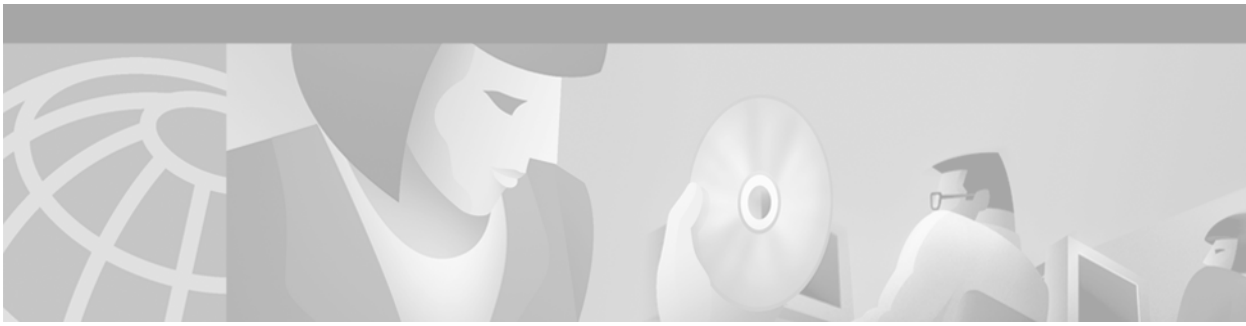

Multicast Source Discovery Protocol Commands

Use the commands in this chapter to configure and monitor Multicast Source Discovery Protocol (MSDP). For configuration information and examples of MSDP, refer to the "Configuring Multicast Source Discovery Protocol" chapter of the *Cisco IOS IP Configuration Guide*.

clear ip msdp peer

To clear the TCP connection to the specified Multicast Source Discovery Protocol (MSDP) peer, use the **clear ip msdp peer** command in EXEC mode.

clear ip msdp peer {*peer-address* | *peer-name*}

Syntax Description

peer-address | *peer-name*	IP address or name of the MSDP peer to which the TCP connection is cleared.

Command Modes

EXEC

Command History

Release	Modification
12.0(7)T	This command was introduced.

Usage Guidelines

This command closes the TCP connection to the peer, resets all the MSDP peer statistics, and clears the input and output queues to and from the MSDP peer.

Examples

The following example clears the TCP connection to the MSDP peer at 10.3.32.154:

```
Router# clear ip msdp peer 10.3.32.154
```

Related Commands

Command	Description
ip msdp peer	Configures an MSDP peer.

clear ip msdp sa-cache

To clear Multicast Source Discovery Protocol (MSDP) Source-Active (SA) cache entries, use the **clear ip msdp sa-cache** command in EXEC mode.

clear ip msdp sa-cache [*group-address* | *group-name*]

Syntax Description

group-address | *group-name*	(Optional) Multicast group address or name for which Source-Active entries are cleared from the Source-Active cache.

Command Modes

EXEC

Command History

Release	Modification
12.0(7)T	This command was introduced.

Usage Guidelines

In order to have any SA entries in the cache to clear, SA caching must have been enabled with the **ip msdp cache-sa-state** command

If no multicast group is identified by group address or name, all SA cache entries are cleared.

Examples

The following example clears the SA entries for the multicast group 10.3.53.154 from the cache:

```
Router# clear ip msdp sa-cache 10.3.53.154
```

Related Commands

Command	Description
ip msdp cache-sa-state	Enables the router to create SA state.
show ip msdp sa-cache	Displays (S,G) state learned from MSDP peers.

clear ip msdp statistics

To clear statistics counters for one or all of the Multicast Source Discovery Protocol (MSDP) peers without resetting the sessions, use the **clear ip msdp statistics** command in EXEC mode.

clear ip msdp statistics [*peer-address* | *peer-name*]

Syntax Description

peer-address | *peer-name*	(Optional) Address or name of the MSDP peers whose statistics counters, reset count, and input/output count are cleared.

Command Modes

EXEC

Command History

Release	Modification
12.0(7)T	This command was introduced.

Examples

The following example clears the counters for the peer named sanjose:

```
Router# clear ip msdp statistics sanjose
```

ip msdp border

To configure a router that borders a Protocol Independent Multicast (PIM) sparse mode region and dense mode region to use Multicast Source Discovery Protocol (MSDP), use the **ip msdp border** command in global configuration mode. To prevent this action, use the **no** form of this command.

ip msdp border sa-address *type number*

no ip msdp border sa-address *type number*

Syntax Description

sa-address	Active source IP address.
type number	Interface type and number from which the IP address is derived and used as the rendezvous point (RP) address in Source-Active (SA) messages. Thus, MSDP peers can forward SA messages away from this border. The IP address of the interface is used as the originator ID, which is the RP field in the MSDP SA message.

Defaults

The active sources in the dense mode region will not participate in MSDP.

Command Modes

Global configuration

Command History

Release	Modification
12.0(7)T	This command was introduced.

Usage Guidelines

Use this command if you want the router to send SA messages for sources active in the PIM dense mode region to MSDP peers.

Note We recommend configuring the border router in the sparse mode domain to proxy-register sources in the dense mode domain, and have the sparse mode domain use standard MSDP procedures to advertise these sources.

Note If you use this command, you MUST constrain the sources advertised by using the **ip msdp redistribute** command. Configure the **ip msdp redistribute** command to apply to only local sources. Be aware that this configuration can result in (S, G) state remaining long after a source in the dense mode domain has stopped sending.

Note The **ip msdp originator-id** command also identifies an interface type and number to be used as the RP address. If both the **ip msdp border** and the **ip msdp originator-id** command are configured, the latter command prevails. That is, the address derived from the **ip msdp originator-id** command determines the address of the RP.

Examples

In the following example, the local router is not an RP. It borders a PIM sparse mode region with a dense mode region. It uses the IP address of Ethernet interface 0 as the "RP" address in SA messages.

```
ip msdp border sa-address ethernet0
```

Related Commands

Command	Description
ip msdp originator-id	Allows an MSDP speaker that originates an SA message to use the IP address of its interface as the RP address in the SA message.
ip msdp redistribute	Configures which (S,G) entries from the multicast routing table are advertised in SA messages originated to MSDP peers.

ip msdp cache-rejected-sa

To cache Source-Active (SA) request messages rejected from Multicast Source Discovery Protocol (MSDP) peers, use the **ip msdp cache-rejected-sa** command in global configuration mode. To stop tracking SA request messages, use the **no** form of this command.

ip msdp cache-rejected-sa *number-of-entries*

no ip msdp cache-rejected-sa *number-of-entries*

Syntax Description

number-of-entries	Number of entries to be cached. The range is from 1 to 32766.

