

# Contents

MSDP commands.....	1
cache-sa-enable.....	1
display msdp brief.....	1
display msdp non-stop-routing status.....	3
display msdp peer-status.....	3
display msdp sa-cache.....	6
display msdp sa-count.....	8
dscp.....	9
encap-data-enable.....	9
import-source.....	10
msdp.....	11
msdp non-stop-routing.....	12
originating-rp.....	12
peer.....	13
peer description.....	13
peer mesh-group.....	14
peer minimum-ttl.....	15
peer password.....	15
peer request-sa-enable.....	16
peer sa-cache-maximum.....	17
peer sa-policy.....	17
peer sa-request-policy.....	19
reset msdp peer.....	19
reset msdp sa-cache.....	20
reset msdp statistics.....	21
shutdown (MSDP view).....	21
static-rpf-peer.....	22
timer keepalive.....	22
timer retry.....	23

# MSDP commands

## cache-sa-enable

Use **cache-sa-enable** to enable the SA message cache mechanism to cache the (S, G) entries contained in SA messages.

Use **undo cache-sa-enable** to disable the SA message cache mechanism.

### Syntax

**cache-sa-enable**

**undo cache-sa-enable**

### Default

The SA message cache mechanism is enabled, and the device caches the (S, G) entries contained in received SA messages.

### Views

MSDP view

### Predefined user roles

network-admin

### Examples

# Enable the SA message cache mechanism on the public network, so that the device caches the (S, G) entries contained in the received SA messages.

```
<Sysname> system-view  
[Sysname] msdp  
[Sysname-msdp] cache-sa-enable
```

### Related commands

**display msdp sa-cache**

**display msdp sa-count**

## display msdp brief

Use **display msdp brief** to display brief information about MSDP peers.

### Syntax

**display msdp** [ **vpn-instance** *vpn-instance-name* ] **brief** [ **state** { **connect** | **disabled** | **established** | **listen** | **shutdown** } ]

### Views

Any view

### Predefined user roles

network-admin

network-operator

## Parameters

**vpn-instance** *vpn-instance-name*: Specifies an MPLS L3VPN instance by its name, a case-sensitive string of 1 to 31 characters. If you do not specify a VPN instance, this command displays brief information about MSDP peers on the public network.

**state**: Specifies a state. If you do not specify this keyword, the command displays brief information about MSDP peers in all states.

**connect**: Specifies the connecting state.

**disabled**: Specifies the connection failure state.

**established**: Specifies the session state.

**listen**: Specifies the listening state.

**shutdown**: Specifies the shutdown state.

## Examples

# Display brief information about MSDP peers in all states on the public network.

```
<Sysname> display msdp brief
```

```
Configured   Established Listen           Connect      Shutdown     Disabled
1            1           0              0            0            0

Peer address  State          Up/Down time  AS           SA count     Reset count
20.20.20.20  Established 00:00:13     100          0            0
```

**Table 1 Command output**

Field	Description
Configured	Number of MSDP peers that have been configured.
Established	Number of MSDP peers in established state.
Listen	Number of MSDP peers in listening state.
Connect	Number of MSDP peers in connecting state.
Shutdown	Number of MSDP peers in shutdown state.
Disabled	Number of MSDP peers in connection failure state.
Peer address	MSDP peer address.
State	MSDP peer status: <ul style="list-style-type: none"> <li>• <b>Established</b>—A session has been established and the MSDP peer is in session.</li> <li>• <b>Listen</b>—A session has been established and the local device acts as the server in listening state.</li> <li>• <b>Connect</b>—A session is not established and the local device acts as a client in connecting state.</li> <li>• <b>Shutdown</b>—The session has been torn down.</li> <li>• <b>Down</b>—The connection failed.</li> </ul>
Up/Down time	Length of time since the MSDP peering connection was established or torn down.
AS	Number of the AS where the MSDP peer is located. If the system could not obtain the AS number, this field displays a question mark (?).
SA count	Number of (S, G) entries in the SA cache.
Reset count	MSDP peering connection reset times.

# display msdp non-stop-routing status

Use **display msdp non-stop-routing status** to display MSDP NSR status information.

## Syntax

```
display msdp non-stop-routing status
```

## Views

Any view

## Predefined user roles

network-admin

network-operator

## Examples

# Display MSDP NSR status information.

```
<Sysname> display msdp non-stop-routing status
MSDP NSR status: Ready
Location of preferred standby process: Slot 1
TCP NSR status: Ready
```

**Table 2 Command output**

Field	Description
MSDP NSR status	MSDP NSR status: <ul style="list-style-type: none"><li>• <b>Ready</b>—MSDP NSR has backed up MSDP peer and remote source information from the active process to standby processes. In this state, MSDP NSR can ensure continuous routing when an active/standby process switchover occurs.</li><li>• <b>Not ready</b>—MSDP NSR is backing up MSDP peer and remote multicast source information from the active process to the standby process. If an active/standby process switchover occurs in this state, traffic is interrupted.</li><li>• <b>Not configured</b>—MSDP NSR is disabled.</li></ul>
Location of preferred standby process	ID of the IRF member device where the preferred standby process resides.
TCP NSR status	TCP NSR status: <ul style="list-style-type: none"><li>• <b>Ready</b>—TCP NSR has backed up TCP connection information from the active process to standby processes.</li><li>• <b>Not ready</b>—TCP NSR is backing up TCP connection information from the active process to standby processes.</li></ul>

## Related commands

**msdp non-stop-routing**

# display msdp peer-status

Use **display msdp peer-status** to display detailed status information for MSDP peers.

