

Chapter 35

Summary of Real-Time Performance Monitoring Configuration Statements

The following sections explain each of the Real-Time Performance Monitoring (RPM) statements. The statements are organized alphabetically.

data-fill

Syntax	<code>data-fill data;</code>
Hierarchy Level	<code>[edit services rpm probe owner test test-name]</code>
Description	Specify the contents of the data portion of ICMP probes.
Options	<code>data</code> —A hexadecimal value; for example, 0-9, A -F.
Usage Guidelines	See “Configuring the Probe” on page 474.
Required Privilege Level	<code>system</code> —To view this statement in the configuration. <code>interface-control</code> —To add this statement to the configuration.

data-size

Syntax	<code>data-size size;</code>
Hierarchy Level	<code>[edit services rpm probe owner test test-name]</code>
Description	Specify the size of the data portion of ICMP probes.
Options	<code>data</code> —The size can be from 0 through 65507.
Usage Guidelines	See “Configuring the Probe” on page 474.
Required Privilege Level	<code>system</code> —To view this statement in the configuration. <code>interface-control</code> —To add this statement to the configuration.

destination-port

Syntax	<code>destination-port <i>port</i>;</code>
Hierarchy Level	[edit services rpm probe <i>owner</i> test <i>test-name</i>]
Description	Specify the UDP or TCP port to which a probe is sent. This statement is used only for TCP or UDP probe types.
Options	<i>port</i> —The port number can be 7 or from 49152 to 65535.
Usage Guidelines	See “Configuring the Probe” on page 474.
Required Privilege Level	system—To view this statement in the configuration. interface-control—To add this statement to the configuration.

dscp-code-point

Syntax	<code>dscp-code-point <i>DSCP bits</i>;</code>
Hierarchy Level	[edit services rpm probe <i>owner</i> test <i>test-name</i>]
Description	Specify the value of the DiffServ field within the IP header. The DiffServ code point (DSCP) bits value must be set to a valid six-bit pattern.
Options	<p><i>DSCP bits</i>—A valid six-bit pattern; for example, 001111, or one of the following configured DSCP aliases:</p> <ul style="list-style-type: none"> af11—Default: 001010 af12—Default: 001100 af13—Default: 001110 af21—Default: 010010 af22—Default: 010100 af23 —Default: 010110 af31 —Default: 011010 af32 —Default: 011100 af33 —Default: 011110 af41 —Default: 100010 af42 —Default: 100100 af43 —Default: 100110 be—Default: 000000

cs1—Default: 001000

cs2—Default: 010000

cs3—Default: 011000

cs4—Default: 100000

cs5—Default: 101000

cs6—Default: 110000

cs7—Default: 111000

ef—Default: 101110

nc1—Default: 110000

nc2—Default: 111000

Usage Guidelines See “Configuring the Probe” on page 474.

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

history-size

Syntax history-size *size*;

Hierarchy Level [edit services rpm probe *owner* test *test-name*]

Description Specify the number of stored history entries.

Options *size*—A value from 0 to 255.
Default: 50

Usage Guidelines See “Configuring the Probe” on page 474.

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

probe

Syntax	<code>probe owner;</code>
Hierarchy Level	[edit services rpm]
Description	Specify an owner name. The owner name combined with the test name represent a single RPM configuration instance.
Options	<i>owner</i> —Specify an owner name up to 32 characters in length.
Usage Guidelines	See “Configuring the Probe” on page 474.
Required Privilege Level	system—To view this statement in the configuration. interface-control—To add this statement to the configuration.

probe-count

Syntax	<code>probe-count count;</code>
Hierarchy Level	[edit services rpm probe owner test test-name]
Description	Specify the number of probes within a test.
Options	<i>count</i> —A value from 1 through 15.
Usage Guidelines	See “Configuring the Probe” on page 474.
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.

