1 MSDP Commands

Command	Function
clear ip msdp peer	Reset the TCP connection with an MSDP peer and clear statistics about the MSDP peer.
clear ip msdp sa-cache	Clear the SA cache entries.
clear ip msdp statistics	Clear statistics about an MSDP peer.
ip msdp default-peer	Configure a default MSDP peer.
ip msdp description	Add description information for an MSDP peer.
ip msdp filter-sa-request	Filter SA request messages from an MSDP peer.
ip msdp mesh-group	Add an MSDP peer to a mesh group.
ip msdp originator-id	Configure the primary address of a specified interface as the initiator address in SA messages.
ip msdp password peer	Enable the MD5 authentication function on the TCP connection with an MSDP peer.
ip msdp peer connect-source	Add an MSDP peer.
ip msdp redistribute	Control the (S, G) information released on an MSDP device.
ip msdp sa-filter in	Configure an incoming filter of SA messages.
ip msdp sa-filter out	Configure an outgoing filter of SA messages.
ip msdp sa-limit	Define the maximum number of SA cache entries from an MSDP peer.
ip msdp shutdown	Disable the connection with an MSDP peer.
ip msdp timer	Configure a TCP reconnection interval.
ip msdp ttl-threshold	Define the time to live (TTL) value of the multicast packets in SA messages.
ip msdp peer-limit	Define the number of MSDP peers supported on a device.
ip msdp global-sa-limit	Define the SA cache capacity supported on a device.
show ip msdp count	Display the number of sources and number of groups in SA messages and the number of SA cache

	entries from MSDP peers.
show ip msdp mesh-group	Display the information of a mesh group.
show ip msdp peer	Display detailed information about an MSDP peer.
show ip msdp rpf-peer	Display the MSDP RPF peer information corresponding to the address of a specified initiator.
show ip msdp sa-cache	Display the learned (S, G) information.
show ip msdp sa-originated	Display the (S, G) information that meets the redistribution filtering rule and is initiated by the local device.
show ip msdp summary	Display summary information of all MSDP peers.

1.1   clear ip msdp peer

Function

Run the **clear ip msdp peer** command to reset the TCP connection with an MSDP peer and clear statistics about the MSDP peer.

Syntax

clear ip msdp peer *ipv4-peer-address*

Parameter Description

ipv4-peer-address: IPv4 address of an MSDP peer.

Command Modes

Privileged EXEC mode

Default Level

14

Usage Guidelines

"Reset" means canceling and then re-establishing the TCP connection with the MSDP peer.

Examples

The following example resets the TCP connection with the MSDP peer 218.14.5.23 and clears statistics about this MSDP peer.

```
Hostname> enable
Hostname# clear ip msdp peer 218.14.5.23
```

Notifications

N/A

Platform Description

N/A

1.2   clear ip msdp sa-cache

Function

Run the **clear ip msdp sa-cache** command to clear the SA cache entries.

Syntax

clear ip msdp sa-cache [*ipv4-group-address*]

Parameter Description

ipv4-group-address: Address of an IPv4 multicast group.

Command Modes

Privileged EXEC mode

Default Level

14

Usage Guidelines

This command is used to clear the SA cache entries learned from MSDP peers. If no multicast group address is specified, all SA cache entries are cleared.

After the SA cache entries are cleared, the MSDP device needs to re-learn SA messages.

Examples

The following example clears SA cache entries learned from the multicast group 224.1.1.1.

```
Hostname> enable
Hostname# clear ip msdp sa-cache 224.1.1.1
```

Notifications

N/A

Platform Description

N/A

1.3   clear ip msdp statistics

Function

Run the **clear ip msdp statistics** command to clear statistics about an MSDP peer.

Syntax

clear ip msdp statistics [*ipv4-peer-address*]

Parameter Description

ipv4-peer-address: IPv4 address of an MSDP peer.

Command Modes

Privileged EXEC mode

Default Level

14

Usage Guidelines

This command is used to refresh the statistics about an MSDP peer without resetting the TCP connection with the MSDP peer, including MSDP peer information, resetting information, and I/O information.

Examples

The following example clears the statistics about the MSDP peer 61.83.1.52.

```
Hostname> enable
Hostname# clear ip msdp statistics 61.83.1.52
```

Notifications

N/A

Platform Description

N/A

1.4 ip msdp default-peer

Function

Run the **ip msdp default-peer** command to configure a default MSDP peer.

Run the **no** form of this command to remove this configuration.

Run the **default** form of this command to restore the default configuration.

No default MSDP peer is configured by default.

Syntax

ip msdp default-peer *ipv4-peer-address* [**prefix-list** *prefix-list-name*]

no ip msdp default-peer *ipv4-peer-address*

default ip msdp default-peer *ipv4-peer-address*

Parameter Description

ipv4-peer-address: IPv4 address of an MSDP peer.

prefix-list *prefix-list-name*: Specifies a prefix list.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

SA messages from MSDP peers may fail the peer RPF check and then be discarded. If an MSDP peer is configured as a default MSDP peer, SA messages from this MSDP peer pass the peer RPF check.

If the **prefix-list** keyword parameter is not specified, all SA messages are accepted.

If an inexistent **prefix-list** is specified, all SA messages are accepted.

If an existent **prefix-list** is specified, only the SA messages of RPs specified in this prefix list are accepted.