## Syntax

```
display msdp [ vpn-instance vpn-instance-name ] peer-status [ peer-address ]
```

## Views

Any view

## Predefined user roles

network-admin  
network-operator

## Parameters

**vpn-instance** *vpn-instance-name*: Specifies an MPLS L3VPN instance by its name, a case-sensitive string of 1 to 31 characters. If you do not specify a VPN instance, this command displays detailed status information for MSDP peers on the public network.

*peer-address*: Specifies an MSDP peer by its address. If you do not specify an MSDP peer, this command displays detailed status information for all MSDP peers.

## Examples

# Display detailed status information for MSDP peer 20.20.20.20 on the public network.

```
<Sysname> display msdp peer-status 20.20.20.20
MSDP peer 20.20.20.20; AS 100
Description:
Information about connection status:
  State: Disabled
  Up/down time: 14:41:08
  Resets: 0
  Connection interface: LoopBack0 (20.20.20.30)
  Received/sent messages: 867/867
  Discarded input messages: 0
  Discarded output messages: 0
  Elapsed time since last connection or counters clear: 14:42:40
  Mesh group peer joined: momo
  Last disconnect reason: Hold timer expired with truncated message
  Truncated packet: 5 bytes in buffer, type: 1, length: 20, without packet time: 75s
Information about (Source, Group)-based SA filtering policy:
  Import policy: None
  Export policy: None
Information about SA-Requests:
  Policy to accept SA-Requests: None
  Sending SA-Requests status: Disable
Minimum TTL to forward SA with encapsulated data: 0
SAs learned from this peer: 0, SA cache maximum for the peer: 4294967295
Input queue size: 0, Output queue size: 0
Counters for MSDP messages:
  RPF check failure: 0
  Incoming/outgoing SA: 0/0
  Incoming/outgoing SA-Request: 0/0
  Incoming/outgoing SA-Response: 0/0
  Incoming/outgoing Keepalive: 867/867
  Incoming/outgoing Notification: 0/0
  Incoming/outgoing Traceroutes in progress: 0/0
  Incoming/outgoing Traceroute reply: 0/0
  Incoming/outgoing Unknown: 0/0
  Incoming/outgoing data packet: 0/0
```

**Table 3 Command output**

Field	Description
MSDP peer	MSDP peer address.
AS	Number of the AS where the MSDP peer is located. If the system could not obtain the AS number, this field displays a question mark (?).
State	MSDP peer status: <ul style="list-style-type: none"> <li>• <b>Established</b>—A session has been established and the MSDP peer is in session.</li> <li>• <b>Listen</b>—A session has been established and the local device acts as the server in listening state.</li> <li>• <b>Connect</b>—A session is not established and the local device acts as a client in connecting state.</li> <li>• <b>Shutdown</b>—The session has been torn down.</li> <li>• <b>Disabled</b>—The connection failed.</li> </ul>
Up/Down time	Length of time since the MSDP peering connection was established or torn down.
Resets	MSDP peering connection reset times.
Connection interface	Interface and IP address used for setting up a TCP connection with the remote MSDP peer.
Received/sent messages	Number of SA messages sent and received through this connection.
Discarded input messages	Number of discarded incoming messages.
Discarded output messages	Number of discarded outgoing messages.
Elapsed time since last connection or counters clear	Elapsed time since the MSDP peer information was last cleared.
Mesh group peer joined	Mesh group that the MSDP peer has joined. This field is not displayed if the MSDP peer does not join a mesh group.
Last disconnect reason	Reason why last MSDP peering connection was torn down. If the connection is not terminated, this field does not display a value. <ul style="list-style-type: none"> <li>• <b>Hold timer expired without message</b>—Hold timer expires and the receiving cache has no messages.</li> <li>• <b>Hold timer expired with truncated message</b>—Hold timer expires and messages in the receiving buffer are not intact. <ul style="list-style-type: none"> <li>○ <b>bytes in buffer</b>—Size of data in the receiving buffer when the connection was terminated.</li> <li>○ <b>type</b>—Type of packets in the receiving buffer when the connection was terminated.</li> <li>○ <b>length</b>—Length of packets in the receiving buffer when the connection was terminated. If the packet is too small in size, this field cannot be resolved and is not displayed.</li> <li>○ <b>without packet time</b>—Length of time since packets were last processed.</li> </ul> </li> <li>• <b>Remote peer has been closed</b>—The MSDP peering connection has been torn down.</li> <li>• <b>TCP ERROR/HUP event received</b>—Error/hup event received by the TCP socket when the MSDP peer sent messages.</li> <li>• <b>Illegal message received</b>—The MSDP peer received illegal messages.</li> <li>• <b>Notification received</b>—The MSDP peer received notification messages.</li> <li>• <b>Reset command executed</b>—The user executed the <b>reset msdp peer</b> command.</li> </ul>

