



IP Multicast Tools Commands

Use the commands in this chapter to configure and use IP multicast tools such as Multicast Routing Monitor (MRM), `mrinfo`, `mstat`, and `mtrace`. For task information and examples of IP multicast tools, refer to the “Using IP Multicast Tools” chapter of the *Cisco IOS IP and IP Routing Configuration Guide*.

beacon

To change the frequency, duration, or scope of beacon messages that the Manager sends to Test Senders and Test Receivers during a multicast routing monitor test, use the **beacon** manager configuration command. To restore the default value, use the **no** form of the command.

beacon [*interval seconds*] [*holdtime seconds*] [*ttl hops*]

no beacon [*interval seconds*] [*holdtime seconds*] [*ttl hops*]

Syntax Description

interval <i>seconds</i>	(Optional) Frequency of beacon messages in seconds. The default value is 60 seconds, meaning one beacon message every 60 seconds.
holdtime <i>seconds</i>	(Optional) Length of the test period in seconds. The Test Sender and Test Receiver are respectively sending and receiving test data constantly during the hold time. The default value is 1 day (86400 seconds).
ttl <i>hops</i>	(Optional) Time-to-live (TTL) of the beacon messages. The default value is 32 hops.

Defaults

interval *seconds* is 60.

holdtime *seconds* is 86400 (1 day).

ttl *hops* is 32.

Command Modes

Manager configuration

Command History

Release	Modification
12.0(5)S	This command was introduced.

Usage Guidelines

The beacon message functions like a keepalive message. The Manager multicasts beacon messages to the Test Sender and Test Receiver. Beacon messages include the sender requests and receiver requests to start the test, thus providing redundancy in case the Test Sender or Test Receiver goes down.

You can increase the default **interval** keyword to reduce beacon traffic.

You can decrease the **holdtime** keyword to shorten the test time.

You can change the default number of TTL hops if your network were large and the beacon needed more than 32 hops to get from the Manager to the Test Sender or Test Receiver.

Examples

The following example customizes the Manager to send beacon messages every 30 minutes (1800 seconds), for a test period of 12 hours (43200 seconds), with a TTL of 40 hops:

```
beacon interval 1800 holdtime 43200 ttl 40
```

Related Commands	Command	Description
	manager	Specifies that an interface is the Manager for MRM, and specifies the multicast group address the Test Receiver will listen to.

clear ip mrm status-report

To clear the status report cache buffer, use the **clear ip mrm status-report EXEC** command.

clear ip mrm status-report [*ip-address*]

Syntax Description	<i>ip-address</i>	(Optional) Address of the Test Receiver. Clears only those status reports received from the Test Receiver having this IP address. If no address is specified, all status reports are cleared from the cache buffer.
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Command Modes	EXEC
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Command History	Release	Modification
	12.0(5)S	This command was introduced.

Usage Guidelines You typically need not clear this circular cache buffer.

Examples The following example clears status reports from the Test Receiver at 175.2.3.4:

```
clear ip mrm status-report 175.2.3.4
```

Related Commands	Command	Description
	show ip mrm status-report	Displays MRM status reports of errors in the circular cache buffer.

ip mrm

To configure an interface to operate as a Test Sender or Test Receiver, or both, for Multicast Routing Monitor (MRM), use the **ip mrm** interface configuration command. To remove the interface as a Test Sender or Test Receiver, use the **no** form of the command.

```
ip mrm { test-sender | test-receiver | test-sender-receiver }
```

```
no ip mrm { test-sender | test-receiver | test-sender-receiver }
```

Syntax Description

test-sender	Configures the interface to be a Test Sender.
test-receiver	Configures the interface to be a Test Receiver.
test-sender-receiver	Configures the interface to be both a Test Sender and Test Receiver (for different groups).

Defaults

The interface is neither a Test Sender nor a Test Receiver.

Command Modes

Interface configuration

Command History

Release	Modification
12.0(5)S	This command was introduced.

