

# Chapter 24

## Summary of ICMP Router Discovery Configuration Statements

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

### address

<b>Syntax</b>	<pre>address <i>address</i> {     (advertise   ignore);     (broadcast   multicast);     (priority <i>number</i>   ineligible); }</pre>
<b>Hierarchy Level</b>	[edit protocols router-discovery]
<b>Description</b>	IP addresses to include in router advertisement packets.
<b>Options</b>	<i>address</i> —IP address. To specify more than one address, specify multiple addresses or include multiple address statements.
	The remaining statements are explained separately in this chapter.
<b>Usage Guidelines</b>	See “Configure the Addresses to Include in Router Advertisements” on page 330.
<b>Required Privilege Level</b>	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

## advertise

**Syntax** (advertise | ignore);

**Hierarchy Level** [edit protocols router-discovery address *address*]

**Description** Whether the server should advertise the IP address in its router advertisement packets.

advertise—Advertise the IP address in its router advertisement packets.

ignore—Do not advertise the IP addresses in router advertisement packets.

**Default** advertise

**Usage Guidelines** See “Configure the Addresses to Include in Router Advertisements” on page 330.

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

## broadcast

**Syntax** (broadcast | multicast);

**Hierarchy Level** [edit protocols router-discovery address *address*]

**Description** When the server should include the IP addresses in router advertisement packets. On the same physical interfaces, some addresses might be included only in multicast packets, while others might be included only in broadcast packets.

If you specify broadcast, the server includes the addresses in router advertisement packets only if the packets are broadcast.

**Default** multicast if the router supports IP multicast; broadcast if the router does not support IP multicast.

**Usage Guidelines** See “Configure the Addresses to Include in Router Advertisements” on page 330.

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

**See Also** multicast on page 337

## disable

<b>Syntax</b>	disable;
<b>Hierarchy Level</b>	[edit protocols router-discovery]
<b>Description</b>	Disable router discovery.
<b>Default</b>	The configured object is enabled (operational) unless explicitly disabled.
<b>Required Privilege Level</b>	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

## ignore

**See** advertise on page 334

## ineligible

**See** priority on page 338

## interface

<b>Syntax</b>	interface <i>interface-name</i> { min-advertisement-interval <i>seconds</i> ; max-advertisement-interval <i>seconds</i> ; lifetime <i>seconds</i> ; }
<b>Hierarchy Level</b>	[edit protocols router-discovery]
<b>Description</b>	Physical interfaces on which to configure timers for router advertisement messages.
<b>Options</b>	<i>interface-name</i> —Name of an interface. Specify the full interface name, including the physical and logical address components. To configure all interfaces, specify all. For details about specifying interfaces, see interface naming in the <i>JUNOS Internet Software Configuration Guide: Interfaces and Class of Service</i> .  The remaining statements are explained separately in this chapter.
<b>Usage Guidelines</b>	See “Configure the Frequency of Router Advertisements” on page 331 and “Modify the Router Advertisement Lifetime” on page 331.
<b>Required Privilege Level</b>	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

## lifetime

**Syntax** lifetime *seconds*;

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

**Description** How long the addresses sent by the server in its router advertisement packets are valid. This time must be long enough so that another router advertisement packet is sent before the lifetime has expired. The lifetime value is placed in the advertisement lifetime field of the router advertisement packet.

**Options** *seconds*—Lifetime value. A value of 0 indicates that one or more addresses are no longer valid.  
**Range:** 0, max-advertisement-interval value through 2 hours, 30 minutes (9000 seconds), specified in seconds  
**Default:** 1800 seconds (30 minutes; three times the default maxadvinterval value)

**Usage Guidelines** See “Modify the Router Advertisement Lifetime” on page 331.

**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 336

## max-advertisement-interval

**Syntax** max-advertisement-interval *seconds*;

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

**Description** Maximum time the router waits before sending periodic router advertisement packets out the interface. These packets are broadcast or multicast, depending on how the address corresponding to this physical interface is configured.