Field	Description
	<ul style="list-style-type: none"> <li>• <b>Shutdown command executed</b>—The user executed the <b>shutdown</b> command.</li> <li>• <b>Interface downed</b>—The MSDP peer received the interface down event when connecting to the remote MSDP peer.</li> </ul>
Information about (Source, Group)-based SA filtering policy	SA message filtering list information: <ul style="list-style-type: none"> <li>• <b>Import policy</b>—Filter list for receiving SA messages from the specified MSDP peer.</li> <li>• <b>Export policy</b>—Filter list for forwarding SA messages from the specified MSDP peer.</li> </ul>
Information about SA-Requests	SA request information: <ul style="list-style-type: none"> <li>• <b>Policy to accept SA request messages</b>—Filtering rule for receiving or forwarding SA request messages from the specified MSDP peer. If SA request messages are not filtered, this field displays <b>None</b>.</li> <li>• <b>Sending SA requests status</b>—Whether the MSDP peer is enabled to send an SA request message to the designated MSDP peer after receiving a new join message.</li> </ul>
Minimum TTL to forward SA with encapsulated data	Lower TTL threshold for the multicast packets encapsulated in SA messages.
SAs learned from this peer	Number of cached (S, G) entries learned from the specified MSDP peer.
SA-cache maximum for the peer	Maximum number of (S, G) entries learned from the specified MSDP peer that the device can cache.
Input queue size	Data size cached in the input queue.
Output queue size	Data size cached in the output queue.
Counters for MSDP message	MSDP peer statistics: <ul style="list-style-type: none"> <li>• <b>RPF check failure</b>—Number of SA messages discarded because of RPF check failure.</li> <li>• <b>Incoming/outgoing SA</b>—Number of received and sent SA messages.</li> <li>• <b>Incoming/outgoing SA-Request</b>—Number of received and sent SA requests.</li> <li>• <b>Incoming/outgoing SA-Response</b>—Number of received and sent SA responses.</li> <li>• <b>Incoming/outgoing Keepalive</b>—Number of received and sent keepalive messages.</li> <li>• <b>Incoming/outgoing Notification</b>—Number of received and sent notification messages.</li> <li>• <b>Incoming/outgoing Traceroutes in progress</b>—Number of received and sent traceroute-in-progress messages.</li> <li>• <b>Incoming/outgoing Traceroute reply</b>—Number of received and sent traceroute replies.</li> <li>• <b>Incoming/outgoing Unknown</b>—Number of received and sent unknown messages.</li> <li>• <b>Incoming/outgoing data packet</b>—Number of received and sent SA messages encapsulated with multicast data.</li> </ul>

## display msdp sa-cache

Use **display msdp sa-cache** to display (S, G) entries in the SA cache.

## Syntax

```
display msdp [ vpn-instance vpn-instance-name ] sa-cache [ group-address | source-address | as-number ] *
```

## Views

Any view

## Predefined user roles

network-admin

network-operator

## Parameters

**vpn-instance** *vpn-instance-name*: Specifies an MPLS L3VPN instance by its name, a case-sensitive string of 1 to 31 characters. If you do not specify a VPN instance, this command displays (S, G) entries in the SA cache on the public network.

**group-address**: Specifies a multicast group by its IP address in the range of 224.0.1.0 to 239.255.255.255. If you do not specify a multicast group, this command displays (S, G) entries in the SA cache for all multicast groups.

**source-address**: Specifies a multicast source by its IP address. If you do not specify a multicast source, this command displays (S, G) entries in the SA cache for all sources.

**as-number**: Specifies an AS number in the range of 1 to 4294967295. If you do not specify an AS number, this command displays (S, G) entries in the SA cache for all ASs.

## Usage guidelines

For this command to display output, you must first execute the **cache-sa-enable** command before you execute this command.

## Examples

# Display (S, G) entries in the SA cache on the public network.

```
<Sysname> display msdp sa-cache
Total Source-Active Cache - 5 entries
Matched 5 entries
```

Source	Group	Origin RP	Pro	AS	Uptime	Expires
10.10.1.2	225.0.0.1	10.10.10.10	BGP	100	00:00:11	00:05:49
10.10.1.2	225.0.0.2	10.10.10.10	BGP	100	00:00:11	00:05:49
10.10.1.2	225.0.0.3	10.10.10.10	BGP	100	00:00:11	00:05:49
10.10.1.2	225.0.0.4	10.10.10.10	BGP	100	00:00:11	00:05:49
10.10.1.2	225.0.0.5	10.10.10.10	BGP	100	00:00:11	00:05:49

**Table 4 Command output**

Field	Description
Total Source-Active Cache	Total number of multicast sources in the SA cache.
Matched	Total number of (S, G) entries that match a multicast sources.
Source	Multicast source address.
Group	Multicast group address.
Origin RP	Address of the RP that generated the (S, G) entry.
Pro	Type of protocol from which the AS number of the origin RP originates. If the system could not obtain the AS number, this field displays a question mark (?).

Field	Description
AS	AS number of the origin RP. If the system could not obtain the AS number, this field displays a question mark (?).
Uptime	Length of time for which the cached (S, G) entry has existed.
Expires	Length of time in which the cached (S, G) entry will expire.

## Related commands

**cache-sa-enable**

## display msdp sa-count

Use **display msdp sa-count** to display the number of (S, G) entries in the SA cache.

