

Chapter 26

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

Syntax address *address* {
 (advertise | ignore);
 (broadcast | multicast);
 (priority *number* | ineligible);
}

Hierarchy Level [edit protocols router-discovery]

Description IP addresses to include in router advertisement packets.

Options *address*—IP address. To specify more than one address, specify multiple addresses or include multiple address statements.

The remaining statements are explained separately.

Usage Guidelines See “Configure the Addresses to Include in Router Advertisements” on page 282.

Required Privilege Level 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 <i>address</i>]
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 282.
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 <i>address</i>]
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 282.
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 289

disable

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

ignore

See advertise on page 286

ineligible

See priority on page 290

interface

Syntax interface interface-name {
 min-advertisement-interval *seconds*;
 max-advertisement-interval *seconds*;
 lifetime *seconds*;
 }

Hierarchy Level [edit protocols router-discovery]

Description Physical interfaces on which to configure timers for router advertisement messages.

Options *interface-name*—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 *JUNOS Internet Software Configuration Guide: Interfaces and Chassis*.

The remaining statements are explained separately.

Usage Guidelines See “Configure the Frequency of Router Advertisements” on page 283 and “Modify the Router Advertisement Lifetime” on page 283.

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

lifetime

Syntax	lifetime <i>seconds</i> ;
Hierarchy Level	[edit protocols router-discovery interface <i>interface-name</i>]
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	<i>seconds</i> —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 maxadinterval value)
Usage Guidelines	See “Modify the Router Advertisement Lifetime” on page 283.
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 288

max-advertisement-interval

Syntax	max-advertisement-interval <i>seconds</i> ;
Hierarchy Level	[edit protocols router-discovery interface <i>interface-name</i>]
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	<i>seconds</i> —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 283.
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 286, lifetime on page 288, min-advertisement-interval on page 289, multicast on page 289

min-advertisement-interval

Syntax	min-advertisement-interval <i>seconds</i> ;
Hierarchy Level	[edit protocols router-discovery interface <i>interface-name</i>]
Description	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.
Options	<i>seconds</i> —Minimum time between router advertisement packets. Range: 3 seconds through the max-advertisement-interval value Default: 400 seconds (0.75 times the default max-advertisement-interval value)
Usage Guidelines	See “Configure the Frequency of Router Advertisements” on page 283.
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 286, max-advertisement-interval on page 288, multicast on page 289

multicast

Syntax	(multicast broadcast);
Hierarchy Level	[edit protocols router-discovery address <i>address</i>]
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 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.
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 282.
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 286

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 282.

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 282.

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-discovery]
Description	<p>Configure ICMP protocol-level tracing options.</p> <p>To specify more than one tracing operation, include multiple flag statements.</p>
Default	The default ICMP protocol-level tracing options are those inherited from the routing protocols traceoptions statement included at the [edit routing-options] hierarchy level.
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><i>filename</i>—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>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 also must specify a maximum file size with the size option.</p> <p>Range: 2 through 1000 files Default: 2 files</p> <p><i>flag</i>—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"> error—Errored ICMP packets info—ICMP information packets packets—All packets router-discovery—All ICMP packets redirect—ICMP redirect packets <p>These are the global tracing options:</p> <ul style="list-style-type: none"> all—All tracing operations general—A combination of the normal and route trace operations normal—All normal operations <p>Default: 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 283.

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.