probe-interval

Syntax	<code>probe-interval interval;</code>
Hierarchy Level	[edit services rpm probe owner test test-name]
Description	Specify the time to wait between sending packets, in seconds.
Options	<i>interval</i> —Number of seconds, from 0 through 255.
Usage Guidelines	See “Configuring the Probe” on page 474.
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.

probe-limit

Syntax	<code>probe-limit <i>limit</i>;</code>
Hierarchy Level	[edit services rpm]
Description	Specify the maximum number of concurrent probes allowed.
Options	<i>limit</i> —A value from 1 through 500. Default: 100.
Usage Guidelines	See “Configuring the Maximum Number of Probes” on page 478.
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.

probe-server

Syntax	<code>probe-server { <i>tcp port</i>; <i>udp port</i>;</code>
Hierarchy Level	[edit services rpm]
Description	Specify the server to act as a receiver for the probes.
Options	<i>tcp port</i> —Port number specified for the TCP server. The port number can be 7 or from 49152 through 65535. <i>udp port</i> —Port number specified for the UDP server. The port number can be 7 or from 49152 through 65535.
Usage Guidelines	See “Configuring the Server” on page 477.
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.

probe-type

Syntax	probe-type <i>type</i> ;
Hierarchy Level	[edit services rpm probe <i>owner</i> test <i>test-name</i>]
Description	Specify the packet and protocol contents of a probe.
Options	<p><i>type</i>—Specify one of the following probe type values:</p> <p>http-get—Sends an HTTP GET request to a target URL.</p> <p>http-metadata-get—Sends an HTTP GET request for metadata to a target URL.</p> <p>icmp-ping—Sends ICMP echo requests to a target address.</p> <p>icmp-ping-timestamp—Sends ICMP timestamp requests to a target address.</p> <p>tcp-ping—Sends TCP packets to a target.</p> <p>udp-ping—Sends UDP packets to a target.</p>
Usage Guidelines	See “Configuring the Probe” on page 474.
Required Privilege Level	<p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p>

routing-instance

Syntax	routing-instance <i>instance-name</i> ;
Hierarchy Level	[edit services rpm probe <i>owner</i> test <i>test-name</i>]
Description	Specify the routing instance used by the probes.
Options	<p><i>instance-name</i>—A routing instance configured at the [edit routing-instances] hierarchy level.</p> <p>Default: Internet routing table inet.0.</p>
Usage Guidelines	See “Configuring the Probe” on page 474.
Required Privilege Level	<p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p>

services

Syntax	services rpm { ... }
Hierarchy Level	[edit]
Description	Define the service rules to be applied to traffic.
Options	rpm—Identifies the RPM set of rules statements.
Usage Guidelines	See “Configuring Real-Time Performance Monitoring Properties” on page 474.
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.

source-address

Syntax	source-address <i>address</i> ;
Hierarchy Level	[edit services rpm probe <i>owner</i> test <i>test-name</i>]
Description	Specify the source IP address used for probes. If the source IP address is not one of the router’s assigned addresses, the packet will use the outgoing interface’s address as its source.
Options	<i>address</i> —Valid IP address.
Usage Guidelines	See “Configuring the Probe” on page 474.
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.

target-url

Syntax	target-url (<i>url</i> <i>address</i>);
Hierarchy Level	[edit services rpm probe <i>owner</i> test <i>test-name</i>]
Description	Specify the destination address used for the probes.
Options	<i>url</i> —For HTTP probe types, specify a fully formed URL that includes http:// in the URL address. <i>address</i> —For all other probe types, specify an IPv4 address for the target host.
Usage Guidelines	See “Configuring the Probe” on page 474.
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.

test

```

Syntax test test-name {
    data-fill data;
    data-size size;
    destination-port port;
    dscp-code-point DSCP bits;
    history-size size;
    probe-count count;
    test-interval frequency;
    probe-interval seconds;
    probe-type type;
    routing-instance instance-name;
    source-address address;
    target-url [url | address];
    test-interval interval;
    thresholds thresholds;
    traps traps;
}

```

Hierarchy Level [edit services rpm probe *owner*]

Description Represents the range of probes over which the standard deviation, average, and jitter are calculated. The test name combined with the owner name represent a single RPM configuration instance.