### Syntax

**display msdp** [ **vpn-instance** *vpn-instance-name* ] **sa-count** [ *as-number* ]

### Views

Any view

### Predefined user roles

network-admin

network-operator

### Parameters

**vpn-instance** *vpn-instance-name*: Specifies an MPLS L3VPN instance by its name, a case-sensitive string of 1 to 31 characters. If you do not specify a VPN instance, this command displays the number of (S, G) entries in the SA cache on the public network.

*as-number*: Specifies an AS number in the range of 1 to 4294967295. If you do not specify an AS number, this command displays the number of (S, G) entries in the SA cache for all ASs.

### Usage guidelines

For this command to display output, you must first execute the **cache-sa-enable** command before you execute this command.

### Examples

# Display the number of (S, G) entries in the SA cache on the public network.

```
<Sysname> display msdp sa-count
(S, G) entries statistics, counted by peer
  Peer address      SA count
  10.10.10.10       5

(S, G) entries statistics, counted by AS
  AS      Source count      Group count
  ?       3                  3

5 (S, G) entries in total
```

**Table 5 Command output**

Field	Description
(S, G) entries statistics, counted by peer	Number of (S, G) entries on an MSDP peer basis.

Field	Description
Peer address	Address of the MSDP peer that sent SA messages.
SA count	Number of (S, G) entries from the MSDP peer.
(S, G) entries statistics, counted by AS	Number of cached (S, G) entries on an AS basis.
AS	AS number. If the system could not obtain the AS number, this field displays a question mark (?).
Source count	Number of multicast sources in the AS.
Group count	Number of multicast groups in the AS.
(S, G) entries in total	Total number of (S, G) entries.

## Related commands

**cache-sa-enable**

## dscp

Use **dscp** to set the DSCP value for outgoing MSDP protocol packets.

Use **undo dscp** to restore the default.

### Syntax

**dscp** *dscp-value*

**undo dscp**

### Default

The DSCP value is 48 for outgoing MSDP protocol packets.

### Views

MSDP view

### Predefined user roles

network-admin

### Parameters

*dscp-value*: Specifies a DSCP value in the range of 0 to 63.

### Usage guidelines

The DSCP value is carried in the ToS field of an IP packet to determine the transmission priority of the packet. A greater DSCP value represents a higher priority.

### Examples

# Set the DSCP value to 63 for outgoing MSDP protocol packets.

```
<Sysname> system-view
[Sysname] msdp
[Sysname-msdp] dscp 63
```

## encap-data-enable

Use **encap-data-enable** to enable multicast data encapsulation in SA messages.

Use **undo encap-data-enable** to restore the default.

## Syntax

**encap-data-enable**  
**undo encap-data-enable**

## Default

An SA message contains only (S, G) entries. Multicast data is not encapsulated in an SA message.

## Views

MSDP view

## Predefined user roles

network-admin

## Examples

```
# Enable multicast data encapsulation in SA messages on the public network.  
<Sysname> system-view  
[Sysname] msdp  
[Sysname-msdp] encap-data-enable
```

# import-source

Use **import-source** to configure an SA message creation policy.

Use **undo import-source** to restore the default.

## Syntax

**import-source** [ **acl** *ipv4-acl-number* ]  
**undo import-source**

## Default

When an SA message is created, all the (S, G) entries within the domain are advertised in the SA message.

## Views

MSDP view

## Predefined user roles

network-admin

## Parameters

*ipv4-acl-number*: Specifies an IPv4 basic or advanced ACL number in the range of 2000 to 3999. If you specify an ACL, this command advertises only the (S, G) entries that the ACL permits. This command does not advertise (S, G) entries when one of the following conditions exists:

- You do not specify an ACL.
- The specified ACL does not exist.
- The specified ACL does not have valid rules.

## Usage guidelines

This command controls the creation of SA messages. To control forwarding or acceptance of SA messages, use the **peer sa-policy** command.

When you configure a rule in the IPv4 ACL, follow these restrictions and guidelines:

- For the rule to take effect, do not specify the **vpn-instance** *vpn-instance* option.

- In a basic ACL, the **source** *source-address source-wildcard* option specifies a multicast group address.
- In an advanced ACL, the **source** *source-address source-wildcard* option specifies a multicast source address. The **destination** *dest-address dest-wildcard* option specifies a multicast group address.
- Among the other optional parameters, only the **fragment** keyword and the **time-range** *time-range-name* option take effect.

If you configure this command multiple times, the most recent configuration takes effect.

## Examples

# Configure an SA creation policy to advertise only (10.10.0.0/16, 225.1.0.0/16) entries in SA messages on the public network.

```
<Sysname> system-view
[Sysname] acl advanced 3101
[Sysname-acl-ipv4-adv-3101] rule permit ip source 10.10.0.0 0.0.255.255 destination
225.1.0.0 0.0.255.255
[Sysname-acl-ipv4-adv-3101] quit
[Sysname] msdp
[Sysname-msdp] import-source acl 3101
```

## Related commands

**peer sa-policy**

## msdp

Use **msdp** to enable MSDP and enter MSDP view.

Use **undo msdp** to disable MSDP and delete the configurations in MSDP view.