Defaults

Rejected SA request messages are not stored.

Command Modes

Global configuration

Command History

Release	Modification
12.0(22)S	This command was introduced.
12.1E	This command was integrated into Cisco IOS Release 12.1E.
12.2	This command was integrated into Cisco IOS Release 12.2.

Usage Guidelines

Use the **ip msdp cache-rejected-sa** command to configure the router to store SA messages that have been recently received from an MSDP peer but were rejected. Once this command is enabled, the router will maintain a rejected SA cache that stores the most recent rejected SA messages. The number of rejected SA message entries to be stored in the rejected SA cache is configured with the *number-of-entries* argument. If the rejected SA cache overflows, entries are overwritten, starting from the first entry.

Note Enabling the **ip msdp cache-rejected-sa** command will not impact the performance of MSDP.

Use the **show ip msdp sa-cache** command with the **rejected-sa** keyword to display SA messages rejected from MSDP peers.

Examples

The following example shows how to enable the router to store a maximum of 200 messages rejected from MSDP peers:

```
Router(config)# ip msdp cache-rejected-sa 200
```

Related Commands

Command	Description
show ip msdp sa-cache	Displays the (S, G) state learned from MSDP peers.

ip msdp cache-sa-state

To have the router create Source-Active (SA) state, use the **ip msdp cache-sa-state** command in global configuration mode.

ip msdp cache-sa-state [**vrf** *vrf-name*]

Syntax Description

vrf	(Optional) Supports the multicast VPN routing and forwarding (VRF) instance.
vrf-name	(Optional) Name assigned to the VRF.

Defaults

The router creates SA state for all Multicast Source Discovery Protocol (MSDP) SA messages it receives.

Command Modes

Global configuration

Command History

Release	Modification
12.0(7)T	This command was introduced.
12.1(7)	This command was modified such that it is enabled by default and cannot be disabled.
12.0(23)S	The **vrf** keyword and *vrf-name* argument were added.
12.2(13)T	The **vrf** keyword and *vrf-name* argument were added.

Usage Guidelines

This command is automatically configured if at least one MSDP peer is configured. It cannot be disabled.

If you are running a version of Cisco IOS software prior to Release 12.1(7), we recommend enabling the **ip msdp cache-sa-state** command.

Examples

The following example shows how the **ip msdp cache-sa-state** command is enabled when an MSDP peer is configured:

```
.
.
.
ip classless
ip msdp peer 192.168.1.2 connect-source Loopback0
ip msdp peer 192.169.1.7
ip msdp mesh-group outside-test 192.168.1.2
ip msdp cache-sa-state
ip msdp originator-id Loopback0
.
.
.
```

Related Commands

Command	Description
clear ip msdp sa-cache	Clears MSDP SA cache entries.
ip msdp sa-request	Configures the router to send SA request messages to the MSDP peer when a new joiner from the group becomes active.
show ip msdp sa-cache	Displays (S, G) state learned from MSDP peers.

ip msdp default-peer

To define a default peer from which to accept all Multicast Source Discovery Protocol (MSDP) Source-Active (SA) messages, use the **ip msdp default-peer** command in global configuration mode. To remove the default peer, use the **no** form of this command.

ip msdp default-peer {*peer-address* | *peer-name*} [**prefix-list** *list*]

no ip msdp default-peer

Syntax Description

peer-address | *peer-name*	IP address or Domain Name System (DNS) name of the MSDP default peer.
prefix-list *list*	(Optional) Border Gateway Protocol (BGP) prefix list that specifies the peer will be a default peer only for the prefixes listed in the list specified by the *list* argument. A BGP prefix list must be configured for this **prefix-list** *list* keyword and argument to have any effect.

Defaults

No default MSDP peer exists.

Command Modes

Global configuration

Command History

Release	Modification
12.0(7)T	This command was introduced.

Usage Guidelines

Use the **ip msdp default-peer** command if you do not want to configure your MSDP peer to be a BGP peer also.

If only one MSDP peer is configured (with the **ip msdp peer** command), it will be used as a default peer. Therefore, you need not configure a default peer with this command.

If the **prefix-list** *list* keyword and argument are not specified, all SA messages received from the configured default peer are accepted.

Remember to configure a BGP prefix list if you intend to configure the **prefix-list** *list* keyword and argument with the **ip msdp default-peer** command.

If the **prefix-list** *list* keyword and argument are specified, SA messages originated from rendezvous points (RPs) covered by the **prefix-list** *list* keyword and argument will be accepted from the configured default peer. If the **prefix-list** *list* keyword and argument are specified but no prefix list is configured, the default peer will be used for all prefixes.

You can enter multiple **ip msdp default-peer** commands, with or without the **prefix-list** keyword, as follows. However, all commands must either have the keyword or all must not have the keyword.

- When you use multiple **ip msdp default-peer** commands with the **prefix-list** keyword, you use all the default peers at the same time for different RP prefixes. This syntax is typically used in a service provider cloud that connects stub site clouds.
- When you use multiple **ip msdp default-peer** commands without the **prefix-list** keyword, you use a single active peer to accept all SA messages. If that peer goes down, then you move to the next configured default peer to accept all SA messages. This syntax is typically used at a stub site.

Examples

The following example configures the router at IP address 192.168.1.3 as the default peer to the local router:

```
ip msdp peer 192.168.1.3
ip msdp peer 192.168.3.5
ip msdp default-peer 192.168.1.3
```

The following example configures two default peers:

```
ip msdp peer 172.18.2.3
ip msdp peer 172.19.3.5
ip msdp default-peer 172.18.2.3 prefix-list site-c
ip prefix-list site-a permit 172.18.0.0/16
ip msdp default-peer 172.19.3.5 prefix-list site-a
ip prefix-list site-c permit 172.19.0.0/16
```

Related Commands

Command	Description
ip msdp peer	Configures an MSDP peer.
ip prefix-list	Creates a prefix list.

ip msdp description

To add descriptive text to the configuration for a Multicast Source Discovery Protocol (MSDP) peer, use the **ip msdp description** command in global configuration mode. To remove the description, use the **no** form of this command.

ip msdp description {*peer-name* | *peer-address*} *text*

no ip msdp description {*peer-name* | *peer-address*}

Syntax Description

peer-name | *peer-address*	Peer name or address to which this description applies.
text	Description of the MSDP peer.

Defaults

No description is associated with an MSDP peer.

Command Modes

Global configuration

Command History

Release	Modification
12.0(7)T	This command was introduced.

Usage Guidelines

Configure a description to make the MSDP peer easier to identify. This description is visible in the output of the **show ip msdp peer** command.

