays route summary information.
vpn	Optional. Displays redistributed Virtual Private Network (VPN) routes. This option is only available in a VPN context.
detail	Optional. Displays detailed route information.

1.59.4 Default

Displays basic route information for all instances.

1.59.5 Usage Guidelines

Use the **show ospf route** command to display OSPF route information.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.59.6 Examples

The following example displays a summary of all OSPF routes:

```
[local]Redback>show ospf route
```



--- OSPF Routes for Instance 1/Router ID 12.12.12.12 ---

Destination	Type	Dest-Type/Proto	Cost	Nhops	Nhop
11.1.1.0/24	Intra	Net	2	1	14.1.1.1
11.11.11.11/32	Intra	Net	2	1	14.1.1.1
12.12.12.12/32	Intra	Net	1	1	loop
13.13.13.13/32	Intra	Net	2	1	16.1.1.2
14.1.1.0/24	Intra	Net	1	1	to_dev1
14.14.14.14/32	Intra	Net	3	3	16.1.1.2
			IGP Shortcut:		15.1.1.2
			TNL Shortcut:		15.1.1.2
15.1.1.0/24	Intra	Net	1	1	to_dev3_1
15.15.15.15/32	Intra	Net	4	3	16.1.1.2
			IGP Shortcut:		15.1.1.2
			TNL Shortcut:		15.1.1.2
16.1.1.0/24	Intra	Net	1	1	to_dev3_2
17.1.1.0/24	Intra	Net	2	1	16.1.1.2
18.1.1.0/24	Intra	Net	2	1	16.1.1.2
19.1.1.0/24	Intra	Net	3	3	16.1.1.2
			IGP Shortcut:		15.1.1.2
			TNL Shortcut:		15.1.1.2
20.1.1.0/24	Intra	Net	4	3	16.1.1.2
			IGP Shortcut:		15.1.1.2
			TNL Shortcut:		15.1.1.2

The following example displays detailed information for OSPF routes:

[local]Redback>**show ospf route detail**

--- OSPF Routes for Instance 64001/Router ID 10.100.1.5 ---

Destination	: 10.12.208.0/21	Type	: Intra
Dest-type	: Net	Cost	: 2
Version	: 20	SPF Count	: 43
Area	: 0.0.0.0	Distance	: 110
Back Link Data	: 255.255.248.0		
LSDB Type	:	LSDB ID	: 10.12.215.255
LSDB Adv Router	: 10.100.1.1	Next Hop Count	: 1
Next Hops	: 10.100.11.9		



```

Destination      : 10.100.1.102/32      Type           : Intra
Dest-type        : Net                  Cost           : 2
Version          : 9                   SPF Count      : 43
Area             : 0.0.0.11            Distance       : 110
Back Link Data   : 255.255.255.255
LSDB Type        :                     LSDB ID        : 10.100.1.102
LSDB Adv Router: 10.100.1.102         Next Hop Count : 1
Next Hops        : 10.100.11.50

```

```

Destination      : 10.100.11.0/29      Type           : Intra
Dest-type        : Net                  Cost           : 2
Version          : 19                  SPF Count      : 43
Area             : 0.0.0.0            Distance       : 110
Back Link Data   : 10.100.11.1
LSDB Type        : Net                  LSDB ID        : 10.100.11.2
LSDB Adv Router: 10.100.1.3         Next Hop Count : 1
Next Hops        : 10.100.11.9

```

The following example displays VPN route information for OSPF instance 1:

```
[local]Redback>show ospf route 1 vpn
```



--- OSPF Routes for Instance 1/Router ID 10.1.2.2 ---

Destination	Type	Dest-Type/Proto	Cost	Nhops	Nhop
10.3.0.0/16	REDIST-INT	Redist/OSPF	2	1	10.2.2.2
20.1.1.0/24	REDIST-INT	Redist/OSPF	2	1	10.2.2.2

The following example displays detailed VPN route information for OSPF instance 1:

```
[local]Redback>show ospf route 1 vpn detail
```