## Syntax

**msdp** [ **vpn-instance** *vpn-instance-name* ]

**undo msdp** [ **vpn-instance** *vpn-instance-name* ]

## Default

MSDP is disabled.

## Views

System view

## Predefined user roles

network-admin

## Parameters

**vpn-instance** *vpn-instance-name*: Specifies an MPLS L3VPN instance by its name, a case-sensitive string of 1 to 31 characters. If you do not specify a VPN instance, this command applies to the public network.

## Usage guidelines

This command takes effect only when IP multicast routing is enabled on the public network or for the VPN instance to which the device belongs.

## Examples

# Enable IP multicast routing on the public network. Then, enable MSDP on the public network and enter MSDP view.

```
<Sysname> system-view
[Sysname] multicast routing
[Sysname-mrib] quit
[Sysname] msdp
[Sysname-msdp]
```

## Related commands

**multicast routing**

# msdp non-stop-routing

Use **msdp non-stop-routing** to enable MSDP NSR.

Use **undo msdp non-stop-routing** to disable MSDP NSR.

## Syntax

**msdp non-stop-routing**

**undo msdp non-stop-routing**

## Default

MSDP NSR is disabled.

## Views

System view

## Predefined user roles

network-admin

## Usage guidelines

This command enables MSDP to back up protocol state information and data, such as MSDP peer and remote multicast source information, from the active process to standby processes. A standby process seamlessly takes over when the active process fails. Use this feature to avoid forwarding interruption for MSDP when an active/standby switchover occurs.

## Examples

```
# Enable MSDP NSR.
<Sysname> system-view
[Sysname] msdp non-stop-routing
```

## Related commands

**display msdp non-stop-routing status**

# originating-rp

Use **originating-rp** to configure the originating RP of SA messages.

Use **undo originating-rp** to restore the default.

## Syntax

**originating-rp** *interface-type interface-number*

**undo originating-rp**

## Default

SA messages are originated by real RPs.

## Views

MSDP view

## Predefined user roles

network-admin

## Parameters

*interface-type interface-number*. Specifies an interface by its type and number.

## Examples

```
# Configure VLAN-interface 100 as the originating RP of SA messages on the public network.
<Sysname> system-view
[Sysname] msdp
[Sysname-msdp] originating-rp vlan-interface 100
```

## peer

Use **peer** to specify an MSDP peer.

Use **undo peer** to remove an MSDP peer.

## Syntax

```
peer peer-address connect-interface interface-type interface-number
undo peer peer-address
```

## Default

No MSDP peers exist.

## Views

MSDP view

## Predefined user roles

network-admin

## Parameters

*peer-address*: Specifies an MSDP peer by its IP address.

**connect-interface** *interface-type interface-number*: Specifies an interface by its type and number. The local device uses the primary IP address of the specified interface to establish a TCP connection with the remote MSDP peer.

## Usage guidelines

You must execute this command before you use any other **peer** commands.

## Examples

```
# Specify the router with IP address 125.10.7.6 as an MSDP peer and VLAN-interface 100 as the
local connection port on the public network.
<Sysname> system-view
[Sysname] msdp
[Sysname-msdp] peer 125.10.7.6 connect-interface vlan-interface 100
```

## peer description

Use **peer description** to configure a description for an MSDP peer.

Use **undo peer description** to delete the description for an MSDP peer.

### Syntax

```
peer peer-address description text  
undo peer peer-address description
```

### Default

No description exists.

### Views

MSDP view

### Predefined user roles

network-admin

### Parameters

*peer-address*: Specifies an MSDP peer by its IP address.

*text*: Specifies a description, a case-sensitive string of 1 to 80 characters.

### Examples

# Configure the description **CustomerA** for the MSDP peer with IP address 125.10.7.6 on the public network.

```
<Sysname> system-view  
[Sysname] msdp  
[Sysname-msdp] peer 125.10.7.6 description CustomerA
```

## peer mesh-group

Use **peer mesh-group** to assign an MSDP peer to a mesh group.

Use **undo peer mesh-group** to remove an MSDP peer from a mesh group.

### Syntax

```
peer peer-address mesh-group name  
undo peer peer-address mesh-group
```

### Default

An MSDP peer does not belong to a mesh group.

### Views

MSDP view

### Predefined user roles

network-admin

### Parameters

*peer-address*: Specifies an MSDP peer by its IP address.

*name*: Specifies a mesh group, a case-sensitive string of 1 to 32 characters. A mesh group name must not contain spaces.

### Examples

# Assign the MSDP peer with IP address 125.10.7.6 to mesh group **Group1** on the public network.

```
<Sysname> system-view  
[Sysname] msdp
```

```
[Sysname-msdp] peer 125.10.7.6 mesh-group Group1
```

## peer minimum-ttl

Use **peer minimum-ttl** to set the lower TTL threshold for multicast data packets to be encapsulated in SA messages.

Use **undo peer minimum-ttl** to restore the default.

### Syntax

```
peer peer-address minimum-ttl ttl-value
```

```
undo peer peer-address minimum-ttl
```

### Default

The lower TTL threshold is 0 for multicast data packets to be encapsulated in SA messages.

### Views

MSDP view

### Predefined user roles

network-admin

### Parameters

*peer-address*: Specifies an MSDP peer by its IP address.