Examples

The following example configures the MSDP peer 172.16.33.1 as a default peer.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip msdp peer 172.16.33.1 connect-source gigabitethernet 0/1
```

```
Hostname(config)# ip msdp peer 172.16.34.2 connect-source gigabitethernet 0/2
Hostname(config)# ip msdp default-peer 172.16.33.1
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

● **ip prefix-list** (IP routing/routing policy)

● **ip msdp peer connect-source**

1.5 ip msdp description

Function

Run the **ip msdp description** command to add description information for an MSDP peer.

Run the **no** form of command to remove this configuration.

Run the **default** form of this command to restore the default configuration.

No description information is added for an MSDP peer by default.

Syntax

ip msdp description *ipv4-peer-address description*

no ip msdp description *ipv4-peer-address*

default ip msdp description *ipv4-peer-address*

Parameter Description

ipv4-peer-address: IPv4 address of an MSDP peer.

description: Description information. It is a string of 1 to 256 characters.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

The administrator can add description information for MSDP peers so that the MSDP peers can be distinguished with ease.

If description information A is specified for an MSDP peer, the description information of the MSDP peer is displayed as "A".

If no description information is specified for an MSDP peer, the description information of the MSDP peer is displayed as "No description".

Examples

The following example adds customer-a as the description information of the peer 172.17.1.2.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip msdp peer 172.171.1.2 connect-source gigabitethernet 0/1
Hostname(config)# ip msdp description 172.171.1.2 customer-a
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

● **ip msdp peer connect-source**

● **show ip msdp peer**

1.6 ip msdp filter-sa-request

Function

Run the **ip msdp filter-sa-request** command to filter SA request messages from an MSDP peer.

Run the **no** form of this command to remove this configuration.

Run the **default** form of this command to restore the default configuration.

All SA request messages from MSDP peers are received and replied by default.

Syntax

ip msdp filter-sa-request *ipv4-peer-address* [{ **list** *acl-name* | **list** *acl-number* }]

no ip msdp filter-sa-request *ipv4-peer-address*

default ip msdp filter-sa-request *ipv4-peer-address*

Parameter Description

ipv4-peer-address: IPv4 address of an MSDP peer.

list *acl-name*: Uses an IP standard ACL name to define the address range of multicast groups. The value is a case-sensitive string of 1 to 99 characters.

list *acl-number*: Uses an IP standard ACL number to define the address range of multicast groups. The value range is from 1 to 99 or from 1300 to 1999.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

If the **list** keyword parameter is not specified, all the SA request messages are ignored.

If the **list** keyword parameter is specified but this ACL is not configured, all SA request messages are ignored.

If the **list** keyword parameter is specified and this ACL is configured, only the SA request messages allowed by the ACL are accepted, and other SA request messages are ignored.

Examples

The following example uses ACL 1 that defines the valid address range of multicast groups as 224.0.1.0/24 to filter SA request messages from the peer 172.16.223.1.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip msdp peer 172.16.223.1 connect-source gigabitethernet 0/1
Hostname(config)# access-list 1 permit 224.0.1.1 0.0.0.255
Hostname(config)# ip msdp filter-sa-request 172.16.223.1 list 1
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- **ip msdp peer connect-source**
- **show ip msdp sa-cache**

1.7   ip msdp mesh-group

Function

Run the **ip msdp mesh-group** command to add an MSDP peer to a mesh group.

Run the **no** form of this command to remove this configuration.

Run the **default** form of this command to restore the default configuration.

No mesh group is configured and no MSDP peer is added to any mesh group by default.

Syntax

ip msdp mesh-group *mesh-name ipv4-peer-address*

no ip msdp mesh-group *mesh-name ipv4-peer-address*

default ip msdp mesh-group *mesh-name ipv4-peer-address*

Parameter Description

mesh-name: Name of a mesh group. The value is a case-sensitive string of 1 to 256 characters.

ipv4-peer-address: IPv4 address of an MSDP peer.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

An MSDP peer relationship must be established between every two MSDP peers in the same mesh group.

SA messages from members of a mesh group can pass the peer RPF check.

SA messages from a mesh group member are not forwarded to the other members in the same mesh group.

Examples

The following example adds the MSDP peer 192.168.1.3 to a mesh group MSDP-Mesh.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip msdp peer 192.168.1.3 connect-source gigabitethernet 0/1
Hostname(config)# ip msdp mesh-group msdp-mesh 192.168.1.3
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- **ip msdp peer connect-source**
- **show ip msdp mesh-group**

1.8   ip msdp originator-id

Function

Run the **ip msdp originator-id** command to configure the primary address of a specified interface as the initiator address in SA messages.

Run the **no** form of this command to remove this configuration.

Run the **default** form of this command to restore the default configuration.

By default, no primary address of an interface is specified as the initiator address of SA messages.

Syntax

ip msdp originator-id *interface-type interface-number*

no ip msdp originator-id

default ip msdp originator-id

Parameter Description

interface-type interface-number: Interface type and interface number.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

This command configures the primary address of an interface as the initiator address in SA messages. If no IP address is configured for this interface or this interface is down, the RP address configured with PIM, other than the primary IP address of this interface, is used as the initiator address in SA messages.

In anycast RP deployment mode, this command must be used to modify the initiator address in SA messages.

Examples

The following example configures the IP address of Loopback0 as the initiator address in SA messages.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# interface loopback 0
Hostname(config-if-Loopback 0)# exit
Hostname(config)# ip msdp originator-id loopback 0
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.9 ip msdp password peer

Function

Run the **ip msdp password peer** command to enable the MD5 authentication function on the TCP connection with an MSDP peer.