--- OSPF Routes for Instance 1/Router ID 10.1.2.2 ---

```

Destination      : 10.3.0.0/16          Type           : REDIST-INT
Source-Proto     : OSPF                 Cost           : 2
Version          : 0                   Redist Level    : Backbone and NSSAs
Next Hop Count   : 1
Next Hops        : 10.2.2.2
VPN Route Type   : Stub-Network         VPN Options     : 0x0
VPN Domain ID    : 0.0.0.0             VPN Area ID     : 0.0.0.1
VPN Router ID    : 10.1.2.2
Route Flags      : redistributed,vpn-info,vpn-inter-area
  
```

```

Destination      : 20.1.1.0/24          Type           : REDIST-INT
Source-Proto     : OSPF                 Cost           : 2
Version          : 0                   Redist Level    : Backbone and NSSAs
Next Hop Count   : 1
Next Hops        : 10.2.2.2
VPN Route Type   : Summary-Network     VPN Options     : 0x0
VPN Domain ID    : 0.0.0.0             VPN Area ID     : 0.0.0.1
VPN Router ID    : 10.1.2.2
Route Flags      : redistributed,vpn-info,vpn-inter-area
  
```

1.60 **show ospf route vpn**

show ospf route vpn [detail]



1.60.1 Purpose

Displays Open Shortest Path First (OSPF) route information in a Virtual Private Network (VPN) context.

1.60.2 Command Mode

all modes

1.60.3 Syntax Description

<code>detail</code>	Optional. Displays detailed route information.
---------------------	--

1.60.4 Default

Displays basic route information for all instances in the specified VPN context.

1.60.5 Usage Guidelines

Use the `show ospf route vpn` command to displays OSPF route information in a VPN context.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (`|`) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.60.6 Examples

The following example displays summary information for all OSPF routes in a VPN context:

```
[local]Redback>show ospf route vpn
```



--- OSPF Routes for Instance 1/Router ID 10.1.2.2 ---

Destination	Type	Dest-Type/Proto	Cost	Nhops	Nhop
10.3.0.0/16	REDIST-INT	Redist/OSPF	2	1	10.2.2.2
20.1.1.0/24	REDIST-INT	Redist/OSPF	2	1	10.2.2.2

The following example displays detailed information for each OSPF route in a VPN context:

```
[local]Redback>show ospf route vpn detail
```



--- OSPF Routes for Instance 1/Router ID 10.1.2.2 ---

Destination	: 10.3.0.0/16	Type	: REDIST-INT
Source-Proto	: OSPF	Cost	: 2
Version	: 0	Redist Level	: Backbone and NSSAs
Next Hop Count	: 1		
Next Hops	: 10.2.2.2		
VPN Route Type	: Stub-Network	VPN Options	: 0x0
VPN Domain ID	: 0.0.0.0	VPN Area ID	: 0.0.0.1
VPN Router ID	: 10.1.2.2		
Route Flags	: redistributed,vpn-info,vpn-inter-area		

Destination	: 20.1.1.0/24	Type	: REDIST-INT
Source-Proto	: OSPF	Cost	: 2
Version	: 0	Redist Level	: Backbone and NSSAs
Next Hop Count	: 1		
Next Hops	: 10.2.2.2		
VPN Route Type	: Summary-Network	VPN Options	: 0x0
VPN Domain ID	: 0.0.0.0	VPN Area ID	: 0.0.0.1
VPN Router ID	: 10.1.2.2		
Route Flags	: redistributed,vpn-info,vpn-inter-area		

1.61 show ospf spf

show ospf spf [**last** | **log** | **scheduling**] [*instance-id*]



1.61.1 Purpose

Displays Open Shortest Path First (OSPF) Shortest Path First (SPF) calculation statistics.

1.61.2 Command Mode

all modes

1.61.3 Syntax Description

<code>last</code>	Optional. Displays the most recent SPF route calculation.
<code>log</code>	Optional. Displays the SPF calculation timing log.
<code>scheduling</code>	Optional. Displays the SPF route calculation scheduling log.
<code>instance-id</code>	Optional. OSPF instance ID. Displays SPF information only for the specified instance.

1.61.4 Default

Displays SPF information for all configured instances of OSPF.

