

Chapter 27

Summary of Neighbor Discovery Router Advertisement Configuration Statements

The following sections explain each of the neighbor discovery router advertisement configuration statements. The statements are organized alphabetically.

autonomous

Syntax	(autonomous no-autonomous);
Hierarchy Level	[edit protocols router-advertisement interface <i>interface-name</i> prefix <i>prefix</i>]
Description	Specify whether prefixes in the router advertisement messages are used for stateless address autoconfiguration: autonomous—Use prefixes for address autoconfiguration. no-autonomous—Do not use prefixes for address autoconfiguration.
Default	autonomous
Usage Guidelines	See “Set the Prefix for Stateless Address Autoconfiguration” on page 347.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

current-hop-limit

Syntax	current-hop-limit <i>number</i> ;
Hierarchy Level	[edit protocols router-advertisement interface <i>interface-name</i>]
Description	Default value placed in the hop count field of the IP header for outgoing packets.
Options	<i>number</i> —Hop limit. A value of 0 means the limit is unspecified by this router. Range: 0 through 255 Default: 64
Usage Guidelines	See “Configure the Hop Limit” on page 344.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

• default-lifetime

• **Syntax** default-lifetime *seconds*;

• **Hierarchy Level** [edit protocols router-advertisement interface *interface-name*]

• **Description** Lifetime associated with a default router.

• **Options** *seconds*—Default lifetime, in seconds. A value of 0 means this router is not the default router.

• **Range:** Maximum advertisement interval value through 9000 seconds

• **Default:** Three times the maximum advertisement interval value

• **Usage Guidelines** See “Modify the Default Router Lifetime” on page 345.

• **Required Privilege Level** routing—To view this statement in the configuration.
routing-control—To add this statement to the configuration.

• **See Also** max-advertisement-interval on page 352

interface

Syntax interface *interface-name* {
 current-hop-limit *number*;
 default-lifetime *seconds*;
 (managed-configuration | no-managed-configuration);
 max-advertisement-interval *seconds*;
 min-advertisement-interval *seconds*;
 (other-stateful-configuration | no-other-stateful-configuration);
 prefix *prefix* {
 (autonomous | no-autonomous);
 (on-link | no-on-link);
 preferred-lifetime *seconds*;
 valid-lifetime *seconds*;
 }
 reachable-time *milliseconds*;
 retransmit-timer *milliseconds*;
 traceoptions {
 file *name* <replace> <size *size*> <files *number*> <no-stamp>
 <(world-readable | no-world-readable)>;
 flag *flag* <detail> <disable>;
 }
}

Hierarchy Level [edit protocols router-advertisement]

Description Configure router advertisement properties on an interface. To configure more than one interface, include the interface statement multiple times.

Options *interface-name*—Name of an interface. Specify the full interface name, including the physical and logical address components.

The remaining statements are explained separately.

Usage Guidelines See “Configure Router Advertisement on an Interface” on page 344.

Required Privilege Level routing—To view this statement in the configuration.
 routing-control—To add this statement to the configuration.

managed-configuration

- Syntax** (managed-configuration | no-managed-configuration);
- Hierarchy Level** [edit protocols router-advertisement interface *interface-name*]
- Description** Specify whether to enable the host to use a stateful autoconfiguration protocol for address autoconfiguration, along with any stateless autoconfiguration already configured:
 - managed-configuration—Enable host to use stateful autoconfiguration.
 - no-managed-configuration—Disable host from using stateful autoconfiguration.
- Default** The configured object is disabled unless explicitly enabled.
- Usage Guidelines** See “Enable Stateful Autoconfiguration” on page 345.
- Required Privilege Level** routing—To view this statement in the configuration.
routing-control—To add this statement to the configuration.