Run the **no** form of this command to disable this function.

Run the **default** form of this command to restore the default configuration.

The MD5 authentication function is disabled by default.

Syntax

ip msdp password peer *ipv4-peer-address* [*encryption-type*] *password-string*

no ip msdp password peer *ipv4-peer-address*

default ip msdp password peer *ipv4-peer-address*

Parameter Description

ipv4-peer-address: IPv4 address of an MSDP peer.

encryption-type: Encryption level. The value is 0 or 7, and the default value is **0**. A larger value means a higher encryption level.

password-string: Cypher used for TCP MD5 authentication. If the encryption level is 0, a cypher can consist of 80 characters at most. If the encryption level is 7, a cypher can consist of 160 characters at most.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

To authenticate the ID of an MSDP peer, enable MD5 authentication on the TCP connection established with this MSDP peer. The MSDP peers must have the consistent configuration, and the cipher must be the same; otherwise, the connection fails.

If the configuration or cipher changes, the local device does not stop the current session, and attempts to use a new cipher to retain the current session until timeout.

ⓘ   **Note**
- If the encryption level is 0, the key set for TCP connection is the original key entered from the console. That is, Orion devices with encryption level 0 can match devices of any other vendor with encryption level 0. When MSDP devices of Orion Networks interact with MSDP devices of another vendor and authentication is needed, encryption level 0 is used.
- If the encryption level is 7, the key set for TCP connection is not the original key entered from the console. The original key string is calculated using the key algorithms of Orion Networks to obtain a new key string. And then, the new key string is set for TCP connection. Therefore, encryption level 7 boasts higher security. Encryption level 7 of Orion Networks is supported on any Orion device. However, devices of Orion Networks may not interact with devices of any other vendor in this case. This is because the key algorithms of each vendor are private and not publicized.

● If the encryption level is specified as 7, the length of the entered ciphertext string must be an even number equal to or greater than four.

Examples

The following example configures the MD5 cypher of TCP connection with the peer 10.32.43.144 as test.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip msdp peer 10.32.43.144 connect-source gigabitethernet 0/1
Hostname(config)# ip msdp password peer 10.32.43.144 0 test
```

Notifications

If MD5 authentication is enabled on the local device but not enabled on the MSDP peer, the following notification will be displayed:

```
%TCP-BADAUTH: MD5 digest NOT expected but found (200.200.200.6, 39996)-
>(200.200.200.16, 639)
```

If the MD5 cypher configured on the local device is inconsistent with that configured on the MSDP peer, the following notification will be displayed:

```
%TCP-BADAUTH: MD5 digest failed for (200.200.200.6, 12302)->(200.200.200.16, 639)
```

Common Errors

N/A

Platform Description

N/A

Related Commands

● **ip msdp peer connect-source**
● **show ip msdp summary**

1.10   ip msdp peer connect-source

Function

Run the **ip msdp peer connect-source** command to add an MSDP peer.

Run the **no** form of this command to remove this configuration.

Run the **default** form of this command to restore the default configuration.

No MSDP peer is added by default.

Syntax

ip msdp peer *ipv4-peer-address* **connect-source** *interface-type interface-number*

no ip msdp peer *ipv4-peer-address*

default ip msdp peer *ipv4-peer-address*

Parameter Description

ipv4-peer-address: IPv4 address of an MSDP peer. The MSDP peer uses this IPv4 address to establish a TCP connection with the local device.

interface-type interface-number: Type and number of a local interface. A loopback interface is recommended. The local device uses the primary IPv4 address of this interface to establish a TCP connection with the MSDP peer. If no IPv4 address is configured for this interface or the interface is down, the MSDP peer relationship cannot be established.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

A TCP connection is established between the local device and the MSDP peer.

This command configures the connection only on the local device. The same settings must be configured on the MSDP peer.

Examples

The following example uses the IP address of loopback 0 to establish an MSDP peer relationship with 192.168.5.1.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# interface loopback 0
Hostname(config-if-Loopback 0)# exit
Hostname(config)# ip msdp peer 192.168.5.1 connect-source loopback 0
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

● **show ip msdp peer**

● **show ip msdp summary**

1.11   ip msdp redistribute

Function

Run the **ip msdp redistribute** command to control the (S, G) information released on an MSDP device.

Run the **no** form of this command to remove this configuration.

Run the **default** form of this command to restore the default configuration.

All (S, G) information registered on the local RP is released on the MSDP device by default.

Syntax

ip msdp redistribute [{ **list** *acl-name* | **list** *acl-number* } | **route-map** *route-map-name*] *

no ip msdp redistribute

default ip msdp redistribute

Parameter Description

list *acl-name*: Uses an IP extended ACL name to define the valid address range of (S, G) information. The value is a case-sensitive string of 1 to 99 characters.

list *acl-number*: Uses an IP extended ACL number to define the valid address range of (S, G) information. The value range is from 100 to 199 or from 2000 to 2699.

route-map *route-map-name*: Uses a route map to define the valid address range of (S, G) information.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

The **ip msdp redistribute** command is also referred to as redistribution filter. After this command is configured, only allowed (S, G) information of the local or other domains can pass filtering on the MSDP device.

- If the **list** keyword parameter is specified, only the (S, G) information matching this ACL is released.

- If the **route-map** keyword parameter is specified, only the (S, G) information matching this route map is released.

- If both the parameters are specified, only the (S, G) information matching the ACL and route map is released.

- If no parameter is specified, no (S, G) information is released.

The methods of associating the redistribution filter with the route map are as follows:

- If the applied *route-map* does not exist, all multicast source information is filtered out.

- If BGP is not enabled on the local device, all multicast source information is filtered out.

Based on the optimal route, the AS path of a specified address is calculated. For the address of an external AS, the AS path is obtained based on the optimal route. For the address of a local AS, an AS path that includes the local AS is constructed. The AS path result is filtered based on the route map applied to the AS path.

The local device is RP on which BGP is enabled and the AS number is set to 100. The route map associated with redistribution is named re-route-map. To enable multicast source information to be redistributed in the

local AS, include the AS path matching rule of the local AS in the route map. Some configuration of the route map and AS path ACL is as follows:

```
route-map re-route-map permit 10
match as-path 1
ip as-path access-list 1 permit 100
```

Examples

The following example uses ACL 100 to define the (S, G) information that can pass filtering by an MSDP device and sets the address range of the multicast source to 200.200.200.0/24 and the address range of the multicast group to 225.1.1.0/24.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip access-list extended 100
Hostname(config-ext-nacl)# permit ip 200.200.200.0 0.0.0.255 225.1.1.0 0.0.0.255
Hostname(config)# ip msdp redistribute list 100
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- **show ip msdp sa-cache**

- **show ip msdp sa-originated**

1.12   ip msdp sa-filter in

Function

Run the **ip msdp sa-filter in** command to configure an incoming filter of SA messages.

Run the **no** form of this command to remove this configuration.

Run the **default** form of this command to restore the default configuration.

All SA messages from MSDP peers are received by default.

Syntax

ip msdp sa-filter in *ipv4-peer-address* [{ **list** *acl-name* | **list** *acl-number* } | **route–map** *route-map-name* | { **rp-list** *acl-name* | **rp-list** *acl-number* } | **rp-route-map** *rp-route-map-name*] *

no ip msdp sa-filter in *ipv4-peer-address*

default ip msdp sa-filter in *ipv4-peer-address*

Parameter Description

ipv4-peer-address: IPv4 address of an MSDP peer.

list *acl-name*: Uses an IP extended ACL name to define the (S, G) information that can pass filtering. The value is a case-sensitive string of 1 to 99 characters.

list *acl- number*: Uses an IP extended ACL number to define the (S, G) information that can pass filtering. The value range is from 100 to 199 or from 2000 to 2699.

route-map *route-map-name*: Specifies the route map name of (S, G) information. The (S, G) information can pass filtering only when the AS path of the source route matches the AS path of this route map.

rp-list *acl-name*: Uses an IP standard ACL name to define the RP range in the (S, G) information that can pass filtering. The value is a case-sensitive string of 1 to 99 characters.

rp-list *acl-number*: Uses an IP standard ACL number to define the RP range in the (S, G) information that can pass filtering. The value range is from 1 to 99.

rp-route-map *rp-route-map-name*: Specifies the route map name of an RP. The (S, G) information can pass filtering only when the AS path of the RP route matches the AS path of this route map.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

If this command is configured, but no ACL or route map is specified, all incoming SA messages are filtered out.

If only one keyword (**list** or **route-map**) is specified and the (S, G) information in an SA message meets the rule specified by the keyword, the (S, G) is received.

If only one keyword (**rp-list** or **rp-route-map**) is specified and the RP address in an SA message meets the rule specified by this keyword, this SA message is received.

If two or more of the keywords (including **list**, **route-map, rp-list**, and **rp-route-map**) are specified and the (S, G) information in an SA message meets the rules specified by all the keywords, this SA message is received.

The methods of associating the incoming SA message filter with the route map are as follows:

(1) If the applied *route-map* does not exist, all multicast source information is filtered out.

(2) If BGP is not enabled on the local device, all multicast source information is filtered out.

(3) Based on the optimal route, the AS path of a specified address is calculated. For the address of an external AS, the AS path is obtained based on the optimal route. For the address of a local AS, an AS path that includes the local AS is constructed. The AS path result is filtered based on the route map applied to the AS path.

Examples

The following example filters all SA messages from the peer 10.234.1.43.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip msdp peer 10.234.1.43 connect-source gigabitethernet 0/1
Hostname(config)# ip msdp sa-filter in 10.234.1.43
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- **[ip msdp peer connect-source](#)**
- **[show ip msdp sa-cache](#)**

1.13   ip msdp sa-filter out

Function

Run the **ip msdp sa-filter out** command to configure an outgoing filter of SA messages.

Run the **no** form of this command to remove this configuration.

Run the **default** form of this command to restore the default configuration.

By default, all SA messages are forwarded to MSDP peers.

Syntax

ip msdp sa-filter out *ipv4-peer-address* [**list** { *acl-name* | *acl-number* } | **route–map** *route-map-name* | **rp-list** { *acl-name* | *acl-number* } | **rp-route-map** *rp-route-map*] *

no ip msdp sa-filter out *ipv4-peer-address*

default ip msdp sa-filter out *ipv4-peer-address*

Parameter Description

ipv4-peer-address: IPv4 address of an MSDP peer.

list *acl-name*: Uses an IP extended ACL name to define the (S, G) information that can pass filtering. The value is a case-sensitive string of 1 to 99 characters.

list *acl- number*: Uses an IP extended ACL number to define the (S, G) information that can pass filtering. The value range is from 100 to 199 or from 2000 to 2699.

route-map *route-map-name*: Specifies the route map name of (S, G) information. The (S, G) information can pass filtering only when the AS path of the source route matches the AS path of this route map.

rp-list *acl-name*: Uses an IP standard ACL name to define the RP range in the (S, G) information that can pass filtering. The value is a case-sensitive string of 1 to 99 characters.

rp-list *acl-number*: Uses an IP standard ACL number to define the RP range in the (S, G) information that can pass filtering. The value range is from 1 to 99.

rp-route-map *rp-route-map-name*: Specifies the route map name of an RP. The (S, G) information can pass filtering only when the AS path of the RP route matches the AS path of this route map.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

If this command is configured, but no ACL or route map is specified, no SA message is sent to this MSDP peer.

If only one of the keywords (including **list**, **route-map**, **rp-list**, and **rp-route-map**) is specified and the (S, G) information in an SA message meets the rule specified by this keyword, this SA message is forwarded to this MSDP peer.

If two or more of the keywords (including **list**, **route-map**, **rp-list**, and **rp-route-map**) are specified and the (S, G) information in an SA message meets the rules specified by these keywords, this SA message is forwarded to this MSDP peer.

The methods of associating the outgoing SA message filter with the route map are as follows:

(1) If the applied *route-map* does not exist, all multicast source information is filtered out.

(2) If BGP is not enabled on the local device, all multicast source information is filtered out.

(3) Based on the optimal route, the AS path of a specified address is calculated. For the address of an external AS, the AS path is obtained based on the optimal route. For the address of a local AS, an AS path that includes the local AS is constructed. The AS path result is filtered based on the route map applied to the AS path.

Examples