Examples

The following example configures the router at the IP address 172.17.1.2 with a description indicating it is a router at customer A:

```
ip msdp description 172.17.1.2 router at customer a
```

ip msdp filter-sa-request

To configure the router to send Source-Active (SA) request messages to the Multicast Source Discovery Protocol (MSDP) peer when a new joiner from a group becomes active, use the **ip msdp filter-sa-request** command in global configuration mode. To prevent this action, use the **no** form of this command.

ip msdp filter-sa-request {*peer-address* | *peer-name*} [**list** *access-list*]

no ip msdp filter-sa-request {*peer-address* | *peer-name*}

Syntax Description

peer-address | *peer-name*	IP address or name of the MSDP peer from which the local router requests SA messages when a new joiner for the group becomes active.
list *access-list*	(Optional) Standard IP access list number or name that describes a multicast group address. If no access list is specified, all SA request messages are ignored.

Defaults

If this command is not configured, all SA request messages are honored. If this command is configured but no access list is specified, all SA request messages are ignored.

Command Modes

Global configuration

Command History

Release	Modification
12.0(7)T	This command was introduced.

Usage Guidelines

By default, the router honors all SA request messages from peers. Use this command if you want to control exactly which SA request messages the router will honor.

If no access list is specified, all SA request messages are ignored. If an access list is specified, only SA request messages from those groups permitted will be honored, and all others will be ignored.

Examples

The following example configures the router to filter SA request messages from the MSDP peer at 172.16.2.2. SA request messages from sources on the network 192.168.22.0 pass access list 1 and will be honored; all others will be ignored.

```
ip msdp filter sa-request 172.16.2.2 list 1
access-list 1 permit 192.4.22.0 0.0.0.255
```

Related Commands

Command	Description
ip msdp peer	Configures an MSDP peer.

ip msdp keepalive

To adjust the interval at which a Multicast Source Discovery Protocol (MSDP) peer will send keepalive messages and the interval at which the MSDP peer will wait for keepalive messages from other peers before declaring them down, use the **ip msdp keepalive** command in global configuration mode. To restore the default values, use the **no** form of this command.

ip msdp [**vrf** *vrf-name*] **keepalive** {*peer-address* | *peer-name*} *keepalive-interval hold-time-interval*

no ip msdp [**vrf** *vrf-name*] **keepalive** {*peer-address* | *peer-name*}

Syntax Description

vrf *vrf-name*	(Optional) Configures the keepalive and hold-time intervals for the MSDP peer associated with the multicast VPN routing and forwarding (MVRF) instance specified for the *vrf-name* argument.
peer-address | *peer-name*	IP address or Domain Name System (DNS) name of the MSDP peer whose keepalive timer and hold-time timer is to be adjusted.
keepalive-interval	Interval, in seconds, at which the MSDP peer will send keepalive messages. The range is from 1 to 60 seconds. The default is 60 seconds.
hold-time-interval	Interval, in seconds, at which the MSDP peer will wait for keepalive messages from other peers before declaring them down. The range is from 1 to 75. The default is 75 seconds.

Command Default

An MSDP peer sends keepalives messages at an interval of once every 60 seconds. The hold-time interval for an MSDP peer is set to 75 seconds.

Command Modes

Global configuration

Command History

Release	Modification
12.1(8a)E4	This command was introduced.
12.2(5)	This command was integrated into Cisco IOS Release 12.2(5).
12.2(27)SBC	This command was integrated into Cisco IOS Release 12.2(27)SBC.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.

Usage Guidelines

Use the **ip msdp keepalive** command to adjust the interval at which an MSDP peer will send keepalive messages and the interval at which the MSDP peer will wait for keepalive messages from other peers before declaring them down.

Once an MSDP peering session is established, each side of the connection sends a keepalive message and sets a keepalive timer. If the keepalive timer expires, the local MSDP peer sends a keepalive message and restarts its keepalive timer; this interval is referred to as the keepalive interval. Use the *keepalive-interval* argument to adjust the interval for which keepalive messages will be sent. The keepalive timer is set to the value specified for the *keepalive-interval* argument when the peer comes up.

The keepalive timer is reset to the value of the *keepalive-interval* argument whenever an MSDP keepalive message is sent to the peer and reset when the timer expires. The keepalive timer is deleted when an MSDP peering session is closed. By default, the keepalive timer is set to 60 seconds.

Note The value specified for the *keepalive-interval* argument must be less than the value specified for the *holdtime-interval* argument and must be at least one second.

The hold-time timer is initialized to the value of the *hold-time-interval* argument whenever an MSDP peering connection is established, and is reset to value of the *hold-time-interval* argument whenever an MSDP keepalive message is received. The hold-time timer is deleted whenever an MSDP peering connection is closed. By default, the hold-time interval is set to 75 seconds.

Use the *hold-time-interval* argument to adjust the interval at which the MSDP peer will wait for keepalive messages from other peers before declaring them down. By default, it may take as long as 75 seconds for an MSDP peer to detect that a peering session with another MSDP peer has gone down. In network environments with redundant MSDP peers, decreasing the hold-time interval (by lowering the value for *hold-time-interval* argument from the default of 75 seconds) can expedite the reconvergence time of MSDP peers in the event that an MSDP peer fails.

Note It is recommended that you do not change the command defaults for the **ip msdp keepalive** command, as the command defaults are in accordance with RFC 3618, *Multicast Source Discovery Protocol*. If your network environment requires that you modify the defaults, you must configure the same time values for the *keepalive-interval* and *hold-time-interval* arguments on both ends of the MSDP peering session.

Examples

The following example shows how to set the keepalive interval to 40 seconds and the hold-time interval to 55 seconds for the MSDP peer at 172.16.100.10:

```
ip msdp keepalive 172.16.100.10 40 55
```

Related Commands

Command	Description
ip msdp peer	Configures an MSDP peer.

ip msdp mesh-group

To configure a Multicast Source Discovery Protocol (MSDP) peer to be a member of a mesh group, use the **ip msdp mesh-group** command in global configuration mode. To remove an MSDP peer from a mesh group, use the **no** form of this command.

ip msdp mesh-group *mesh-name* {*peer-address* | *peer-name*}

no ip msdp mesh-group *mesh-name* {*peer-address* | *peer-name*}

Syntax Description

mesh-name	Name of the mesh group.
peer-address | *peer-name*	IP address or name of the MSDP peer to be a member of the mesh group.

Defaults

The MSDP peers do not belong to a mesh group.

Command Modes

Global configuration

Command History

Release	Modification
12.0(7)T	This command was introduced.

Usage Guidelines

A mesh group is a group of MSDP speakers that have fully meshed MSDP connectivity among themselves. Source-Active (SA) messages received from a peer in a mesh group are not forwarded to other peers in the same mesh group.