Usage Guidelines

The Test Sender and Test Receiver can be either a router or a host.

If a router (or host) belongs to more than one test group, it can be a Test Sender for one group and a Test Receiver for the other group. It cannot be the Test Sender and Test Receiver for the same group.

Examples

The following example configures Ethernet interface 0 to be a Test Sender:

```
interface ethernet 0
 ip mrm test-sender
```

Related Commands

Command	Description
receivers	Configures the following: (1) establishes Test Receivers for MRM; (2) specifies which Test Senders the Test Receivers will listen to; (3) specifies which sources the Test Receivers monitor; (4) specifies the packet delay; or (5) changes Test Receiver parameters.
senders	Configures Test Sender parameters used in MRM.

ip mrm accept-manager

To configure a Test Sender or Test Receiver to accept requests only from Managers that pass an access list, use the **ip mrm accept-manager** global configuration command. To remove the restriction, use the **no** form of the command.

```
ip mrm accept-manager {access-list-name | access-list-number} [test-sender | test-receiver]
```

```
no ip mrm accept-manager {access-list-name | access-list-number}
```

Syntax Description

<i>access-list-name</i>	Named IP access list applied to the Managers.
<i>access-list-number</i>	Numbered IP access list applied to the Managers.
test-sender	(Optional) The access list applies only to the Test Sender.
test-receiver	(Optional) The access list applies only to the Test Receiver.

Defaults

If neither **test-sender** nor **test-receiver** is configured, the access list applies to both.

Command Modes

Global configuration

Command History

Release	Modification
12.0(5)S	This command was introduced.

Usage Guidelines

Use this command to control which Managers a Test Sender or Test Receiver must respond to.

Examples

The following example configures the Test Sender to respond only to Managers that pass the access list named supervisor:

```
ip access-list standard supervisor
remark Permit only the Manager from Central Office
 permit 172.18.2.4
ip mrm accept-manager supervisor test-sender
```

Related Commands

Command	Description
ip mrm	Configures an interface to operate as a Test Sender or Test Receiver, or both, for MRM.

ip mrm manager

To identify a Multicast Routing Monitor (MRM) test and enter the mode in which you specify the test parameters, use the **ip mrm manager** global configuration command. To remove the test, use the **no** form of the command.

ip mrm manager *test-name*

no ip mrm manager *test-name*

Syntax Description	<i>test-name</i>	Name of the group of MRM test parameters that follow.
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Defaults	There is no MRM test.
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Command Modes	Global configuration
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Command History	Release	Modification
	12.0(5)S	This command was introduced.

Usage Guidelines	<p>The <i>test-name</i> identifies a test so that you can start, stop, or monitor the test.</p> <p>After you enter this command, the router is in manager configuration mode and you must set the test parameters.</p>
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Examples	<p>The following example identifies an MRM test named test1 and causes the system to enter manager configuration mode:</p>
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```
ip mrm manager test1
manager ethernet 0 group 239.1.1.1
senders 1
```

Related Commands	Command	Description
	mrm	Starts or stops an MRM test.
	show ip mrm manager	Displays test information for MRM.

manager

To specify that an interface is the Manager for Multicast Routing Monitor (MRM), and to specify the multicast group address the Test Receiver will listen to, use the **manager** manager configuration command. To remove the Manager or group address, use the **no** form of the command.

manager *type number* **group** *ip-address*

no manager *type number* **group** *ip-address*

Syntax Description

<i>type number</i>	Interface type and number of the Manager. The IP address associated with this interface is the source address of the Manager.
group <i>ip-address</i>	IP multicast group address that the Test Receiver will listen to.

Defaults

There is no MRM Manager.

Command Modes

Manager configuration

Command History

Release	Modification
12.0(5)S	This command was introduced.

Usage Guidelines

This command identifies the interface that acts as the Manager, and therefore is required in order to run the Multicast Routing Monitor feature.

Examples

The following example configures Ethernet interface 0 as the Manager. It also configures the Test Receiver to listen to multicast group 239.1.1.1.