The following example uses ACL 100 to define the multicast source information sent to the peer 10.234.1.43, and sets the address range of the multicast source to 10.211.0.0/16 and the address range of the multicast group to 224.12.0.0/16.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# access-list 100 permit ip 10.211.0.0 0.0.255.255 224.12.0.0
0.0.255.255
Hostname(config)# ip msdp peer 10.234.1.43 connect-source gigabitethernet 0/1
Hostname(config)# ip msdp sa-filter out 10.234.1.43 list 100
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- **ip msdp peer connect-source**
- **show ip msdp sa-cache**

1.14   ip msdp sa-limit

Function

Run the **ip msdp sa-limit** command to define the maximum number of SA cache entries from an MSDP peer.

Run the **no** form of this command to remove this configuration.

Run the **default** form of this command to restore the default configuration.

The maximum number of SA cache entries from an MSDP peer is not specified by default.

Syntax

ip msdp sa-limit *ipv4-peer-address sa-limit*

no ip msdp sa-limit *ipv4-peer-address*

default ip msdp sa-limit *ipv4-peer-address*

Parameter Description

ipv4-peer-address: IPv4 address of an MSDP peer.

sa-limit: Maximum number of SA cache entries. The value range is from 1 to 4096.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

This command is configured to prevent SA message flooding from an MSDP peer.

After the local device learns A SA entries from an MSDP peer and the maximum number of SA cache entries set for this MSDP peer is B, if the value of A is greater than that of B, the SA entries learned from this MSDP peer are not cleared immediately. Rather, the number of SA entries automatically drops to B based on the SA entry aging mechanism (no more than 135 seconds). This command does not take effect immediately, and it is used to retain valid multicast source information as much as possible and improve the network efficiency. To immediately clear the SA entries from this MSDP peer, you can use this command together with the **clear ip msdp sa-cache** command.

Examples

The following example sets the limit of SA entries from the MSDP peer 172.16.3.1 to 100.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip msdp peer 172.16.3.1 connect-source gigabitethernet 0/1
Hostname(config)# ip msdp sa-limit 172.16.3.1 100
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- **ip msdp peer connect-source**

- **show ip msdp sa-cache**

1.15   ip msdp shutdown

Function

Run the **ip msdp shutdown** command to disable the connection with an MSDP peer.

Run the **no** form of this command to remove this configuration.

Run the **default** form of this command to restore the default configuration.

The connection with an MSDP peer is enabled by default.

Syntax

ip msdp shutdown *ipv4-peer-address*

no ip msdp shutdown *ipv4-peer-address*

default ip msdp shutdown *ipv4-peer-address*

Parameter Description

ipv4-peer-address: IPv4 address of an MSDP peer.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

This command disables only the TCP connection with an MSDP peer, but does not delete this MSDP peer or clear configuration of this MSDP peer.

Examples

The following example disables the connection with the MSDP peer 192.168.7.20.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip msdp shutdown 192.168.7.20
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- **show ip msdp summary**

1.16   ip msdp timer

Function

Run the **ip msdp timer** command to configure a TCP reconnection interval.

Run the **no** form of this command to remove this configuration.

Run the **default** form of this command to restore the default configuration.

The default TCP reconnection interval is **30** seconds.

Syntax

ip msdp timer *interval*

no ip msdp timer

default ip msdp timer

Parameter Description

interval: TCP reconnection interval, in seconds. The value range is from 1 to 60.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

Within the TCP reconnection interval, the MSDP peer on the proactive connection side can initiate at most one TCP connection. In some application scenarios, you can shorten the TCP reconnection interval to accelerate convergence of the MSDP peer relationship.

Examples

The following example sets the TCP reconnection interval to 20 seconds.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip msdp timer 20
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- **[ip msdp shutdown](#)**

1.17   ip msdp ttl-threshold

Function

Run the **ip msdp ttl-threshold** command to define the time to live (TTL) value of the multicast packets in SA messages.

Run the **no** form of this command to remove this configuration.

Run the **default** form of this command to restore the default configuration.

The TTL value of the multicast packets in SA messages is not defined by default.

Syntax

ip msdp ttl-threshold *ipv4-peer-address ttl-value*

no ip msdp ttl-threshold *ipv4-peer-address*

default ip msdp ttl-threshold *ipv4-peer-address*

Parameter Description

ipv4-peer-address: IPv4 address of an MSDP peer.

ttl-value: TTL value. The value range is from 0 to 255.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

This command controls the sending of multicast packets encapsulated in SA messages. A multicast packet is sent to the MSDP peer only when the TTL value in the IP header of the multicast packet is equal to or greater than the preset TTL threshold. If the TTL value in the IP header of the multicast packet is smaller than the preset TTL threshold, the multicast packet is removed from the SA message and discarded before the SA message is sent to the MSDP peer.

This command affects the sending of multicast packets in SA messages, and does not affect the sending of (S, G) information in the SA messages.

Examples

The following example sets the TTL value of the peer 192.168.10.1 to 8.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip msdp peer 192.168.10.1 connect-source gigabitethernet 0/1
Hostname(config)# ip msdp ttl-threshold 192.168.10.1 8
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- **ip msdp peer connect-source**

1.18   ip msdp peer-limit

Function

Run the **ip msdp peer-limit** command to define the number of MSDP peers supported on a device.

Run the **no** form of this command to remove this configuration.

Run the **default** form of this command to restore the default configuration.

The maximum number of MSDP peers supported on a device is **64** by default.

Syntax

ip msdp peer-limit *peer-limit*

no ip msdp peer-limit

default ip msdp peer-limit

Parameter Description

peer-limit: Maximum number of MSDP peers supported on a device. The value range is from 1 to 128.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

This command is used to configure the maximum number of MSDP peers supported on a device.

When this command is configured, if the number of MSDP peers on the device exceeds the value to be configured, a prompt message is displayed indicating configuration failure. You need to delete some peers to ensure that the configuration can succeed.

Examples

The following example sets the number of MSDP peers supported on a device to 128.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip msdp peer-limit 128
```