**Options** *seconds*—Maximum time between router advertisement packets.  
**Range:** 240 through 1800 seconds (4 through 30 minutes)  
**Default:** 600 seconds (10 minutes)

**Usage Guidelines** See “Configure the Frequency of Router Advertisements” on page 331.

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

**See Also** broadcast on page 334, lifetime on page 336, min-advertisement-interval on page 337, multicast on page 337

## min-advertisement-interval

<b>Syntax</b>	min-advertisement-interval <i>seconds</i> ;
<b>Hierarchy Level</b>	[edit protocols router-discovery interface <i>interface-name</i> ]
<b>Description</b>	Minimum time the router waits before sending router advertisement packets out the interface in response to route solicitation packets it receives from a client. These packets are broadcast or multicast, depending on how the address corresponding to this physical interface is configured.
<b>Options</b>	<i>seconds</i> —Minimum time between router advertisement packets. <b>Range:</b> 3 seconds through the max-advertisement-interval value <b>Default:</b> 400 seconds (0.75 times the default max-advertisement-interval value)
<b>Usage Guidelines</b>	See “Configure the Frequency of Router Advertisements” on page 331.
<b>Required Privilege Level</b>	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
<b>See Also</b>	broadcast on page 334, max-advertisement-interval on page 336, multicast on page 337

## multicast

<b>Syntax</b>	(multicast   broadcast);
<b>Hierarchy Level</b>	[edit protocols router-discovery address <i>address</i> ]
<b>Description</b>	When the server should include the IP addresses in router advertisement packets. On the same physical interfaces, some addresses might be included only in multicast packets, while others might be included only in broadcast packets.  If you specify multicast, the server includes the addresses in router advertisement packets only if the packets are multicast. If the router supports IP multicast, and if the interface supports IP multicast, multicast is the default. Otherwise, the addresses are included in broadcast router advertisement packets. If the router does not support IP multicast, the addresses are not included.
<b>Default</b>	multicast if the router supports IP multicast; broadcast if the router does not support IP multicast.
<b>Usage Guidelines</b>	See “Configure the Addresses to Include in Router Advertisements” on page 330.
<b>Required Privilege Level</b>	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
<b>See Also</b>	broadcast on page 334

## priority

**Syntax** (priority *number* | ineligible);

**Hierarchy Level** [edit protocols router-discovery address *address*]

**Description** Preference of the address to become a default router. This preference is set relative to the preferences of other router addresses on the same subnet.

ineligible—Address can never become the default router.

*priority number*—Preference of the addresses for becoming the default router. A higher value indicates that the address has a greater preference for becoming the default router.

**Range:** 0 through 0x80000000

**Default:** 0 (This address has the least chance of becoming the default router.)

**Usage Guidelines** See “Configure the Addresses to Include in Router Advertisements” on page 330.

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

## router-discovery

**Syntax** router-discovery { ... }

**Hierarchy Level** [edit protocols]

**Description** Enable ICMP router discovery (server mode) on the router.

**Default** Router discovery is disabled on the router.

**Usage Guidelines** See “Minimum Router Discovery Server Configuration” on page 330.

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

## traceoptions

<b>Syntax</b>	<pre> traceoptions {     file <i>name</i> &lt;replace&gt; &lt;size <i>size</i>&gt; &lt;files <i>number</i>&gt; &lt;no-stamp&gt;         &lt;(world-readable   no-world-readable)&gt;;     flag <i>flag</i> &lt;<i>flag-modifier</i>&gt; &lt;disable&gt;; } </pre>
<b>Hierarchy Level</b>	[edit protocols router-discovery]
<b>Description</b>	<p>Configure ICMP protocol-level tracing options.</p> <p>To specify more than one tracing operation, include multiple flag statements.</p>
<b>Default</b>	The default ICMP protocol-level tracing options are those inherited from the routing protocols traceoptions statement included at the [edit routing-options] hierarchy level.
<b>Options</b>	<p><b>disable</b>—(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><b>file <i>name</i></b>—Name of the file to receive the output of the tracing operation. Enclose the name within quotation marks. All files are placed in the directory /var/log. We recommend that you place ICMP tracing output in the file icmp-log.</p> <p><b>files <i>number</i></b>—(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 also must specify a maximum file size with the size option.</p> <p><b>Range:</b> 2 through 1000 files <b>Default:</b> 2 files</p> <p><b>flag <i>flag</i></b>—Tracing operation to perform. To specify more than one tracing operation, include multiple flag statements. These are the ICMP-specific tracing options:</p> <ul style="list-style-type: none"> <li>error—Errored ICMP packets</li> <li>info—ICMP information packets</li> <li>packets—All packets</li> <li>router-discovery—All ICMP packets</li> <li>redirect—ICMP redirect packets</li> </ul> <p>These are the global tracing options:</p> <ul style="list-style-type: none"> <li>all—All tracing operations</li> <li>general—A combination of the normal and route trace operations</li> <li>normal—All normal operations</li> </ul> <p><b>Default:</b> If you do not specify this option, only unusual or abnormal operations are traced.</p>

- 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
  - send—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), megabytes (MB), or gigabytes (GB). 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 also must 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 ICMP Protocol Traffic” on page 331.

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