max-advertisement-interval

- Syntax** max-advertisement-interval *seconds*;
- Hierarchy Level** [edit protocols router-advertisement interface *interface-name*]
- Description** Maximum interval between each router advertisement message.
- Options** *seconds*—Maximum interval, in seconds.
 - Range:** 4 through 1800 seconds
 - Default:** 600 seconds
- Usage Guidelines** See “Configure the Frequency of Router Advertisements” on page 346.
- Required Privilege Level** routing—To view this statement in the configuration.
routing-control—To add this statement to the configuration.
- See Also** min-advertisement-interval on page 353

min-advertisement-interval

Syntax	min-advertisement-interval <i>seconds</i> ;
Hierarchy Level	[edit protocols router-advertisement interface <i>interface-name</i>]
Description	Minimum interval between each router advertisement message.
Options	<i>seconds</i> —Minimum interval, in seconds. Range: 3 seconds through three-quarter times times the maximum advertisement interval value Default: One-third the maximum advertisement interval value
Usage Guidelines	See “Configure the Frequency of Router Advertisements” on page 346.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
See Also	max-advertisement-interval on page 352

no-autonomous

See autonomous on page 349

no-managed-configuration

See managed-configuration on page 352

no-on-link

See on-link on page 354

no-other-stateful-configuration

See other-stateful-configuration on page 354

on-link

Syntax (on-link | no-on-link);

Hierarchy Level [edit protocols router-advertisement interface *interface-name* prefix *prefix*]

Description Specify whether to enable prefixes to be used for onlink determination:

no-on-link—Disable prefixes from being used for onlink determination.

on-link—Enable prefixes to be used for onlink determination.

Default The configured object is enabled unless explicitly disabled.

Usage Guidelines See “Configure Prefix Information” on page 347.

Required Privilege Level routing—To view this statement in the configuration.
routing-control—To add this statement to the configuration.

other-stateful-configuration

Syntax (other-stateful-configuration | no-other-stateful-configuration);

Hierarchy Level [edit protocols router-advertisement interface *interface-name*]

Description Specify whether to enable autoconfiguration of other nonaddress-related information:

no-other-stateful-configuration—Disable autoconfiguration of other nonaddress-related information.

other-stateful-configuration—Enable autoconfiguration of other nonaddress-related information.

Default The configured object is disabled unless explicitly enabled.

Usage Guidelines See “Enable Stateful Autoconfiguration” on page 345.

Required Privilege Level routing—To view this statement in the configuration.
routing-control—To add this statement to the configuration.

preferred-lifetime

Syntax	preferred-lifetime <i>seconds</i> ;
Hierarchy Level	[edit protocols router-advertisement interface <i>interface-name</i> prefix <i>prefix</i>]
Description	Specify how long the prefix generated by stateless autoconfiguration remains preferred.
Options	<i>seconds</i> —Preferred lifetime, in seconds. If you set the preferred lifetime to 0xffffffff, the lifetime is infinite. The preferred lifetime is never greater than the valid lifetime. Default: 604,800
Usage Guidelines	See “Configure the Preferred Lifetime” on page 348.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
See Also	valid-lifetime on page 359

prefix

Syntax	prefix <i>prefix</i> { (autonomous no-autonomous); (on-link no-on-link); preferred-lifetime <i>seconds</i> ; valid-lifetime <i>seconds</i> ; }
Hierarchy Level	[edit protocols router-advertisement interface <i>interface-name</i>]
Description	Configure prefix properties in router advertisement messages.
Options	<i>prefix</i> —Prefix name. The remaining statements are explained separately.
Usage Guidelines	See “Configure Prefix Information” on page 347.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

reachable-time

- Syntax** reachable-time *milliseconds*;
- Hierarchy Level** [edit protocols router-advertisement interface *interface-name*]
- Description** A length of time that a node considers a neighbor reachable until another reachability confirmation is received from that neighbor.
- Options** *milliseconds*—Reachability time limit, in milliseconds.
Range: 0 through 3,600,000 milliseconds
Default: 0 milliseconds
- Usage Guidelines** See “Modify the Reachable Time Limit” on page 346.
- Required Privilege Level** routing—To view this statement in the configuration.
routing-control—To add this statement to the configuration.

retransmit-timer

- Syntax** retransmit-timer *milliseconds*;
- Hierarchy Level** [edit protocols router-advertisement interface *interface-name*]
- Description** Retransmission frequency of neighbor solicitation messages.
- Options** *milliseconds*—Retransmission frequency, in milliseconds.
Default: 0 milliseconds
- Usage Guidelines** See “Modify the Frequency of Neighbor Solicitation Messages” on page 346.
- Required Privilege Level** routing—To view this statement in the configuration.
routing-control—To add this statement to the configuration.

router-advertisement

- Syntax** router-advertisement {...}
- Hierarchy Level** [edit protocols]
- Description** Enable router advertisement.
- Options** The statements are explained separately.
- Required Privilege Level** routing—To view this statement in the configuration.
routing-control—To add this statement to the configuration.