Notifications

If the number of MSDP peers on the device exceeds the value to be configured, the configuration fails.

When the configured number of MSDP peers on a device is 80 and there are 85 MSDP peers existing on the device, the following notification will be displayed. In this case, you need to delete at least five MSDP peers to make the configuration succeed.

```
%% Current number of msdp peers(85) exceeds configured peer limit (80).
```

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.19   ip msdp global-sa-limit

Function

Run the **ip msdp global-sa-limit** command to define the SA cache capacity supported on a device.

Run the **no** form of this command to remove this configuration.

Run the **default** form of this command to restore the default configuration.

The default SA cache capacity supported on a device is **1024**.

Syntax

ip msdp global-sa-limit *sa-limit*

no ip msdp global-sa-limit

default ip msdp global-sa-limit

Parameter Description

sa-limit: SA cache capacity supported on a device. The value range is from 1 to 4096.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

This command is used to adjust the SA cache capacity of a device. You are advised to configure this command when you start the device.

During MSDP running, if the capacity is increased, the adjustment does not affect the SA cache entries that are originally learned.

If the capacity is decreased, all SA cache entries learned and initiated must be deleted and re-learned.

Examples

The following example sets the SA cache capacity supported on a device to 4096.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip msdp global-sa-limit 4096
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.20   show ip msdp count

Function

Run the **show ip msdp count** command to display the number of sources and number of groups in SA messages and the number of SA cache entries from MSDP peers.

Syntax

show ip msdp count [*as-number*]

Parameter Description

as-number: AS number. The value range is from 1 to 4294967295.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example displays the number of sources and number of groups in SA messages and the number of SA cache entries from MSDP peers.

```
Hostname> enable
Hostname# show ip msdp count
SA State per Peer Counters, <Peer>: <# SA learned>
  1.1.1.2          : 0
  100.100.100.14 : 0
  100.100.100.15 : 0
  100.100.100.200: 0
  200.200.200.2  : 2
  200.200.200.3  : 0
  200.200.200.6  : 0
  200.200.200.13 : 0
  200.200.200.66 : 0
SA State per ASN Counters, <asn>: <# sources>/<# groups>
Total entries: 2
100: 1/2
```

Table 1-1Output Fields of the show ip msdp count Command

Field	Description
<Peer>:<# SA learned>	MSDP peer and SA entries learned from this MSDP peer. For example, "200.200.200.200 : 2" indicates that two SA entries are learned from the MSDP peer 200.200.200.200.
<asn>: <# sources>/<# groups>	RP AS and the number of sources and number of groups initiated by the RP. For example, "100 : 1/2" indicates that there are one multicast source and two multicast groups in the RP of AS 100.
Total entries	Number of all SA entries learned from all MSDP peers. For example, "Total entries: 2" indicates that the number of SA entries learned from all MSDP peers is 2.

Notifications

N/A

Platform Description

N/A

1.21   show ip msdp mesh-group

Function

Run the **show ip msdp mesh-group** command to display the information of a mesh group.