Mesh groups can be used to achieve two goals:

- To reduce SA message flooding
- To simplify peer-Reverse Path Forwarding (RPF) flooding (no need to run Border Gateway Protocol [BGP] or multiprotocol BGP among MSDP peers)

Examples

The following example configures the MSDP peer at address 192.168.1.3 to be a member of the mesh group named internal:

```
ip msdp mesh-group internal 192.168.1.3
```

ip msdp originator-id

To allow a Multicast Source Discovery Protocol (MSDP) speaker that originates a Source-Active (SA) message to use the IP address of the interface as the rendezvous point (RP) address in the SA message, use the **ip msdp originator-id** command in global configuration mode. To prevent the RP address from being derived in this way, use the **no** form of this command.

ip msdp originator-id *type number*

no ip msdp originator-id *type number*

Syntax Description

type number	Interface type and number on the local router, whose IP address is used as the RP address in SA messages.

Defaults

The RP address is used as the originator ID.

Command Modes

Global configuration

Command History

Release	Modification
12.0(7)T	This command was introduced.

Usage Guidelines

The **ip msdp originator-id** command identifies an interface type and number to be used as the RP address in an SA message.

Use this command if you want to configure a logical RP. Because only RPs and MSDP border routers originate SAs, there are times when it is necessary to change the ID used for this purpose.

If both the **ip msdp border** and the **ip msdp originator-id** commands are configured, the latter command prevails. That is, the address derived from the **ip msdp originator-id** command determines the address of the RP to be used in the SA message.

Examples

The following example configures the IP address of Ethernet interface 1 as the RP address in SA messages:

```
ip msdp originator-id ethernet1
```

Related Commands

Command	Description
ip msdp border	Configures a router that borders a PIM sparse mode region and dense mode region to use MSDP.

ip msdp peer

To configure a Multicast Source Discovery Protocol (MSDP) peer, use the **ip msdp peer** command in global configuration mode. To remove the peer relationship, use the **no** form of this command.

ip msdp peer {*peer-name* | *peer-address*} [**connect-source** *type number*] [**remote-as** *as-number*]

no ip msdp peer {*peer-name* | *peer-address*}

Syntax Description

peer-name | *peer-address*	Domain Name System (DNS) name or IP address of the router that is to be the MSDP peer.
connect-source *type number*	(Optional) Interface type and number whose primary address becomes the source IP address for the TCP connection. This interface is on the router being configured.
remote-as *as-number*	(Optional) Autonomous system number of the MSDP peer. This is used for display purposes only. There are cases where a peer might appear to be in another autonomous system (other than the one it really resides in) when you have an MSDP peering session but do not have a BGP peer session with that peer. In this case, if the prefix of the peer is injected by another autonomous system, it is displayed as the autonomous system number of the peer (and is misleading).

Defaults

No MSDP peer is configured.

Command Modes

Global configuration

Command History

Release	Modification
12.0(7)T	This command was introduced.

Usage Guidelines

The router specified should also be configured as a BGP neighbor.

If you are also BGP peering with this MSDP peer, you should use the same IP address for MSDP as you do for BGP. However, you are not required to run BGP or multiprotocol BGP with the MSDP peer, as long as there is a BGP or MBGP path between the MSDP peers. If there is no path, you must configure the **ip msdp default-peer** command.

Examples

The following example configures the router at the IP address 192.168.1.2 as an MSDP peer to the local router. The neighbor belongs to autonomous system 109.

```
ip msdp peer 192.168.1.2 connect-source ethernet 0/0
router bgp 110
 network 192.168.0.0
 neighbor 192.168.1.2 remote-as 109
```

```
 neighbor 192.168.1.2 update-source ethernet 0/0
```

The following example configures the router at the IP address 192.168.1.3 as an MSDP peer to the local router:

```
ip msdp peer 192.168.1.3
```

The following example configures the router at the IP address 192.168.1.4 to be an MSDP peer in autonomous system 109. The primary address of Ethernet interface 0/0 is used as the source address for the TCP connection.

```
ip msdp peer 192.168.1.4 connect-source ethernet 0/0 remote-as 109
```

Related Commands

Command	Description
neighbor remote-as	Adds an entry to the BGP neighbor table.

ip msdp redistribute

To configure which (S, G) entries from the multicast routing table are advertised in Source-Active (SA) messages originated to Multicast Source Discovery Protocol (MSDP) peers, use the **ip msdp redistribute** command in global configuration mode. To remove the filter, use the **no** form of this command.

ip msdp redistribute [**list** *access-list*] [**asn** *as-access-list*] [**route-map** *map-name*]

no ip msdp redistribute

Syntax Description

list *access-list*	(Optional) Standard or extended IP access list number or name that controls which local sources are advertised and to which groups they send.
asn *as-access-list*	(Optional) Standard or extended IP access list number in the range from 1 to 199. This access list number must also be configured in the **ip as-path** command.
route-map *map-name*	(Optional) Defines the route map.

Defaults

If no portion of this command is configured, only local sources are advertised, provided they send to groups for which the router is a rendezvous point (RP).

If no portion of this command is configured and if the **ip msdp border sa-address** command is configured, all local sources are advertised.

If the **ip msdp redistribute** command is configured with no keywords, no multicast sources are advertised.

Command Modes

Global configuration

Command History

Release	Modification
12.0(7)T	This command was introduced.

Usage Guidelines

This command affects SA message origination, not SA message forwarding. If you want to filter which SA messages are forwarded to MSDP peers, use the **ip msdp sa-filter in** or **ip msdp sa-filter out** command.

The **ip msdp redistribute** command controls which (S, G) pairs the router advertises from the multicast routing table. By default, only sources within the local domain are advertised. Use the following guidelines for the **ip msdp redistribute** command:

- If you specify the **list** *access-list-name* keyword and argument only, you filter which local sources are advertised and to what groups they send. The access list specifies a source address, source mask, group address, and group mask.
- If you specify the **asn** *aspath-access-list-number* keyword and argument only, you advertise all sources sending to any group which pass through the autonomous system path access list. The autonomous system path access list number refers to the **ip as-path** command, which specifies an access list. If the **asn 0** keyword is specified, sources from all autonomous systems are advertised. The **asn 0** keyword is useful when connecting dense mode domains to a sparse mode domain running MSDP, or when using MSDP in a router that is not configured with Border Gateway Protocol (BGP). In these cases, you do not know if a source is local.
- If you specify the **route-map** *map* keyword and argument only, you advertise all sources that satisfy the **match** criteria in the route map *map* argument.
- If you specify all three keywords (**list**, **asn**, and **route-map**), all conditions must be true before any multicast source is advertised in an SA message.
- If you specify the **ip multicast redistribute** command with no other keywords or arguments, no multicast sources are advertised.