Options *test-name*—Specify a test name. The name can be up to 32 characters in length.
The remaining statements are explained separately.

Usage Guidelines See “Configuring the Probe” on page 474.

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

test-interval

```

Syntax test-interval frequency;

```

Hierarchy Level [edit services rpm probe *owner* test *test-name*]

Description Specify the time to wait between tests, in seconds.

Options *frequency*—Number of seconds, from 0 through 86400.

Usage Guidelines See “Configuring the Probe” on page 474.

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

thresholds

Syntax	<code>thresholds thresholds;</code>
Hierarchy Level	<code>[edit services rpm probe owner test test-name]</code>
Description	Specify thresholds used for the probes. A system log message is generated when the configured threshold is exceeded. Likewise, an SNMP trap (if configured) is generated when a threshold is exceeded.
Options	<p><i>thresholds</i>—Specify one or more threshold measurements. The following options are supported:</p> <ul style="list-style-type: none"> <i>egress-time</i>—Measures maximum source-to-destination time per probe. <i>ingress-time</i>—Measures maximum destination-to-source time per probe. <i>jitter-egress</i>—Measures maximum source-to-destination jitter per test. <i>jitter-ingress</i>—Measures maximum destination-to- source jitter per test. <i>jitter-rtt</i>—Measures maximum jitter per test, from 0 through 60000000 microseconds. <i>rtt</i>—Measures maximum round-trip time per probe, in microseconds. <i>std-dev-egress</i>—Measures maximum source-to-destination standard deviation per test. <i>std-dev-ingress</i>—Measures maximum destination-to-source standard deviation per test. <i>std-dev-rtt</i>—Measures maximum standard deviation per test, in microseconds. <i>successive-loss</i>—Measures successive probe loss count, indicating probe failure. <i>total-loss</i>—Measures total probe loss count indicating test failure, from 0 through 15.
Usage Guidelines	See “Configuring the Probe” on page 474.
Required Privilege Level	<ul style="list-style-type: none"> <code>interface</code>—To view this statement in the configuration. <code>interface-control</code>—To add this statement to the configuration.

traps

Syntax	<code>traps traps;</code>
Hierarchy Level	[edit services rpm probe <i>owner</i> test <i>test-name</i>]
Description	Set the trap bit to generate traps for probes. Traps are sent if the configured threshold is met or exceeded.
Options	<p><i>traps</i>—Specify one or more traps. The following options are supported:</p> <ul style="list-style-type: none"> <i>egress-jitter-exceeded</i>—Generates traps when the jitter in egress time threshold is met or exceeded. <i>egress-std-dev-exceeded</i>—Generates traps when the egress time standard deviation threshold is met or exceeded. <i>egress-time-exceeded</i>—Generates traps when the maximum egress time threshold is met or exceeded. <i>ingress-jitter-exceeded</i>—Generates traps when the jitter in ingress time threshold is met or exceeded. <i>ingress-std-dev-exceeded</i>—Generates traps when the ingress time standard deviation threshold is met or exceeded. <i>ingress-time-exceeded</i>—Generates traps when the maximum ingress time threshold is met or exceeded. <i>jitter-exceeded</i>—Generates traps when the jitter in round-trip time threshold is met or exceeded. <i>probe-failure</i>—Generates traps for successive probe loss thresholds crossed. <i>rtt-exceeded</i>—Generates traps when the maximum round-trip time threshold is met or exceeded. <i>std-dev-exceeded</i>—Generates traps when the round-trip time standard deviation threshold is met or exceeded. <i>test-completion</i>—Generates traps when a test is completed. <i>test-failure</i>—Generates traps when the total probe loss threshold is met or exceeded.
Usage Guidelines	See “Configuring the Probe” on page 474.
Required Privilege Level	<ul style="list-style-type: none"> <i>interface</i>—To view this statement in the configuration. <i>interface-control</i>—To add this statement to the configuration.