Syntax

show ip msdp mesh-group

Parameter Description

N/A

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example displays information of a mesh group.

```
Hostname> enable
Hostname# show ip msdp mesh-group
MSDP peers in each Mesh-group, <Mesh-group name>:<# peers>
msdp-mesh:
  1.1.1.2
  1.1.1.3
```

Table 1-1Output Fields of the `show ip msdp mesh-group` Command

Field	Description
<Mesh-group name>:<# peers>	Name of a mesh group and all MSDP peers in this mesh group. Example: msdp-mesh: 1.1.1.2 1.1.1.3 Indicates a mesh group msdp-mesh and the MSDP peers 1.1.1.2 and 1.1.1.3 in this mesh group.

Notifications

N/A

Platform Description

N/A

1.22   show ip msdp peer

Function

Run the **show ip msdp peer** command to display detailed information about an MSDP peer.

Syntax

show ip msdp peer [*ipv4-peer-address*]

Parameter Description

ipv4-peer-address: IPv4 address of an MSDP peer.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example displays detailed information about the MSDP peer 20.0.0.1.

```
Hostname> enable
Hostname# show ip msdp peer 20.0.0.1
MSDP PEER 20.0.0.1 (No description), AS unknown
  Connection status:
    State: Listen, Resets: 1, Connection source: GigabitEthernet 0/1 (20.0.0.2)
    Uptime(Downtime): 00:00:25, Message sent/received: 13/19
    Input messages discarded: 0
    Connection and counters cleared 00:13:25 ago
    Local Address of connection: 20.0.0.2
    MD5 signature protection on MSDP TCP connection: enabled
  SA Filtering:
    Input (S,G) Access-list filter: None
    Input (S,G) route-map filter: None
    Input RP Access-list filter: None
    Input RP Route-map filter: None
    Output (S,G) Access-list filter: None
    Output (S,G) Route-map filter: None
    Output RP Access-list filter: None
    Output RP Route-map filter: None
  SA-Requests:
    Input filter: None
  Peer ttl threshold: 0
  SAs learned from this peer: 2, SAs limit: No-limit
  Message counters:
```

```
    SA messages discarded: 0

    SA messages in/out: 13/0

    SA Requests discarded/in: 0/0

    SA Responses out: 0

    Data Packets in/out: 6/0
```

Table 1-1Output Fields of the show ip msdp peer Command

Field	Description
MSDP Peer	IP address of an MSDP peer.
AS	AS of MSDP peers. If an AS is unknown, it is displayed as "unknown".
State	State of an MSDP peer.
Connection source	Source interface of a TCP connection and primary IP address of this interface. If no primary IP address is available to this interface, the primary IP address of this interface is displayed as "unknown".
MD5 signature protection on MSDP TCP connection: enabled	If MD5 authentication is enabled on the TCP connection with the MSDP peer, this field is displayed. Otherwise, this field is not displayed.
Peer is member of mesh-group MSDP	If the MSDP peer is added to a mesh group, this field is displayed. Otherwise, this field is not displayed.
Uptime(Downtime)	Uptime and downtime of the MSDP peer.
Messages sent/received	Number of SA messages sent/received to/from the MSDP peer.
SA Filtering	Incoming/Outgoing SA message filtering
SAs learned from this peer	SA messages learned from the MSDP peer.
SAs limit	Maximum number of SA cache entries of the MSDP peer.
Data Packets in/out	Multicast packets in incoming/outgoing SA messages.

Notifications

N/A

Platform Description

N/A

1.23   show ip msdp rpf-peer

Function

Run the **show ip msdp rpf-peer** command to display the MSDP RPF peer information corresponding to the address of a specified initiator.

Syntax

show ip msdp rpf-peer *ipv4-address*

Parameter Description

ipv4-address: IPv4 address of the initiator in an SA message.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example displays the RPF peer information corresponding to the RP address 1.1.1.1.

```
Hostname> enable
Hostname# show ip msdp rpf-peer 1.1.1.1
RPF peer information for 1.1.1.1
RPF peer: 200.200.200.2
RPF rule: Peer is only active peer
RPF route/mask: Not-used
RPF type: Not-used
```

Table 1-1Output Fields of the show ip msdp rpf-peer Command

Field	Description
RPF peer information for	RPF peer information corresponding to a specified RP address.
RPF peer	RPF peer address corresponding to a specified RP address.
RPF rule	Rule used to calculate the RPF peer corresponding to a specified RP address.
RPF route/mask	Network segment and mask corresponding to a specified RP address, used to determine the RPF peer. If the rule used to calculate the RPF peer corresponding to a specified RP address does not contain the routing information, this field is displayed as "Not-used", indicating that the network segment and mask corresponding to the RP address are not used. The rule used in the preceding example is "unique active MSDP peer". The route to the RP address is not used; therefore, this field is displayed as "Not-used".
RPF type	Routing protocol used to calculate the RPF peer corresponding to an RP address. If the rule used to calculate the RPF peer corresponding to a specified RP address does not contain the routing information, this field is displayed as "Not-used", indicating that the

Field	Description
	routing protocol is not used.
	The rule used in the preceding example is "unique active MSDP peer". The route to the RP address is not used; therefore, this field is displayed as "Not-used".

Notifications

N/A

Platform Description

N/A

1.24   show ip msdp sa-cache

Function

Run the **show ip msdp sa-cache** command to display the learned (S, G) information.