1.61.5 Usage Guidelines

Use the `show ospf spf` command to display SPF calculation statistics.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (`|`) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.61.6 Examples

The following example displays all SPF information for all OSPF instances:

```
[local]Redback>show ospf spf
```



--- OSPF Routes for Instance 64001/Router ID 10.100.1.5 ---

Destination	: 10.12.208.0/21	Type	: Intra
Dest-type	: Net	Cost	: 2
Version	: 20	SPF Count	: 43
Area	: 0.0.0.0	Distance	: 110
Back Link Data : 255.255.248.0			
LSDB Type	:	LSDB ID	: 10.12.215.255
LSDB Adv Router:	10.100.1.1	Next Hop Count	: 1
Next Hops	: 10.100.11.9		
Destination	: 10.100.1.102/32	Type	: Intra
Dest-type	: Net	Cost	: 2
Version	: 9	SPF Count	: 43
Area	: 0.0.0.11	Distance	: 110
Back Link Data : 255.255.255.255			
LSDB Type	:	LSDB ID	: 10.100.1.102
LSDB Adv Router:	10.100.1.102	Next Hop Count	: 1
Next Hops	: 10.100.11.50		
Destination	: 10.100.11.0/29	Type	: Intra
Dest-type	: Net	Cost	: 2
Version	: 19	SPF Count	: 43
Area	: 0.0.0.0	Distance	: 110
Back Link Data : 10.100.11.1			
LSDB Type	: Net	LSDB ID	: 10.100.11.2
LSDB Adv Router:	10.100.1.3	Next Hop Count	: 1



Next Hops : 10.100.11.9

The following example displays the most recent SPF route calculation for OSPF instance 64001:

```
[local]Redback>show ospf spf last 64001
```

--- Most Recent OSPF SPF Route Calculation ---

When (elapsed)	Instance/Area	Phase	Duration
01:47:51	64001/N/A	External	< 10 ms

The following example displays the SPF calculation timing log:

```
[local]Redback>show ospf spf log
```

--- OSPF SPF Route Calculation Timing Log ---

Maximum SPF-Phase Timings

When (elapsed)	Instance/Area	Phase	Duration
1d 02:06:27	64001/0.0.0.11	Intra	20 ms
1d 02:06:27	64001/0.0.0.0	Summary	10 ms
02:01:59	64001/N/A	External	< 10 ms

Most Recent SPF-Phase Timings

When (elapsed)	Instance/Area	Phase	Duration
02:01:59	64001/N/A	External	< 10 ms
02:02:05	64001/N/A	External	< 10 ms
02:02:09	64001/N/A	External	< 10 ms



02:02:09	64001/0.0.0.0	Summary	< 10 ms
02:02:09	64001/0.0.0.0	Intra	< 10 ms
02:02:09	64001/0.0.0.11	Intra	< 10 ms
02:02:10	64001/N/A	External	< 10 ms
02:02:10	64001/0.0.0.0	Summary	< 10 ms
02:02:10	64001/0.0.0.0	Intra	< 10 ms
02:02:10	64001/0.0.0.11	Intra	< 10 ms
02:02:31	64001/N/A	External	< 10 ms
02:02:31	64001/0.0.0.0	Summary	< 10 ms
02:02:31	64001/0.0.0.0	Intra	< 10 ms
02:02:31	64001/0.0.0.11	Intra	< 10 ms
02:02:45	64001/N/A	External	< 10 ms
02:02:55	64001/N/A	External	< 10 ms
02:02:55	64001/0.0.0.0	Summary	< 10 ms

1.62 show ospf statistics

```
show ospf statistics [instance-id] [interface {ip-addr / if-name}
| neighbor [ip-addr | interface {ip-addr / if-name}]]
```

1.62.1 Purpose

Displays Open Shortest Path First (OSPF) statistics.

1.62.2 Command Mode

all modes



1.62.3 Syntax Description

<i>instance-id</i>	Optional. Instance ID. The range of values is 1 to 65,535.
interface <i>ip-addr</i>	Optional. Interface IP address. Displays OSPF statistics for the specified interface. When used with neighbor keyword, displays OSPF statistics for all neighbors on the specified interface.
interface <i>if-name</i>	Optional. Interface name. Displays OSPF statistics for the specified interface. When used with neighbor keyword, displays OSPF statistics for all neighbors on the specified interface.
neighbor	Optional. Displays neighbor statistics.
<i>ip-addr</i>	Optional. IP address of the neighbor interface for which OSPF statistics are displayed.

1.62.4 Default

None

1.62.5 Usage Guidelines

Use the **show ospf statistics** command to display OSPF statistics.