Examples

The following example configures which (S, G) entries from the multicast routing table are advertised in SA messages originated to MSDP peers:

```
ip msdp redistribute route-map customer-sources

route-map customer-sources permit
match as-path customer-as

ip as-path access-list ^109$
```

Related Commands

Command	Description
ip as-path	Defines a BGP-related access list.
ip msdp border	Configures a router that borders a PIM sparse mode region and dense mode region to use MSDP.

ip msdp sa-filter in

To configure an incoming filter list for Source-Active (SA) messages received from the specified Multicast Source Discovery Protocol (MSDP) peer, use the **ip msdp sa-filter in** command in global configuration mode. To remove the filter, use the **no** form of this command.

ip msdp sa-filter in {*peer-address* | *peer-name*} [**list** *access-list*] [**route-map** *map-name*]

no ip msdp sa-filter in {*peer-address* | *peer-name*} [**list** *access-list*] [**route-map** *map-name*]

Syntax Description

peer-address | *peer-name*	IP address or name of the MSDP peer from which the SA messages are filtered.
list *access-list*	(Optional) IP access list number or name. If no access list is specified, all source/group pairs from the peer are filtered.
route-map *map-name*	(Optional) Route map name. From the specified MSDP peer, passes only those SA messages that meet the match criteria in the route map *map-name* argument. If all match criteria are true, a **permit** keyword from the route map will pass routes through the filter. A **deny** keyword will filter routes.

Defaults

If this command is not configured, no incoming messages are filtered; all SA messages are accepted from the peer.

If the command is configured, but no access list or route map is specified, all source/group pairs from the peer are filtered.

If both the **list** and the **route-map** keywords are used, all conditions must be true to pass any (S, G) pair in incoming SA messages.

Command Modes

Global configuration

Command History

Release	Modification
12.0(7)T	This command was introduced.

Examples

The following example configures the router to filter all SA messages from the peer at 192.168.1.3:

```
ip msdp peer 192.168.1.3 connect-source Ethernet0/0
ip msdp sa-filter in 192.168.1.3
```

Related Commands

Command	Description
ip msdp peer	Configures an MSDP peer.
ip msdp sa-filter out	Configures an outgoing filter list for SA messages sent to the specified MSDP peer.

ip msdp sa-filter out

To configure an outgoing filter list for Source-Active (SA) messages sent to the specified Multicast Source Discovery Protocol (MSDP) peer, use the **ip msdp sa-filter out** command in global configuration mode. To remove the filter, use the **no** form of this command.

ip msdp sa-filter out {*peer-address* | *peer-name*} [**list** *access-list*] [**route-map** *map-name*]

no ip msdp sa-filter out {*peer-address* | *peer-name*} [**list** *access-list*] [**route-map** *map-name*]

Syntax Description

peer-address | *peer-name*	IP address or DNS name of the MSDP peer to which the SA messages are filtered.
list *access-list*	(Optional) Extended IP access list number or name. If no access list is specified, all source/group pairs are filtered. To the specified MSDP peer, passes only those SA messages that pass the extended access list. If both the **list** and the **route-map** keywords are used, all conditions must be true to pass any (S, G) pairs in outgoing SA messages.
route-map *map-name*	(Optional) Route map name. To the specified MSDP peer, passes only those SA messages that meet the match criteria in the route map *map-name* argument. If all match criteria are true, a **permit** keyword from the route map will pass routes through the filter. A **deny** keyword will filter routes.

Defaults

If this command is not configured, no outgoing messages are filtered; all SA messages received are forwarded to the peer.

If the command is configured, but no access list or route map is specified, all source/group pairs are filtered.

If both the **list** and the **route-map** keywords are used, all conditions must be true to pass any (S, G) pairs in outgoing SA messages.

Command Modes

Global configuration

Command History

Release	Modification
12.0(7)T	This command was introduced.

Examples

The following example allows only (S, G) pairs that pass access list 100 to be forwarded in an SA message to the peer at the IP address 192.168.1.5:

```
ip msdp peer 192.168.1.5 connect-source ethernet 0/0
ip msdp sa-filter out 192.168.1.5 list 100
access-list 100 permit ip 172.1.0.0 0.0.255.255 224.2.0.0 0.0.255.255
```

Related Commands

Command	Description
ip msdp peer	Configures an MSDP peer.
ip msdp sa-filter in	Configures an incoming filter list for SA messages received from the specified MSDP peer.

ip msdp sa-limit

To limit the number of Source-Active (SA) messages from a Multicast Source Discovery Protocol (MSDP) peer that the router will allow in the SA cache, use the **ip msdp sa-limit** command in global configuration mode. To remove this limit, use the **no** form of this command.

ip msdp sa-limit {*peer-name* | *peer-address*} *sa-limit*

no ip msdp sa-limit {*peer-name* | *peer-address*} *sa-limit*

Syntax Description

peer-name | *peer-address*	Domain Name System (DNS) name or IP address of the router that is to be the MSDP peer.
sa-limit	Maximum number of SA messages from an MSDP peer allowed in the SA cache.

Defaults

By default, no SA message limit is set.

Command Modes

Global configuration

Command History

Release	Modification
12.1(7)	This command was introduced.

Usage Guidelines

Use this command to prevent distributed denial of service attacks. We recommend configuring this command on all MSDP peer connections.

The output of the **show ip msdp count**, **show ip msdp peer**, and **show ip msdp summary** commands will display the number of SA messages from each MSDP peer that is in the SA cache. If the **ip msdp sa-limit** command is configured, the output of the **show ip msdp peer** command will also display the value of the SA message limit for each MSDP peer.

Examples

The following example configures the SA message limit to 100 for the MSDP peer with IP address 172.16.10.2:

```
ip msdp sa-limit 172.16.10.2 100
```

Related Commands

Command	Description
show ip msdp count	Displays the number of sources and groups originated in MSDP SA messages.
show ip msdp peer	Displays detailed information about the MSDP peer.
show ip msdp summary	Displays MSDP peer status.

ip msdp sa-request

To configure the router to send Source-Active (SA) request messages to the Multicast Source Discovery Protocol (MSDP) peer when a new joiner from the group becomes active, use the **ip msdp sa-request** command in global configuration mode. To prevent this action, use the **no** form of this command.

ip msdp sa-request {*peer-address* | *peer-name*}

no ip msdp sa-request {*peer-address* | *peer-name*}

Syntax Description

peer-address | *peer-name*	IP address or name of the MSDP peer from which the local router requests SA messages when a new joiner for the group becomes active.

Defaults

The router does not send SA request messages to the MSDP peer.

Command Modes

Global configuration

Command History

Release	Modification
12.0(7)T	This command was introduced.