*ttl-value*: Specifies the lower TTL threshold in the range of 0 to 255.

### Examples

# Set the lower TTL threshold to 10 for multicast data packets to be encapsulated in SA messages and forwarded to MSDP peer 110.10.10.1 on the public network.

```
<Sysname> system-view
```

```
[Sysname] msdp
```

```
[Sysname-msdp] peer 110.10.10.1 minimum-ttl 10
```

## peer password

Use **peer password** to configure the device to perform MD5 authentication when establishing a TCP connection with an MSDP peer.

Use **undo peer password** to configure the device not to perform MD5 authentication when establishing a TCP connection with an MSDP peer.

### Syntax

```
peer peer-address password { cipher | simple } string
```

```
undo peer peer-address password
```

### Default

The device does not perform MD5 authentication when establishing a TCP connection with an MSDP peer.

### Views

MSDP view

### Predefined user roles

network-admin

## Parameters

*peer-address*: Specifies an MSDP peer by its IP address.

**cipher**: Specifies a key in encrypted form.

**simple**: Specifies a key in plaintext form. For security purposes, the key specified in plaintext form will be stored in encrypted form.

*string*: Specifies the key. Its plaintext form is a case-sensitive string of 33 to 137 characters. Its encrypted form is a case-sensitive string of 1 to 80 characters.

## Usage guidelines

For the TCP connection to be successfully established, you must configure the same key for MD5 authentication on both MSDP peers.

## Examples

# Configure the router to perform MD5 authentication when establishing a TCP connection with MSDP peer 10.1.100.1 and set the key to **aabbcc** in plaintext on the public network.

```
<Sysname> system-view
[Sysname] msdp
[Sysname-msdp] peer 10.1.100.1 password simple aabbcc
```

# peer request-sa-enable

Use **peer request-sa-enable** to enable the device to send an SA request message to an MSDP peer after receiving a new join message.

Use **undo peer request-sa-enable** to disable the device from sending an SA request message to an MSDP peer.

## Syntax

**peer** *peer-address* **request-sa-enable**

**undo peer** *peer-address* **request-sa-enable**

## Default

After receiving a new join message, the device does not send an SA request message to MSDP peers. Instead, it waits for an SA message.

## Views

MSDP view

## Predefined user roles

network-admin

## Parameters

*peer-address*: Specifies an MSDP peer by its IP address.

## Usage guidelines

For the device to send out SA request messages, you must disable the SA message cache mechanism before you execute this command.

## Examples

# Disable the SA message cache mechanism on the public network.

```
<Sysname> system-view
[Sysname] msdp
[Sysname-msdp] undo cache-sa-enable
```

# Enable the device to send an SA request message to MSDP peer 125.10.7.6 after it receives a new join message.

```
[Sysname-msdp] peer 125.10.7.6 request-sa-enable
```

## Related commands

**cache-sa-enable**

**display msdp peer-status**

## peer sa-cache-maximum

Use **peer sa-cache-maximum** to set the maximum number of (S, G) entries in the SA cache learned from an MSDP peer.

Use **undo peer sa-cache-maximum** to restore the default.

## Syntax

```
peer peer-address sa-cache-maximum sa-limit
```

```
undo peer peer-address sa-cache-maximum
```

## Default

The device can cache a maximum of 4294967295 (S, G) entries learned from an MSDP peer.

## Views

MSDP view

## Predefined user roles

network-admin

## Parameters

*peer-address*: Specifies an MSDP peer by its IP address.

*sa-limit*: Specifies the maximum number of (S, G) entries in the SA cache, in the range of 1 to 4294967295.

## Examples

```
# Set the maximum number to 100 for (S, G) entries in the SA cache learned from MSDP peer 125.10.7.6 on the public network.
```

```
<Sysname> system-view
```

```
[Sysname] msdp
```

```
[Sysname-msdp] peer 125.10.7.6 sa-cache-maximum 100
```

## Related commands

**display msdp brief**

**display msdp peer-status**

**display msdp sa-count**

## peer sa-policy

Use **peer sa-policy** to configure an SA incoming or outgoing policy for an MSDP peer.

Use **undo peer sa-policy** to delete the SA incoming or outgoing policy for an MSDP peer.

## Syntax

```
peer peer-address sa-policy { export | import } [ acl ipv4-acl-number ]
```

**undo peer** *peer-address* **sa-policy** { **export** | **import** }

## Default

No SA incoming or outgoing policy exists, and all SA messages from an MSDP peer are accepted or forwarded.

## Views

MSDP view

## Predefined user roles

network-admin

## Parameters

*peer-address*: Specifies an MSDP peer by its IP address.

**export**: Specifies the outgoing direction.

**import**: Specifies the incoming direction.

*ipv4-acl-number*: Specifies an IPv4 advanced ACL number in the range of 3000 to 3999. If you specify an ACL, the device accepts and forwards only SA messages that the ACL permits. The device discards all SA messages when one of the following conditions exists:

- You do not specify an ACL.
- The specified ACL does not exist.
- The specified ACL does not have valid rules.

## Usage guidelines

This command filters SA messages from a specified MSDP peer to control the acceptance or forwarding of SA messages. To control the creation of SA messages, use the **import-source** command.