traceoptions

Syntax	<pre> traceoptions { file <i>name</i> <replace> <size <i>size</i>> <files <i>number</i>> <no-stamp> <(world-readable no-world-readable)>; flag <i>flag</i> <<i>flag-modifier</i>> <disable>; } </pre>
Hierarchy Level	[edit protocols router-advertisement]
Description	Router advertisement protocol-level tracing options.
Default	The default trace options are those inherited from the global traceoptions statement.
Options	<p>disable—(Optional) Disable the tracing operation. One use of this option is to disable a single operation when you have defined a broad group of tracing operations, such as all.</p> <p>file <i>name</i>—Name of the file to receive the output of the tracing operation. Enclose the name in quotation marks. We recommend that you place router advertisement tracing output in the file <code>/var/log/router-advertisement-log</code>.</p> <p>files <i>number</i>—(Optional) Maximum number of trace files. When a trace file named <i>trace-file</i> reaches its maximum size, it is renamed <i>trace-file.0</i>, then <i>trace-file.1</i>, and so on, until the maximum number of trace files is reached. Then, the oldest trace file is overwritten.</p> <p>If you specify a maximum number of files, you must also specify a maximum file size with the <code>size</code> option.</p> <p>Range: 2 through 1000 files Default: 1 trace file only</p> <p>flag <i>flag</i>—Tracing operation to perform. To specify more than one tracing operation, include multiple flag statements. The following are the router advertisement–specific tracing options:</p> <ul style="list-style-type: none"> <code>error</code>—Router advertisement errors <code>expiration</code>—Router advertisement route expiration processing <code>holddown</code>—Router advertisement hold-down processing <code>packets</code>—All router advertisement packets <code>request</code>—Router advertisement information packets such as request, poll, and poll entry packets <code>trigger</code>—Router advertisement triggered updates <code>update</code>—Router advertisement update packets

The following are the global tracing options:

all—All tracing operations

general—A combination of the normal and route trace operations

normal—All normal operations.

Default: If you do not specify this option, only unusual or abnormal operations are traced.

policy—Policy operations and actions

route—Routing table changes

state—State transitions

task—Interface transactions and processing

timer—Timer usage

flag-modifier—(Optional) Modifier for the tracing flag. You can specify one or more of these modifiers:

detail—Provide detailed trace information

receive—Packets being received

receive-detail—Provide detailed trace information for packets being received

send—Packets being transmitted

send-detail—Provide detailed trace information for packets being transmitted

no-stamp—(Optional) Do not place timestamp information at the beginning of each line in the trace file.

Default: If you omit this option, timestamp information is placed at the beginning of each line of the tracing output.

no-world-readable—(Optional) Disallow any user to read the log file.

replace—(Optional) Replace an existing trace file if there is one.

Default: If you do not include this option, tracing output is appended to an existing trace file.

size *size*—(Optional) Maximum size of each trace file, in kilobytes (KB) or megabytes (MB). When a trace file named *trace-file* reaches this size, it is renamed *trace-file.0*. When the *trace-file* again reaches its maximum size, *trace-file.0* is renamed *trace-file.1* and *trace-file* is renamed *trace-file.0*. This renaming scheme continues until the maximum number of trace files is reached. Then, the oldest trace file is overwritten.

If you specify a maximum file size, you must also specify a maximum number of trace files with the *files* option.

Syntax: *xk* to specify KB, *xm* to specify MB, or *xg* to specify GB

Range: 10 KB through the maximum file size supported on your system

Default: 1 MB

world-readable—(Optional) Allow any user to read the log file.

Usage Guidelines See “Trace Router Advertisement Traffic” on page 348.

Required Privilege Level routing—To view this statement in the configuration.
routing-control—To add this statement to the configuration.

valid-lifetime

Syntax valid-lifetime *seconds*;

Hierarchy Level [edit protocols router-advertisement interface *interface-name* prefix *prefix*]

Description How long the prefix remains valid for onlink determination.

Options *seconds*—Valid lifetime, in seconds. If you set the valid lifetime to 0xffffffff, the lifetime is infinite.
Default: 2,592,000

Usage Guidelines See “Configure the Valid Lifetime” on page 348.

Required Privilege Level routing—To view this statement in the configuration.
routing-control—To add this statement to the configuration.

See Also preferred-lifetime on page 355