Usage Guidelines

By default, the router does not send any SA request messages to its MSDP peers when a new member joins a group and wants to receive multicast traffic. The new member waits to receive any SA messages that eventually arrive.

Use this command if you want a new member of a group to learn the current, active multicast sources in a connected Protocol Independent Multicast sparse mode (PIM-SM) domain that are sending to a group. The router will send SA request messages to the specified MSDP peer when a new member joins a group. The peer replies with the information in its SA cache. If the peer does not have a cache configured, this command provides nothing.

An alternative to this command is using the **ip msdp cache-sa-state** command to have the router cache messages.

Examples

The following example configures the router to send SA request messages to the MSDP peer at 172.16.10.2:

```
ip msdp sa-request 172.16.10.2
```

Related Commands

Command	Description
ip msdp cache-sa-state	Enables the router to create SA state.
ip msdp peer	Configures an MSDP peer.

ip msdp shutdown

To administratively shut down a configured Multicast Source Discovery Protocol (MSDP) peer, use the **ip msdp shutdown** command in global configuration mode. To bring the peer back up, use the **no** form of this command.

ip msdp shutdown {*peer-address* | *peer-name*}

no ip msdp shutdown {*peer-address* | *peer-name*}

Syntax Description

peer-address | *peer-name*	IP address or name of the MSDP peer to shut down.

Defaults

No action is taken to shut down an MSDP peer.

Command Modes

Global configuration

Command History

Release	Modification
12.0(7)T	This command was introduced.

Examples

The following example shuts down the MSDP peer at IP address 192.168.7.20:

```
ip msdp shutdown 192.168.7.20
```

Related Commands

Command	Description
ip msdp peer	Configures an MSDP peer.

ip msdp timer

To adjust the interval at which Multicast Source Discovery Protocol (MSDP) peers will wait after peering sessions are reset before attempting to reestablish the peering sessions, use the **ip msdp timer** command in global configuration mode. To restore the default value, use the **no** form of this command.

ip msdp [**vrf** *vrf-name*] **timer** *connection-retry-interval*

no ip msdp [**vrf** *vrf-name*] **timer**

Syntax Description

vrf *vrf-name*	(Optional) Sets the connection-retry interval for MSDP peers associated with the multicast VPN routing and forwarding (MVRF) instance specified for the *vrf-name* argument.
connection-retry-interval	Interval, in seconds, at which MSDP peers will wait after peering sessions are reset before attempting to reestablish the peering sessions. The range is from 1 to 60 seconds. The default is 30 seconds.

Command Default

An MSDP peer will wait 30 seconds after a peering session is reset before attempting to reestablish the peering session with any peer.

Command Modes

Global configuration

Command History

Release	Modification
12.1(8a)E4	This command was introduced.
12.2(5)	This command was integrated into Cisco IOS Release 12.2(5).
12.2(27)SBC	This command was integrated into Cisco IOS Release 12.2(27)SBC.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.

Usage Guidelines

Use the **ip msdp timer** command to adjust the interval at which all MSDP peers will wait after peering sessions are reset before attempting to reestablish the peering sessions. This interval is referred to as the connection-retry interval. By default, MSDP peers will wait 30 seconds after is session is reset before attempting to reestablish sessions with other peers. When the **ip msdp timer** command is configured, the configured connection-retry interval applies to all MSDP peering sessions on the router.

In network environments where fast recovery of Source-Active (SA) messages is required (such as in trading floor network environments), you may want to decrease the connection-retry interval to a time value less than the default value of 30 seconds.

Examples

The following example shows how to set the connection-retry interval for all MSDP peers to 20 seconds:

```
ip msdp timer 20
```

Related Commands

Command	Description
ip msdp peer	Configures an MSDP peer.

ip msdp ttl-threshold

To limit which multicast data packets are sent in Source-Active (SA) messages to a Multicast Source Discovery Protocol (MSDP) peer, use the **ip msdp ttl-threshold** command in global configuration mode. To restore the default value, use the **no** form of this command.

ip msdp ttl-threshold {*peer-address* | *peer-name*} *ttl-value*

no ip msdp ttl-threshold {*peer-address* | *peer-name*}

Syntax Description

peer-address | *peer-name*	IP address or name of the MSDP peer to which the *ttl* argument applies.
ttl-value	Time-to-live (TTL) value. The default value of the *ttl* argument is 0, meaning all multicast data packets are forwarded to the peer until the TTL is exhausted.

Defaults

ttl-value: 0

Command Modes

Global configuration

Command History

Release	Modification
12.0(7)T	This command was introduced.

Usage Guidelines

This command limits which multicast data packets are sent in data-encapsulated SA messages. Only multicast packets with an IP header TTL greater than or equal to the *ttl* argument are sent to the MSDP peer specified by the IP address or name.

Use this command if you want to use TTL to scope your multicast data traffic. For example, you could limit internal traffic to a TTL of 8. If you want other groups to go to external locations, you would need to send those packets with a TTL greater than 8.

Examples

The following example configures a TTL threshold of 8 hops:

```
ip msdp ttl-threshold 192.168.1.5 8
```

Related Commands

Command	Description
ip msdp peer	Configures an MSDP peer.

show ip msdp count

To display the number of sources and groups originated in Multicast Source Discovery Protocol (MSDP) Source-Active (SA) messages and the number of SA messages from an MSDP peer in the SA cache, use the **show ip msdp count** command in EXEC mode.

show ip msdp count [*as-number*]

Syntax Description

as-number	(Optional) Displays the number of sources and groups originated in SA messages from the specified autonomous system number.

Command Modes

EXEC

Command History

Release	Modification
12.0(7)T	This command was introduced.
12.1(7)	This command was modified to display information about the number of SA messages from each MSDP peer in the SA cache.

Usage Guidelines

The **ip msdp cache-sa-state** command must be configured for this command to have any output.

Examples

The following is sample output of the **show ip msdp count** command:

```
Router# show ip msdp count

SA State per Peer Counters, <Peer>: <# SA learned>
 192.135.250.116: 24
 144.228.240.253: 3964
 172.17.253.19: 10
 172.17.170.110: 11

SA State per ASN Counters, <asn>: <# sources>/<# groups>
 Total entries: 4009
 ?: 198/98, 9: 1/1, 14: 107/57, 17: 7/5
 18: 4/3, 25: 23/17, 26: 39/27, 27: 2/2
 32: 19/7, 38: 2/1, 52: 4/4, 57: 1/1
 68: 4/4, 73: 12/8, 81: 19/1, 87: 9/6
 .
 .
 .
```

Table 21 describes the significant fields shown in the display.