Note: By default, most **show** commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional **context ctx-name** construct, preceding the **show** command, to view output for the specified context without entering that context. For more information about using the **context ctx-name** construct, see the **context** command description.

Note: By appending a space followed by the pipe (|) character at the end of a **show** command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.62.6 Examples

The following example displays statistics for all configured OSPF interfaces and neighbors:



```
[local]Redback>show ospf statistics
--- OSPF Statistics for Instance 64001 ---

Max flood queue length : 2          Interval : 1d 03:10:09
LSAs received          : 1300       LSAs send : 1333
LSAs changes received  : 130
Packet Retransmissions : 14        LSA Retransmissions : 24
Routes downloaded      : 20        Routes deleted : 11
Download Errors        : 0         RIB IPC messages : 17

      Hello  DD      LSR      LSU      ACK
Send  29350  74      5        761     628
Recv  27783  28      10       663     681
```

The following example displays statistics for the `ospf1` interface:

```
[local]Redback>show ospf statistics interface ospf1
--- OSPF Statistics for Interface 10.10.1.1/Instance 64001 ---

Interface Events : 1          Interval : 01:56:35
LSAs received    : 0          LSAs sent : 0
Max ACK queue length: 0      Max flood queue size: 0

      Hello  DD      LSR      LSU      ACK
Send  0      0      0        0        0
Recv  0      0      0        0        0
```

The following example displays OSPF statistics for the neighbor with the 10.100.1.3 router ID:

```
[local]Redback>show ospf statistics neighbor 10.100.1.3
--- OSPF Statistics for Neighbor 10.100.1.3/Interface 10.100.11.27/Instance 64001---

Neighbor events : 19581 Interval : 1d 03:14:30
Packet retransmissions : 1 LSA retransmissions : 1
Adjacency lost count : 0 Adjacency up time : 1d 03:14:28
Max retransmit queue size : 3 Max request queue size : 9
Exchange timeout count : 0 Max DD queue size : 2
```

1.63 show ospf summary-address

show ospf summary-address [*instance-id*]

1.63.1 Purpose

Displays Open Shortest Path First (OSPF) summary address information.

1.63.2 Command Mode

all modes

1.63.3 Syntax Description

<i>instance-id</i>	Optional. OSPF instance ID. The range of values is 1 to 65,535.
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1.63.4 Default

None

1.63.5 Usage Guidelines

Use the `show ospf summary-address` command to display OSPF summary address information.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (`|`) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.63.6 Examples

The following example displays OSPF summary address information:

```
[local]Redback>show ospf summary-address
```

```
--- OSPF Summaries for Instance 1/Router ID 10.100.1.5 ---
```

Prefix	Length	Tag	Type	Status	Metric
10.10.0.0	32	0x0	advertise	inactive	

1.64 show ospf vpn

```
show ospf vpn [instance-id]
```

1.64.1 Purpose

Displays Virtual Private Network (VPN) information and VPN redistributed route counts for an Open Shortest Path First (OSPF) instance in a VPN context.



1.64.2 Command Mode

all modes

1.64.3 Syntax Description

<i>instance-id</i>	Optional. OSPF instance ID. The range of values is 1 to 65535.
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1.64.4 Default

None

1.64.5 Usage Guidelines

Use the `show ospf vpn` command to display VPN information and VPN redistributed route counts for an OSPF instance in a VPN context.

Note: By default, most `show` commands (in any mode) display information for the current context only or, depending on the command syntax, for all contexts. If you are an administrator for the local context, you can insert the optional `context ctx-name` construct, preceding the `show` command, to view output for the specified context without entering that context. For more information about using the `context ctx-name` construct, see the `context` command description.

Note: By appending a space followed by the pipe (`|`) character at the end of a `show` command, you can filter the output using a set of modifier keywords and arguments. For more information, see “*Modifying Output of show Commands*” in *Using the CLI*.

1.64.6 Examples

The following example displays VPN information and VPN redistributed route counts for OSPF instance 1:

```
[local]Redback>show ospf vpn 1
```

```
--- OSPF Instance 1/Router ID 10.1.2.2 ---
```

Domain ID	: 1.1.1.1	Domain Tag	: 0x00000002
Internal Routes	: 2	External Routes	: 0