Syntax

show ip msdp sa-cache [*ipv4-group-address* | *ipv4-source-address*] [*ipv4-group-address* | *ipv4-source-address*] [*as-number*]

Parameter Description

ipv4-group-address: Address of an IPv4 multicast group.

ipv4- source-address: Address of an IPv4 multicast source.

as-number: Number of an AS in which SA messages are generated. The value range is from 1 to 4294967295.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

If no parameter is specified, all the (S, G) information is displayed by default.

If an address is specified, the device checks whether this address is a unicast or multicast address. If the address is a unicast address, this address is treated as the multicast source (S), and all (S, G) information in which the multicast source is S is displayed. If the address is a multicast address, this address is treated as the multicast group (G), and all (S, G) information in which the multicast group is G is displayed. If this address is neither a unicast nor a multicast address, no information is displayed.

If two addresses are specified, one address is treated as the multicast source (S), and the other as the multicast group (G). If one address is the unicast address, and the other address is the multicast group address, no information is displayed.

Examples

The following example displays the learned (S, G) information.

```
Hostname> enable
Hostname# show ip msdp sa-cache
MSDP Source-Active Cache: 2 entries
  (200.200.200.200, 227.1.2.2), RP: 20.20.20.20, (M)BGP/AS 100,
04:17:09/00:02:05, Peer 200.200.200.2
    Learned from peer 200.200.200.2, RPF peer 200.200.200.2,
    SAs received: 277, Encapsulated data received: 0
  (200.200.200.200, 227.1.2.3), RP: 20.20.20.20, (M)BGP/AS 100,
04:17:09/00:02:05, Peer 200.200.200.2
    Learned from peer 200.200.200.2, RPF peer 200.200.200.2,
SAs received: 277, Encapsulated data received: 0
```

Table 1-1Output Fields of the show ip msdp sa-cache Command

Field	Description
(200.200.200.200, 227.1.2.2)	Source address (first IP address) and group address (second IP address) in an SA message.
RP 20.20.20.20	RP address from which SA messages are generated.
(M)BGP/AS 100	RP AS in which SA messages are generated. The AS number is calculated based on MBGP or BGP. If the AS is unknown, it is displayed as "unknown".
04:17:09/00:02:05	Cache duration 4 hours, 17 minutes, and 9 seconds. If no local SA message is received within two minutes and five seconds, the cached SA message is deleted.
Peer 200.200.200.2	MSDP peer that this SA message comes from.
Learned from peer 200.200.200.2	MSDP peer that this SA message comes from.
RPF peer 200.200.200.2	RPF peer corresponding to the RP address from which this SA message is generated.
SAs received	Times of receiving this SA message.
Encapsulated data received	Times of encapsulating multicast data in this SA message.

Notifications

N/A

Platform Description

N/A

1.25   show ip msdp sa-originated

Function

Run the **show ip msdp sa-originated** command to display the (S, G) information that meets the redistribution filtering rule and is initiated by the local device.

Syntax

show ip msdp sa-originated

Parameter Description

N/A

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

If multicast source (S, G) information is registered on the local RP and the local RP is configured with an MSDP peer, you can run this command to display the (S, G) information initiated by this RP.

The (S, G) information displayed by this command has met the rule specified by the redistribution filtering command **ip msdp redistribute**. You can run the **ip msdp sa-filter out** command to check whether the (S, G) information meets the outgoing SA information filtering rule and can be initiated by MSDP peers.

Examples

The following example displays (S, G) information that is initiated by the local device and meets the redistribution filtering rule.

```
Hostname> enable
Hostname# show ip msdp sa-originated
MSDP Source-Active Originated: 5 entries
(192.168.23.78, 225.0.0.1), RP: 192.168.23.249
(192.168.23.79, 225.0.0.2), RP: 192.168.23.249
(192.168.23.80, 225.0.0.3), RP: 192.168.23.249
(192.168.23.81, 225.0.0.4), RP: 192.168.23.249
(192.168.23.82, 225.0.0.5), RP: 192.168.23.249
```

Table 1-1Output Fields of the show ip msdp sa-originated Command

Field	Description
(192.168.23.78, 225.0.0.1)	Source address (first IP address) and group address (second IP address) from which SA messages are initiated.
RP 192.168.23.249	RP address from which SA messages are initiated.

Notifications

N/A

Platform Description

N/A

1.26   show ip msdp summary

Function

Run the **show ip msdp summary** command to display summary information of all MSDP peers.

Syntax

show ip msdp summary

Parameter Description

N/A

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example displays summary information of all MSDP peers.

```
Hostname> enable
Hostname# show ip msdp summary
Msdp Peer Status Summary
Peer Address    As    State    Uptime/Downtime    Reset-Count    Sa-Count    Peer-
description
200.200.200.2   100   Up       04:22:11           10             6616        No
description
200.200.200.3   100   Down     19:17:13           4              0           peer-A
```

Table 1-1 Output Fields of the show ip msdp summary Command

Field	Description
Peer Address	IP address of MSDP peers.
AS	AS of MSDP peers.
State	State of MSDP peers.
Uptime/	Uptime and downtime of MSDP peers.

Field	Description
Downtime	
Reset-Count	Times of MSDP peer disconnections.
Sa-count	Number of SA messages received from this MSDP peer.
Peer-description	Description information of an MSDP peer. If no description information is specified for this MSDP peer, the description information of the MSDP peer is displayed as "No description".

Notifications

N/A

Platform Description

N/A