Table 21 show ip msdp count Field Descriptions

Field	Description
192.135.250.116: 24	MSDP peer with IP address 192.135.250.116: 24 SA messages from the MSDP peer in the SA cache.
Total entries	Total number of SA entries in the SA cache.
9: 1/1	Autonomous system 9: 1 source/1 group

Related Commands

Command	Description
ip msdp cache-sa-state	Enables the router to create SA state.

show ip msdp peer

To display detailed information about the Multicast Source Discovery Protocol (MSDP) peer, use the **show ip msdp peer** command in EXEC mode.

show ip msdp peer [*peer-address* | *peer-name*] [**accepted-sas** | **advertised-sas**]

Syntax Description

peer-address | *peer-name*	(Optional) Domain Name System (DNS) name or IP address of the MSDP peer for which information is displayed.
accepted-sas	(Optional) SAs accepted from this peer.
advertised-sas	(Optional) SAs advertised to this peer.

Command Modes

EXEC

Command History

Release	Modification
12.0(7)T	This command was introduced.
12.1(7)	This command was modified to display information about the SA message limit configured using the the **ip msdp sa-limit** command.

Examples

The following is sample output of the **show ip msdp peer** command:

```
Router# show ip msdp peer 192.135.250.116

MSDP Peer 192.135.250.116 (rtp5-rp1.cisco.com), AS 109 (configured AS)
Description:
 Connection status:
   State: Up, Resets: 9, Connection source: Loopback2 (204.69.199.17)
   Uptime(Downtime): 1d10h, Messages sent/received: 436765/429062
   Output messages discarded: 0
   Connection and counters cleared 1w2d     ago
 SA Filtering:
   Input (S,G) filter: none, route-map: none
   Input RP filter: none, route-map: none
   Output (S,G) filter: none, route-map: none
   Output RP filter: none, route-map: none
 SA-Requests:
   Input filter: none
   Sending SA-Requests to peer: disabled
 Peer ttl threshold: 0
 SAs learned from this peer: 32, SAs limit: 500
 Input queue size: 0, Output queue size: 0
```

Table 22 describes the significant fields shown in the display.

Table 22 show ip msdp peer Field Descriptions

Field	Description
MSDP Peer	IP address of the MSDP peer.
AS	Autonomous system to which the MSDP peer belongs.
State:	State of the MSDP peer.
Connection source:	Interface used to obtain the IP address for the TCP local connection address.
Uptime(Downtime):	Days and hours the MSDP peer is up or down. If the time is less than 24 hours, it is shown in terms of hours:minutes:seconds.
Messages sent/received:	Number of SA messages sent to the MSDP peer/number of SA messages received from the MSDP peer.
SA Filtering:	Information regarding access list filtering of SA input and output, if any.
SA-Requests:	Information regarding access list filtering of SA requests, if any.
SAs learned from this peer:	Number of SA messages from the MSDP peer in the SA cache.
SAs limit:	SA message limit for this MSDP peer.

Related Commands

Command	Description
ip msdp peer	Configures an MSDP peer.

show ip msdp sa-cache

To display the (S,G) state learned from Multicast Source Discovery Protocol (MSDP) peers, use the **show ip msdp sa-cache** command in user EXEC or privileged EXEC mode.

show ip msdp [**vrf** *vrf-name*] **sa-cache** [*group-address* | *source-address* | *group-name* | *source-name*] [*group-address* | *source-address* | *group-name* | *source-name*] [*as-number*] [**rejected-sa** [**detail**] [**read-only**]]

Syntax Description

vrf	(Optional) Supports the multicast VPN routing and forwarding (VRF) instance.
vrf-name	(Optional) Name assigned to the VRF.
group-address | *source-address* | *group-name* | *source-name*	(Optional) Group address, source address, group name, or source name of the group or source about which (S, G) state information is displayed. If two addresses or names are specified, an (S, G) entry corresponding to those addresses is displayed. If only one group address is specified, all sources for that group are displayed. If no options are specified, the entire Source-Active (SA) cache is displayed.
as-number	(Optional) Autonomous system (AS) number from which the SA message originated.
rejected-sa	(Optional) Displays the most recently received and rejected MSDP SA messages.
detail	(Optional) Displays detailed information about the IP address of the MSDP peer that sent the SA message and the reason that the SA message was rejected.
read-only	(Optional) Checkpoints the rejected SA cache. Once checkpointed, the rejected SA cache is emptied.

Command Modes

User EXEC
Privileged EXEC

Command History

Release	Modification
12.0(7)T	This command was introduced.
12.0(23)S	The **vrf** keyword and *vrf-name* argument were added.
12.2(13)T	The **vrf** keyword and *vrf-name* argument were added.

Usage Guidelines

By default, (S,G) state is cached.

Rejected SA messages are cached only if the **ip msdp cache-rejected-sa** command is configured.

Use the **show ip msdp sa-cache** with the optional **rejected-sa** keyword to display SA messages stored in the rejected SA cache. When the **detail** keyword is added to the command string, the output includes the IP address of the MSDP peer router that sent the SA message and the reason that the SA message was rejected.

When the optional **read-only** keyword is added to the command string, the router checkpoints the rejected SA cache, which ensures that a consistent snapshot of the rejected SA cache is displayed in the output. After being checkpointed, the rejected SA cache is cleared.

Note Checkpointing the rejected SA cache requires that the router make a second copy of the rejected SA cache, which could cause the command to fail if the router is low on memory.

When the optional **read-only** keyword is not added to the command string, the router displays rejected MSDP SA messages out of the active rejected SA cache, which could result in inconsistent display output if rejected SA message entries are overwritten by rejected SA message entries that are captured as the output is being processed for display.