When you configure a rule in the IPv4 advanced ACL, follow these restrictions and guidelines:

- For the rule to take effect, do not specify the **vpn-instance** *vpn-instance* option.
- The **source** *source-address source-wildcard* option specifies a multicast source address.
- The **destination** *dest-address dest-wildcard* option specifies a multicast group address.
- Among the other optional parameters, only the **fragment** keyword and the **time-range** *time-range-name* option take effect.

If you configure this command multiple times, the most recent configuration takes effect.

## Examples

# Configure an SA outgoing policy to forward only SA messages that ACL 3100 permits to MSDP peer 125.10.7.6 on the public network.

```
<Sysname> system-view
[Sysname] acl advanced 3100
[Sysname-acl-ipv4-adv-3100] rule permit ip source 170.15.0.0 0.0.255.255 destination
225.1.0.0 0.0.255.255
[Sysname-acl-ipv4-adv-3100] quit
[Sysname] msdp
[Sysname-msdp] peer 125.10.7.6 connect-interface vlan-interface 100
[Sysname-msdp] peer 125.10.7.6 sa-policy export acl 3100
```

## Related commands

**display msdp peer-status**

**import-source**

## peer sa-request-policy

Use **peer sa-request-policy** to configure an SA request policy for an MSDP peer.

Use **undo peer sa-request-policy** to delete the SA request policy for an MSDP peer.

### Syntax

```
peer peer-address sa-request-policy [ acl ipv4-acl-number ]
```

```
undo peer peer-address sa-request-policy
```

### Default

No SA request policy exists, and all SA request messages from an MSDP peer are accepted.

### Views

MSDP view

### Predefined user roles

network-admin

### Parameters

*peer-address*: Specifies an MSDP peer by its IP address.

*ipv4-acl-number*: Specifies an IPv4 basic ACL number in the range of 2000 to 2999. If you specify an ACL, the device accepts only SA requests that the ACL permits. The device discards all SA requests when one of the following conditions exists:

- You do not specify an ACL.
- The specified ACL does not exist.
- The specified ACL does not have valid rules.

### Usage guidelines

When you configure a rule in the IPv4 basic ACL, follow these restrictions and guidelines:

- For the rule to take effect, do not specify the **vpn-instance** *vpn-instance* option.
- The **source** *source-address source-wildcard* option specifies a multicast group address.
- Among the other optional parameters, only the **fragment** keyword and the **time-range** *time-range-name* option take effect.

If you configure this command multiple times, the most recent configuration takes effect.

### Examples

# Configure an SA request policy on the public network. Then, the device accepts only SA requests that are from MSDP peer 175.58.6.5 and for multicast groups in the range 225.1.1.0/24.

```
<Sysname> system-view
[Sysname] acl basic 2001
[Sysname-acl-ipv4-basic-2001] rule permit source 225.1.1.0 0.0.0.255
[Sysname-acl-ipv4-basic-2001] quit
[Sysname] msdp
[Sysname-msdp] peer 175.58.6.5 sa-request-policy acl 2001
```

## reset msdp peer

Use **reset msdp peer** to reset the TCP connection with an MSDP peer and clear statistics for the MSDP peer.

## Syntax

```
reset msdp [ vpn-instance vpn-instance-name ] peer [ peer-address ]
```

## Views

User view

## Predefined user roles

network-admin

## Parameters

**vpn-instance** *vpn-instance-name*: Specifies an MPLS L3VPN instance by its name, a case-sensitive string of 1 to 31 characters. If you do not specify a VPN instance, this command resets the TCP connection with the specified MSDP peer and clears statistics for the MSDP peer on the public network.

*peer-address*: Specifies an MSDP peer by its IP address. If you do not specify an MSDP peer, this command resets the TCP connections with all MSDP peers and clears statistics for all MSDP peers.

## Examples

```
# Reset the TCP connection with MSDP peer 125.10.7.6 and clear all statistics for the MSDP peer on the public network.
```

```
<Sysname> reset msdp peer 125.10.7.6
```

# reset msdp sa-cache

Use **reset msdp sa-cache** to clear (S, G) entries in the SA cache.

## Syntax

```
reset msdp [ vpn-instance vpn-instance-name ] sa-cache [ group-address ]
```

## Views

User view

## Predefined user roles

network-admin

## Parameters

**vpn-instance** *vpn-instance-name*: Specifies an MPLS L3VPN instance by its name, a case-sensitive string of 1 to 31 characters. If you do not specify a VPN instance, this command clears (S, G) entries in the SA cache on the public network.

*group-address*: Specifies a multicast group by its IP address in the range of 224.0.1.0 to 239.255.255.255. If you do not specify a multicast group, this command clears (S, G) entries for all multicast groups in the SA cache.

## Examples

```
# Clear (S, G) entries for multicast group 225.5.4.3 in the SA cache on the public network.
```

```
<Sysname> reset msdp sa-cache 225.5.4.3
```

## Related commands

**cache-sa-enable**

**display msdp sa-cache**

## reset msdp statistics

Use **reset msdp statistics** to clear statistics for an MSDP peer without resetting the TCP connection with the MSDP peer.