```
ip mrm manager test1
manager ethernet 0 group 239.1.1.1
```

Related Commands

Command	Description
beacon	Changes the frequency, duration, or scope of beacon messages that the Manager sends to Test Senders and Test Receivers during an MRM test.
ip mrm accept-manager	Configures a Test Sender or Test Receiver to accept requests only from Managers that pass an access list.
show ip mrm manager	Displays test information for MRM.

mrinfo

To query which neighboring multicast routers are “peering” with the local router, use the **mrinfo** EXEC command.

mrinfo [*hostname | address*] [*source-address | interface*]

Syntax Description		
<i>hostname address</i>	(Optional) Queries the DNS name or IP address of the multicast router. If omitted, the router queries itself.	
<i>source-address</i>	(Optional) Source address used on mrinfo requests. If omitted, the source address is based on the outbound interface for the destination.	
<i>interface</i>	(Optional) Source interface used on mrinfo requests. If omitted, the source is based on the outbound interface for the destination.	

Command Modes EXEC

Command History	Release	Modification
	11.0	This command was introduced.

Usage Guidelines The mrinfo command is the MBONE’s original tool to determine what neighboring multicast routers are peering with a multicast router. Cisco routers have supported responding to mrinfo requests since Cisco IOS Release 10.2.

Now you can query a multicast router using this command. The output format is identical to DVMRP’s mrouted version. (The mrouted software is the UNIX software that implements DVMRP.)

Examples The following is sample output of the **mrinfo** command:

```
Router # mrinfo
192.31.7.37 (barnet-gw.cisco.com) [version cisco 11.1] [flags: PMSA]:
  192.31.7.37 -> 192.31.7.34 (sj-wall-2.cisco.com) [1/0/pim]
  192.31.7.37 -> 192.31.7.47 (dirtylab-gw-2.cisco.com) [1/0/pim]
  192.31.7.37 -> 192.31.7.44 (dirtylab-gw-1.cisco.com) [1/0/pim]
  131.119.26.10 -> 131.119.26.9 (su-pr2.bbnplanet.net) [1/32/pim]
```

The flags indicate the following:

- P = prune-capable
- M = mtrace-capable
- S = SNMP-capable
- A = Auto-RP-capable

mrm

To start or stop a Multicast Routing Monitor (MRM) test, use the **mrmtest** EXEC command.

```
mrm test-name {start | stop}
```

Syntax Description

<i>test-name</i>	Name of the MRM test, as defined by the ip mrm manager command.
start	Starts the MRM test specified by <i>test-name</i> .
stop	Stops the MRM test specified by <i>test-name</i> .

Command Modes

EXEC

Command History

Release	Modification
12.0(5)S	This command was introduced.

Usage Guidelines

You must use this command to run an MRM test. When the test runs, the Test Sender sends UDP or UDP/RTP packets (depending on the **senders** command) to the Test Receiver.

Examples

The following example starts the MRM test named test1:

```
mrm test1 start
```

Related Commands

Command	Description
ip mrm manager	Identifies an MRM test and enters the mode in which you specify the test parameters.
show ip mrm status-report	Displays MRM status reports of errors in the circular cache buffer.

mstat

To display IP multicast packet rate and loss information, use the **mstat** user EXEC command.

```
mstat source [destination] [group]
```

Syntax Description	
<i>source</i>	DNS name or the IP address of the multicast-capable source.
<i>destination</i>	(Optional) DNS name or address of the destination. If omitted, the command uses the system at which the command is typed.
<i>group</i>	(Optional) DNS name or multicast address of the group to be displayed. Default address is 224.2.0.1 (the group used for MBONE Audio).

Command Modes	
	User EXEC

Command History	Release	Modification
	11.0	This command was introduced.

Usage Guidelines

If no arguments are entered, the router will interactively prompt you for them. This command is a form of UNIX mtrace that reports packet rate and loss information.

Examples

The following is sample output from the **mstat** command:

```
Router# mstat lwei-home-ss2 171.69.58.88 224.0.255.255

Type escape sequence to abort.
Mtrace from 171.69.143.27 to 171.69.58.88 via group 224.0.255.255
>From source (lwei-home-ss2.cisco.com) to destination (lwei-ss20.cisco.com)
Waiting to accumulate statistics.....
```

Results after 10 seconds:

```

Source          Response Dest      Packet Statistics For      Only For Traffic
171.69.143.27   171.69.62.144     All Multicast Traffic     From 171.69.143.27
|              ___/  rtt 48  ms   Lost/Sent = Pct  Rate   To 224.0.255.255
v              /    hop 48  ms   -----
171.69.143.25   lwei-cisco-isdn.cisco.com
|              ^    ttl  1
v              |    hop 31  ms   0/12 = 0%      1 pps   0/1 = --%  0 pps
171.69.121.84
171.69.121.45   eng-frmt12-pri.cisco.com
|              ^    ttl  2
v              |    hop -17 ms   -735/12 = --%  1 pps   0/1 = --%  0 pps
171.69.121.4
171.69.5.27     eng-cc-4.cisco.com
|              ^    ttl  3
v              |    hop -21 ms   -678/23 = --%  2 pps   0/1 = --%  0 pps
171.69.5.21
171.69.62.130   eng-ios-2.cisco.com
|              ^    ttl  4
v              |    hop  5  ms   605/639 = 95%  63 pps  1/1 = --%  0 pps
171.69.62.144
171.69.58.65    eng-ios-f-5.cisco.com
|              \___  ttl  5
v              \   hop  0  ms   4          0 pps      0      0 pps
171.69.58.88    171.69.62.144
Receiver        Query Source

```

Table 123 describes the fields shown in the display.

Table 123 mstat Field Descriptions

Field	Description
Source	Traffic source of packet.
Response Dest	Place where the router sends the results of mstat command.
ttl	Number of hops required from the traffic source to the current hop.
hop	Number of milliseconds of delay.
Only For Traffic From ... 0/2	0 packets dropped out of 2 packets received. If, for example, -2/2 was indicated, then there are 2 extra packets; this could indicate a loop condition,

Related Commands

Command	Description
mtrace	Traces the path from a source to a destination branch for a multicast distribution tree.

mtrace

To trace the path from a source to a destination branch for a multicast distribution tree, use the **mtrace** user EXEC command.

```
mtrace source [destination] [group]
```

Syntax Description

<i>source</i>	DNS name or the IP address of the multicast-capable source. This is a unicast address of the beginning of the path to be traced.
<i>destination</i>	(Optional) DNS name or address of the unicast destination. If omitted, the mtrace starts from the system at which the command is typed.
<i>group</i>	(Optional) DNS name or multicast address of the group to be traced. Default address is 224.2.0.1 (the group used for MBONE Audio). When address 0.0.0.0 is used, the software invokes a weak mtrace . A weak mtrace is one that follows the RPF path to the source, regardless of whether any router along the path has multicast routing table state.

Command Modes

User EXEC

Command History

Release	Modification
11.0	This command was introduced.

Usage Guidelines

The trace request generated by the **mtrace** command is multicast to the multicast group to find the last hop router to the specified destination. The trace then follows the multicast path from destination to source by passing the mtrace request packet via unicast to each hop. Responses are unicast to the querying router by the first hop router to the source. This command allows you to isolate multicast routing failures.

If no arguments are entered, the router will interactively prompt you for them.

This command is identical in function to the UNIX version of mtrace.

Examples

The following is sample output from the **mtrace** command:

```
Router# mtrace 171.69.215.41 171.69.215.67 239.254.254.254

Type escape sequence to abort.
Mtrace from 171.69.215.41 to 171.69.215.67 via group 239.254.254.254
From source (?) to destination (?)
Querying full reverse path...
 0 171.69.215.67
-1 171.69.215.67 PIM thresh^ 0 0 ms
-2 171.69.215.74 PIM thresh^ 0 2 ms
-3 171.69.215.57 PIM thresh^ 0 894 ms
-4 171.69.215.41 PIM thresh^ 0 893 ms
-5 171.69.215.12 PIM thresh^ 0 894 ms
-6 171.69.215.98 PIM thresh^ 0 893 ms
```

Table 124 describes the fields shown in the display.

Table 124 mtrace Field Descriptions

Field	Description
Mtrace from 171.69.215.41 to 171.69.215.67 via group 239.254.254.254	Name and address of source, destination, and group for which routes are being traced.
-3 171.69.215.57	Hops away from destination (-3) and address of intermediate router.
PIM thresh^ 0	Multicast protocol in use on this hop, and ttl threshold.
893 ms	Time taken for trace to be forwarded between hops.

Related Commands

Command	Description
mstat	Displays IP multicast packet rate and loss information.

receivers

To configure the following, use the **receivers** command in manager configuration mode:

- Establish Test Receivers for Multicast Routing Monitor (MRM)
- Specify which Test Senders the Test Receivers will listen to
- Specify which sources the Test Receivers monitor
- Specify the packet delay
- Change Test Receiver parameters

To restore the default values, use the **no** form of the command.

```
receivers {access-list-name | access-list-number} [sender-list {access-list-name |
access-list-number} [packet-delay]] [window seconds] [report-delay seconds] [loss
percentage] [no-join] [monitor | poll]
```

```
no receivers {access-list-name | access-list-number} [sender-list {access-list-name |
access-list-number} [packet-delay]] [window seconds] [report-delay seconds] [loss
percentage] [no-join] [monitor | poll]
```

Syntax Description

<i>access-list name</i> <i>access-list number</i>	IP named or numbered access list that establishes who the Test Receivers are. Only these Test Receivers are subject to the other keywords and arguments specified in this command.
sender-list <i>access-list name</i> <i>access-list number</i>	(Optional) Specifies the sources that the Test Receiver should monitor. If the access list matches any access list specified in the senders command, the associated packet-delay <i>milliseconds</i> keyword and argument of that senders command is used in this command. Otherwise, <i>packet-delay</i> is required in this receivers command.
<i>packet-delay</i>	(Optional) Specifies the delay between test packets (in milliseconds). If the sender-list access list matches any access list specified in the senders command, the associated packet-delay <i>milliseconds</i> keyword and argument of that senders command is used in this command. Otherwise, the <i>packet-delay</i> argument is required in this receivers command.
window <i>seconds</i>	(Optional) Duration (in seconds) of a test period. This is a sliding window of time in which packet count is collected, so that the loss percentage can be calculated. Default is 5 seconds.
report-delay <i>seconds</i>	(Optional) Delay (in seconds) between staggered status reports from multiple Test Receivers to the Manager. The delay prevents multiple receivers from sending status reports to the Manager at the same time for the same failure. Receiver 1 sends status, <i>seconds</i> later Receiver 2 sends status, <i>seconds</i> later Receiver 3 sends status, and so on. This value is relevant only if there are multiple Test Receivers. The default is 1 second.

loss percentage	(Optional) Threshold percentage of packet loss required before a status report is triggered. The default is 0%, which means that a status report is sent for any packet loss. (This value is not applied to packet duplication; a fault report is sent for any duplicated packets.) Loss percentage calculation is explained in the “Usage Guidelines” section of this command.
no-join	(Optional) Specifies that the Test Receiver does not join the monitored group. The default is that the Test Receiver joins the monitored group.
monitor poll	(Optional) Specifies whether the Test Receiver monitors the test group or polls for receiver statistics. The monitor keyword means the Test Receiver reports only if the test criteria are met. Poll means the Test Receiver sends status reports regularly, whether test criteria are met or not. The default is the monitor keyword.

Defaults

window seconds is 5 seconds
report-delay seconds is 1 second
loss percentage is 0 percent
monitor

Command Modes

Manager configuration

Command History

Release	Modification
12.0(5)S	This command was introduced.

Usage Guidelines

This command is required for the Multicast Routing Monitor feature to work; the **receivers** keyword and the first access list must be specified. The rest of the command is optional.

Loss percentage is calculated based on the **packet-delay** value of the **senders** command, which defaults to 200 milliseconds, or 5 packets per second. If the **window** keyword defaults to 5 seconds, then the Test Receiver expects 5 packets per second for 5 seconds = 25 packets. If the Test Receiver receives only 15 packets, then $25 - 15 = 10$ lost packets. Lost packets divided by packets expected equals loss percentage. $10/25$ equals a loss percentage of 40 percent.

Examples

In the following example, test2 has the proxy-sender address 10.1.1.10, and the corresponding receiver command has an explicit packet delay configured to match the default packet delay of the sender:

```
ip mrm manager test1
  manager e4/0/1 group 239.1.1.1
  senders 1
  receivers 2 sender-list 1
ip mrm manager test2
  manager e4/0/1 group 239.1.1.1
  senders 1 10.1.1.10
  receivers 2 sender-list 3 200
  udp-port test-packet 16386 status-report 65533
!
access-list 1 permit 10.1.1.2
access-list 2 permit 10.1.4.2
access-list 3 permit 10.1.1.10
```

Related Commands

Command	Description
<code>senders</code>	Configures Test Sender parameters used in MRM.

senders

To configure Test Sender parameters used in Multicast Routing Monitor (MRM), use the **senders** manager configuration command. To restore the default values, use the **no** form of the command.

```
senders {access-list-name | access-list number} [packet-delay milliseconds] [rtp | udp]
[target-only | all-multicasts | all-test-senders] [proxy_src]
```

```
no senders {access-list-name | access-list number} [packet-delay milliseconds] [rtp | udp]
[target-only | all-multicasts | all-test-senders] [proxy_src]
```

Syntax Description

<i>access-list name</i> <i>access-list number</i>	IP named or numbered access list that defines which Test Senders are involved in the test and which Test Senders these parameters apply to.
packet-delay <i>milliseconds</i>	(Optional) Specifies the delay between test packets (in milliseconds). The default is 200 milliseconds, which results in 5 packets per second.
rtp udp	(Optional) Encapsulation of test packets, either RTP-encapsulated or UDP-encapsulated. The default is RTP-encapsulated.
target-only	(Optional) Specifies that test packets are sent out on the targeted interface only (that is, the interface with the IP address that is specified in the Test Sender request target field). By default, test packets are sent as described in the all-multicasts keyword.
all-multicasts	(Optional) Specifies that the test packets are sent out on all interfaces that are enabled with IP multicast. This is the default way that test packets are sent.
all-test-senders	(Optional) Specifies that test packets are sent out on all interfaces that have test-sender mode enabled. By default, test packets are sent as described in the all-multicasts keyword.
<i>proxy_src</i>	(Optional) Source IP address for which the Test Sender will proxy test packets. Use this if you want to test, for a specific source, whether the multicast distribution tree is working.

Defaults

packet-delay *milliseconds* is 200 milliseconds (that is, 5 packets per second)

rtp

all-multicasts

Command Modes

Manager configuration

Command History

Release	Modification
12.0(5)S	This command was introduced.

Usage Guidelines

Use this command to specify which Test Senders are involved in the test and are affected by these parameters.

Examples

In the following example, test2 has the proxy-sender address 10.1.1.10, and the corresponding **receivers** command has an explicit packet delay configured to match the default packet delay of the sender:

```
ip mrm manager test1
  manager e4/0/1 group 239.1.1.1
  senders 1
  receivers 2 sender-list 1
ip mrm manager test2
  manager e4/0/1 group 239.1.1.1
  senders 1 10.1.1.10
  receivers 2 sender-list 3 200
  udp-port test-packet 16386 status-report 65533
!
access-list 1 permit 10.1.1.2
access-list 2 permit 10.1.4.2
access-list 3 permit 10.1.1.10
```

Related Commands

Command	Description
receivers	Configures the following: (1) establishes Test Receivers for MRM; (2) specifies which Test Senders the Test Receivers will listen to; (3) specifies which sources the Test Receivers monitor; (4) specifies the packet delay; or (5) changes Test Receiver parameters.

show ip mrm interface

To display Test Sender or Test Receiver information about Multicast Routing Monitor (MRM), use the **show ip mrm interface EXEC** command.

```
show ip mrm interface [interface-unit]
```

Syntax Description	<i>interface-unit</i>	(Optional) Interface about which to display Test Sender or Test Receiver information. If no interface is specified, information about all Test Senders and Test Receivers is displayed.
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Command Modes	EXEC
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Command History	Release	Modification
	12.0(5)S	This command was introduced.

Usage Guidelines Use this command to see which interfaces are participating in MRM in which roles, and whether the interfaces are up or down.

Examples The following example is sample output for the **show ip mrm interface** command:

```
Router# show ip mrm interface

Interface      Address      Mode          Status
Ethernet0     1.1.1.1     Test-Sender   Up
Ethernet1     2.2.2.2     Test-Receiver Up
```

Table 125 describes the fields in the display.

Table 125 show ip mrm interface Field Descriptions

Field	Description
Interface	List of interfaces on this router that serve as a Test Sender or Test Receiver.
Address	IP address of the interface.
Mode	Role that the interface plays in the Multicast Routing Monitor feature, either Test Sender or Test Receiver.
Status	Status of the interface.

Related Commands	Command	Description
	ip mrm	Configures an interface to operate as a Test Sender or Test Receiver, or both, for MRM.

show ip mrm manager

To display test information for Multicast Routing Monitor (MRM), use the **show ip mrm manager EXEC** command.

```
show ip mrm manager [test-name]
```

Syntax Description	<i>test-name</i>	(Optional) Name of the MRM test (as specified in the ip mrm manager command) for which to display information. If no name is specified, information about all Managers is displayed.
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Command Modes	EXEC
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Command History	Release	Modification
	12.0(5)S	This command was introduced.

Usage Guidelines Use this command to see information about the Manager.

Examples The following example is sample output for the **show ip mrm manager** command executed at two different times:

```
Router# show ip mrm manager test

Manager:test/1.1.1.1 is running, expire:1d00h
  Beacon interval/holdtime/ttl:60/86400/32
  Group:239.1.2.3, UDP port test-packet/status-report:16384/65535
  Test senders:
    2.2.2.2      /Ack
  Test receivers:
    3.3.3.3      /Ack

Router# show ip mrm manager test

Manager:test/1.1.1.1 is not running
  Beacon interval/holdtime/ttl:60/86400/32
  Group:239.1.2.3, UDP port test-packet/status-report:16384/65535
  Test senders:
    2.2.2.2
  Test receivers:
    3.3.3.3
```

Table 126 describes the fields in the display.

Table 126 show ip mrm manager Field Descriptions

Field	Description
Manager	Status of the test named “test” run by the Manager at 1.1.1.1.
Beacon interval/holdtime/ttl	Beacon parameters configured by the beacon command.
Group	IP multicast group that the Test Receiver will listen to, as configured by the manager command.
UDP port test-packet / status report	UDP port number to which test packets sent are by a Test Sender/status reports are sent by a Test Receiver, as configured by the udp-port command.
Test senders	IP address of Test Senders.
Test receivers	IP address of Test Receivers.

Related Commands

Command	Description
ip mrm manager	Identifies an MRM test and enters the mode in which you specify the test parameters.
manager	Specifies that an interface is the Manager for MRM, and specifies the multicast group address the Test Receiver will listen to.

show ip mrm status-report

To display Multicast Routing Monitor (MRM) status reports of errors in the circular cache buffer, use the **show ip mrm status-report EXEC** command.

show ip mrm status-report [*ip-address*]

Syntax Description	<i>ip-address</i>	(Optional) Displays information received from this IP address only. If no address is specified, all status reports in the cache buffer are displayed.
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Command Modes	EXEC
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Command History	Release	Modification
	12.0(5)S	This command was introduced.

Usage Guidelines

Use this command during your MRM test period to see if any errors are reported. The Manager immediately displays error reports and sends error reports, if any, to the circular cache buffer. The buffer holds up to 1024 lines, with one line for each error report.

No errors reported indicates that the Test Receiver is receiving test packets without loss or duplicates from the Test Sender.

Examples

The following example is sample output for the **show ip mrm status-report** command:

```
Router# show ip mrm status-report

IP MRM status report cache:
Timestamp      Manager      Test Receiver  Pkt Loss/Dup (%)    Ehsr
*Apr 20 07:36:08 1.1.1.1      3.3.3.3        5                    (20%)    0
*Apr 20 07:36:09 1.1.1.1      3.3.3.3        10                   (40%)    0
*Apr 20 07:36:10 1.1.1.1      3.3.3.3        15                   (60%)    0
```

Table 127 describes the fields in the display.

Table 127 show ip mrm status-report Field Descriptions

Field	Description
Timestamp	Time when status report arrived in cache. Month and date, hours:minutes:seconds.
Manager	IP address of the Manager.
Test Receiver	IP address of the Test Receiver.
Pkt Loss/Dup	Number of packets lost or duplicated.

Table 127 show ip mrm status-report Field Descriptions (continued)

Field	Description
%	<p>Percentage of packets lost or duplicated. Loss percentage is calculated based on the packet-delay value of the senders command, which defaults to 200 milliseconds, or 5 packets per second. If the window keyword defaults to 5 seconds, then the Test Receiver expects 5 packets per second for 5 seconds = 25 packets. If the Test Receiver receives only 15 packets, then 25 - 15 = 10 lost packets. Lost packets divided by packets expected equals loss percentage. 10/25 equals a loss percentage of 40%.</p> <p>A negative percentage indicates duplicate packets were received.</p> <p>If the packet loss reaches 100%, the Test Receiver will back off and not send periodic reports until the packet loss decreases to less than 100%.</p>
Ehsr	Extended highest sequence number received from Real Time Transport Protocol (RTP).

Related Commands

Command	Description
clear ip mrm status-report	Clears the status report cache buffer.

udp-port

To change User Datagram Protocol (UDP) port numbers to which a Test Sender sends test packets or a Test Receiver sends status reports, use the **udp-port** manager configuration command. To remove the port numbers, use the **no** form of the command.

udp-port [**test-packet** *port-number*] [**status-report** *port-number*]

no udp-port [**test-packet** *port-number*] [**status-report** *port-number*]

Syntax Description

test-packet <i>port-number</i>	(Optional) UDP port number to which test packets are sent by a Test Sender. The port number must be even if the packets are RTP-encapsulated. The default port number is 16384.
status-report <i>port-number</i>	(Optional) UDP port number to which status reports are sent by a Test Receiver. The port number must be odd if the packets are RTCP-encapsulated. The default port number is 65535.

Defaults

test-packet *port-number* is 16384, the minimum value of an audio port.

status-report *port-number* is 65535, the maximum value of a video port.

Command Modes

Manager configuration

Command History

Release	Modification
12.0(5)S	This command was introduced.

Usage Guidelines

Change the default values if you want to listen to a different port.

Examples

The following example changes the UDP port number to which test packets are targeted to 20000:

```
udp-port test-packet 20000
```

Related Commands

Command	Description
ip mrm	Configures an interface to operate as a Test Sender or Test Receiver, or both, for MRM.

■ udp-port