Examples

The following is sample output from the **show ip msdp sa-cache** command:

```
Router# show ip msdp sa-cache

MSDP Source-Active Cache - 2398 entries
(172.16.41.33, 238.105.148.0), RP 172.16.3.111, MBGP/AS 704, 2d10h/00:05:33
(172.16.112.8, 224.2.0.1), RP 192.168.200.65, MBGP/AS 10888, 00:03:21/00:02:38
(172.16.10.13, 227.37.32.1), RP 192.168.3.92, MBGP/AS 704, 05:22:20/00:03:32
(172.16.66.18, 233.0.0.1), RP 192.168.3.111, MBGP/AS 704, 2d10h/00:05:35
(172.16.66.148, 233.0.0.1), RP 192.168.3.111, MBGP/AS 704, 2d10h/00:05:35
(172.16.10.13, 227.37.32.2), RP 192.168.3.92, MBGP/AS 704, 00:44:30/00:01:31
(172.16.70.203, 224.2.236.2), RP 192.168.253.7, MBGP/AS 3582, 02:34:16/00:05:49
(172.18.42.104, 236.195.56.2), RP 192.168.3.92, MBGP/AS 704, 04:21:13/00:05:22
(172.16.10.13, 227.37.32.3), RP 192.168.3.92, MBGP/AS 704, 00:44:30/00:02:31
(172.18.15.43, 224.0.92.3), RP 192.168.200.65, MBGP/AS 10888, 6d09h/00:05:35
(172.18.15.111, 224.0.92.3), RP 192.168.200.65, MBGP/AS 10888, 16:18:08/00:05:35
(172.18.21.45, 224.0.92.3), RP 192.168.200.65, MBGP/AS 10888, 16:18:08/00:05:35
(172.18.15.75, 224.0.92.3), RP 192.168.200.65, MBGP/AS 10888, 08:40:52/00:05:35
(172.18.15.100, 224.0.92.3), RP 192.168.200.65, MBGP/AS 10888, 08:40:52/00:05:35
(172.16.10.13, 227.37.32.6), RP 192.168.3.92, MBGP/AS 704, 00:45:30/00:05:31
(172.18.41.33, 224.247.228.10), RP 192.168.3.111, MBGP/AS 704, 2d10h/00:05:35
(172.18.222.210, 224.2.224.13), RP 192.168.3.92, MBGP/AS 704, 01:51:53/00:05:22
(172.18.41.33, 229.231.124.13), RP 192.168.3.111, MBGP/AS 704, 2d10h/00:05:33
(172.18.32.138, 224.2.200.23), RP 192.168.253.7, MBGP/AS 3582, 21:33:40/00:05:49
(172.18.75.244, 224.2.200.23), RP 192.168.253.7, MBGP/AS 3582, 21:33:40/00:05:49
```

Table 23 describes the significant fields shown in the display.

Table 23 show ip msdp sa-cache Field Descriptions

Field	Description
(172.16.41.33, 238.105.148.0)	The first address (source) is sending to the second address (group).
RP 172.16.3.111	IP address of the Rendezvous point (RP) where the SA message originated.

Table 23 show ip msdp sa-cache Field Descriptions (continued)

Field	Description
MBGP/AS 704	The RP from which the SA message originated is in AS 704 according to multiprotocol Border Gateway Protocol (BGP).
2d10h/00:05:33	The route has been cached for 2 days and 10 hours. If no SA message is received in 5 minutes and 33 seconds, the route will be removed from the SA cache.

The following is sample output from the **show ip msdp sa-cache** command with the **rejected**, **detail**, and **read-only** keywords specified:

```
Router# show ip msdp sa-cache rejected detail read-only

MSDP Rejected SA Cache
 35 rejected SAs received over 02:50:01, cache size: 50 entries
 Timestamp (source, group)
 2832.248, (10.10.10.4, 227.7.7.12), RP: 10.10.10.4, Peer: 10.10.10.4,
     Reason: sa-limit-exceeded
 2915.232, (10.10.10.8, 224.1.1.1), RP: 10.11.11.11, Peer: 10.10.10.8,
     Reason: in-filter
 3509.584, (10.12.12.2, 225.5.5.5), RP: 10.15.15.1, Peer: 10.12.12.2,
           Reason: rpf-fail
 .
 .
 .
```

Table 24 describes the significant fields shown in the display.

Table 24 show ip msdp sa-cache rejected detail read-only Field Descriptions

Field	Description
35 rejected SAs received over 02:50:01	The number of rejected SA message entries received in the length of time indicated in HH:MM:SS.
cache size:	Indicates the size of the rejected SA cache. This field is controlled by the **ip msdp rejected-sa-cache** command. If the rejected SA cache overflows, entries are overwritten, starting from the first entry.
Timestamp	Indicates the router uptime in *seconds.milliseconds.*
(source, group)	The (S, G) information advertised in the rejected SA message.
RP:	Indicates the IP address of the Rendezvous Point (RP) that originated the SA message.

Table 24 show ip msdp sa-cache rejected detail read-only Field Descriptions (continued)

Field	Description
Peer:	Indicates the IP address of the MSDP peer that sent the rejected SA message.
Reason:	Indicates the reason that the router rejected the SA message. The possible reasons are as follows: • autorp-group—Indicates that the SA message was rejected because it included one of the two AutoRP groups (224.0.1.39 and 224.0.1.40). • in-filter—Indicates that the SA message was rejected because it was filtered by a configured incoming filter list (configured by the **ip msdp sa-filter in** command). • no-memory—Indicates that the SA message was rejected because the router ran out of memory while allocating storage for the MSDP SA message. • rpf-fail—Indicates that the SA message was rejected because it failed the Reverse Path Forwarding (RPF) check. • rp-filter—Indicates that the SA message was rejected because it was filtered by a configured incoming RP filter list (configured by the **ip msdp sa-filter in** command). • sa-limit-exceeded—Indicates that the SA message was rejected because the maximum number of SA cache entries (controlled by the **ip msdp sa-limit** command) was already exhausted when the SA message was received. • ssm-range—Indicates that the SA message was rejected because it indicated a group in the SSM range.

Related Commands

Command	Description
clear ip msdp sa-cache	Clears MSDP SA cache entries.
ip msdp cache-sa-state	Enables the router to create SA state.

show ip msdp summary

To display Multicast Source Discovery Protocol (MSDP) peer status, use the **show ip msdp summary** command in EXEC mode.

show ip msdp summary

Syntax Description

This command has no arguments or keywords.

Command Modes

EXEC

Command History

Release	Modification
12.0(7)T	This command was introduced.
12.1(7)	This command was modified to display information about the number of SA messages from each MSDP peer in the SA cache.

Examples

The following is sample output of the **show ip msdp summary** command:

```
Router# show ip msdp summary

MSDP Peer Status Summary
Peer Address     AS    State    Uptime/  Reset SA    Peer Name
                                Downtime Count Count
192.135.250.116  109   Up       1d10h    9     111   rtp5-rp1
*144.228.240.253 1239  Up       14:24:00 5     4010  sl-rp-stk
172.17.253.19    109   Up       12:36:17 5     10    shinjuku-rp1
172.17.170.110   109   Up       1d11h    9     12    ams-rp1
```

Table 25 describes the significant fields shown in the display.

Table 25 show ip msdp summary Field Descriptions

Field	Description
Peer Address	IP address of the MSDP peer.
AS	Autonomous system to which the MSDP peer belongs.
State	State of the MSDP peer.
Uptime/Downtime	Days and hours the MSDP peer is up or down, per state shown in the previous column. If the time is less than 24 hours, it is shown in terms of hours:minutes:seconds.
SA Count	Number of SA messages from this MSDP peer in the SA cache.
Peer Name	Name of the MSDP peer.