### Syntax

```
reset msdp [ vpn-instance vpn-instance-name ] statistics [ peer-address ]
```

### Views

User view

### Predefined user roles

network-admin

### Parameters

**vpn-instance** *vpn-instance-name*: Specifies an MPLS L3VPN instance by its name, a case-sensitive string of 1 to 31 characters. If you do not specify a VPN instance, this command clears statistics for the specified MSDP peer without resetting the TCP connection with the MSDP peer on the public network.

*peer-address*: Specifies an MSDP peer by its IP address. If you do not specify an MSDP peer, this command clears statistics for all MSDP peers without resetting the TCP connection with all MSDP peers.

### Examples

```
# Clear statistics for MSDP peer 125.10.7.6 without resetting the TCP connection with the peer on the public network.
```

```
<Sysname> reset msdp statistics 125.10.7.6
```

## shutdown (MSDP view)

Use **shutdown** to tear down the connection with an MSDP peer.

Use **undo shutdown** to re-establish the connection with an MSDP peer.

### Syntax

```
shutdown peer-address
```

```
undo shutdown peer-address
```

### Default

The connection with an MSDP peer is active.

### Views

MSDP view

### Predefined user roles

network-admin

### Parameters

*peer-address*: Specifies an MSDP peer by its IP address.

### Examples

```
# Tear down the connection with the MSDP peer 125.10.7.6 on the public network.
```

```
<Sysname> system-view
```

```
[Sysname] msdp
```

```
[Sysname-msdp] shutdown 125.10.7.6
```

## Related commands

**display msdp brief**  
**display msdp peer-status**

## static-rpf-peer

Use **static-rpf-peer** to configure a static RPF peer.

Use **undo static-rpf-peer** to remove a static RPF peer.

### Syntax

**static-rpf-peer** *peer-address* [ **rp-policy** *ip-prefix-name* ]  
**undo static-rpf-peer** *peer-address*

### Default

No static RPF peers exist.

### Views

MSDP view

### Predefined user roles

network-admin

### Parameters

*peer-address*: Specifies an MSDP peer by its IP address.

**rp-policy** *ip-prefix-name*: Specifies a filtering policy based on RP addresses in SA messages by its name, a case-sensitive string of 1 to 63 characters. If you specify a filtering policy, the device does not perform RPF checks on SA messages permitted by the policy. If you do not specify a filtering policy, the device performs RPF checks on all SA messages.

### Usage guidelines

This feature exempts SA messages forwarded by the static RPF peer from RPF checks.

### Examples

```
# Specify 130.10.7.6 as the static RPF peer to exempt SA messages originated by RPs on subnet 130.10.0.0/16 from RPF checks on the public network.
```

```
<Sysname> system-view  
[Sysname] ip prefix-list list1 permit 130.10.0.0 16 greater-equal 16 less-equal 32  
[Sysname] msdp  
[Sysname-msdp] peer 130.10.7.6 connect-interface vlan-interface 100  
[Sysname-msdp] static-rpf-peer 130.10.7.6 rp-policy list1
```

### Related commands

**display msdp peer-status**  
**ip prefix-list**

## timer keepalive

Use **timer keepalive** to set the keepalive timer and the peer hold timer for MSDP sessions.

Use **undo timer keepalive** to restore the default.

### Syntax

**timer keepalive** *keepalive holdtime*

## **undo timer keepalive**

### **Default**

The keepalive timer is 60 seconds, and the peer hold timer is 75 seconds.

### **Views**

MSDP view

### **Predefined user roles**

network-admin

### **Parameters**

*keepalive*: Specifies a keepalive timer in the range of 1 to 21845 seconds.

*holdtime*: Specifies a peer hold timer in the range of 1 to 65535 seconds.

### **Usage guidelines**

MSDP peers periodically send keepalive messages to each other to keep a session alive. When a session is established, an MSDP peer sends a keepalive message to its peer and starts a keepalive timer and a peer hold timer. When the keepalive timer expires, the MSDP peer sends a new keepalive message. If the MSDP peer receives an MSDP message from its peer before the peer hold timer expires, it resets the peer hold timer. If the MSDP peer does not receive an MSDP message when the hold timer expires, the MSDP peer closes the session.

When you configure this command, follow these guidelines:

No mechanism is available for MSDP peers to negotiate the two values. You must set the same keepalive timer and the peer hold timer for the MSDP peers of a session.

The keepalive timer must be less than the peer hold timer.

This command takes effect on the established MSDP session.

### **Examples**

# Set the keepalive timer to 60 seconds and the peer hold timer to 180 seconds for MSDP sessions on the public network.

```
<Sysname> system-view
[Sysname] msdp
[Sysname-msdp] timer keepalive 60 180
```

## timer retry

Use **timer retry** to set the MSDP connection retry interval.

Use **undo timer retry** to restore the default.

### **Syntax**

**timer retry** *interval*

**undo timer retry**

### **Default**

The MSDP connection retry interval is 30 seconds.

### **Views**

MSDP view

### **Predefined user roles**

network-admin

## Parameters

*interval*: Specifies an MSDP connection retry interval in the range of 1 to 60 seconds.

## Examples

# Set the MSDP connection retry interval to 60 seconds on the public network.

```
<Sysname> system-view
```

```
[Sysname] msdp
```

```
[Sysname-msdp] timer retry 60
```