

set-overload-bit

- Purpose** Use this router subcommand to set the IS-IS overload bit, which makes the router appear overloaded when it needs to avoid transit traffic.
- This feature adds overload functionality to IS-IS to support Transient Black Hole Avoidance as described in RFC 3277. In addition, you can use this command to configure the overload bit at router startup and then clear the bit after a specified number of seconds has passed or when a given BGP process indicates that it has converged.
- Setting the IS-IS overload bit will cause other routers in the domain to avoid using the overloaded router for forwarding packets. Statically setting the bit is also useful when bringing up a new IS-IS router or changing the configuration.
- Setting the bit at startup gives the router a chance to gather all required routing information before announcing that it can forward packets, thus avoiding transient black holes in the IS-IS domain.
- Syntax**
- ```
no set-overload-bit
set-overload-bit always
set-overload-bit on-startup <timeout>
set-overload-bit on-startup [<timeout>] wait-for bgp <as>
```
- Parameters**
- always**—Sets the overload bit unconditionally.
- on-startup** <seconds>—After IS-IS starts up, the number of seconds to wait before clearing the overload bit. If not specified, the default value of 600 (10 minutes) will be used.
- wait-for bgp** <as>—The BGP Autonomous System. After IS-IS starts up, it will set the overload bit until either **bgp** <as> has signalled that it has converged or a <timeout> has occurred. The [<timeout>] value indicates the number of seconds that IS-IS should wait for **bgp** <as> to signal convergence before clearing the overload bit. If [<timeout>] passes with no signal from **bgp** <as>, the overload bit is cleared. The default value for [<timeout>] is 600 (10 minutes).
- Default** `no set-overload-bit`
- Mode** Router subcommand mode
- Domain** Privileged domain
- Examples**
- To wait up to 5 minutes for BGP 26076 to signal convergence before clearing the overload bit:
- ```
Router(config)# router isis alpha
Router(config-router)# set-overload-bit on-startup 300 wait-for bgp 26076
```
- To wait 2 minutes on startup and then clear the overload bit:
- ```
Router(config-router)# set-overload-bit on-startup 120
```
- History** This command first appeared in Release 2.0. In 2.2, the **on-startup** and **wait-for bgp** options were added.
- Reference** RFC 3277 for a description of the use of the BGP form of the command

## spf-interval

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| <b>Purpose</b>    | Use this router subcommand to set the frequency at which SPF calculations are run.                                                                                                                                                                                                                                                                                      |
| <b>Syntax</b>     | <b>spf-interval</b> <init-delay> <max-delay>                                                                                                                                                                                                                                                                                                                            |
| <b>Parameters</b> | <init-delay>—Initial delay in milliseconds. Valid numbers are 500–65,535, inclusive. In times where many SPF calculations are performed within a short amount of time, the interval between consecutive generations is increased until the <max-delay> threshold is reached.<br><br><max-delay>—Maximum delay in milliseconds. Valid numbers are 500–65,535, inclusive. |
| <b>Default</b>    | Default <init-delay> is 500 ms; default <max-delay> is 16,000 ms.                                                                                                                                                                                                                                                                                                       |
| <b>Mode</b>       | Router subcommand mode                                                                                                                                                                                                                                                                                                                                                  |
| <b>Domain</b>     | Privileged domain                                                                                                                                                                                                                                                                                                                                                       |
| <b>Example</b>    | Router(config)# <b>router isis procket</b><br>Router(config-router)# <b>spf-interval 2000 32000</b><br><br>This example shows how to set an initial delay for SPF calculation to 2000 ms and a maximum threshold of 32000 ms.                                                                                                                                           |
| <b>History</b>    | This command first appeared in Release 2.0.                                                                                                                                                                                                                                                                                                                             |

## summary-address

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| <b>Purpose</b> | Use this router subcommand to summarize routes during route redistribution. For example, assume that you have 10.1.0.0/16, 10.2.0.0/16, and 11.1.0.0/16 as routes in the routing table. If you redistribute these routes under IS-IS, you would expect to see IS-IS advertise all three routes.<br><br>The following <b>summary-address</b> command causes IS-IS to only advertise 10.0.0.0/8 and 11.1.0.0/16.<br><br>Router(config)# <b>summary-address 10.0.0.0/8 level-1</b><br><br>The 10.1.0.0/16 and 10.2.0.0/16 routes are not advertised since they are covered by the 10.0.0.0/8 prefix specified in the <b>summary-address</b> command.<br><br>The <b>level-1</b> keyword causes the summarized routes (10.0.0.0/8 and 11.1.0.0/16) to be advertised as Level 1 routes, but all the other routes (10.1.0.0/16, 10.2.0.0/16, and 11.1.0.0/16) to be advertised as Level 2 routes.<br><br>To further avoid routing loops, Procket supports a summary discard route feature. The following two rules are implemented and enabled by default:<br><br>1. When IS-IS generates an advertisement for a summary, it installs a summary discard route for that summary with a next-hop pointing to null0. The admin distance of the summary discard is set to 220, and it has a route type of "discard". |
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