

Chapter 26

Summary of MSDP Configuration Statements

The following sections explain each of the Multicast Source Discovery Protocol (MSDP) configuration statements. The statements are organized alphabetically.

active-source-limit

Syntax	active-source-limit { maximum <i>number</i> ; threshold <i>number</i> ; }
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols msdp], [edit logical-routers <i>logical-router-name</i> protocols msdp group <i>group-name</i> peer <i>address</i>], [edit logical-routers <i>logical-router-name</i> protocols msdp peer <i>address</i>], [edit logical-routers <i>logical-router-name</i> protocols msdp source <i>prefix/mask</i>], [edit protocols msdp], [edit protocols msdp group <i>group-name</i> peer <i>address</i>], [edit protocols msdp peer <i>address</i>], [edit protocols msdp source <i>prefix/mask</i>]
Description	Limit the number of active source messages the router accepts.
Default	If you do not include this statement, the router accepts any number of MSDP active source messages.
Options	The options are explained separately.
Usage Guidelines	See “Configuring the MSDP Active Source Limit” on page 277.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

authentication-key

Syntax	authentication-key <i>peer-key</i> ;
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols msdp group <i>group-name</i> peer <i>address</i>], [edit logical-routers <i>logical-router-name</i> protocols msdp peer <i>address</i>], [edit protocols msdp group <i>group-name</i> peer <i>address</i>], [edit protocols msdp peer <i>address</i>]
Description	Associate a message digest 5 (MD5) signature option authentication key with an MSDP peering session.
Default	If you do not include this statement, the router accepts any valid MSDP messages from the peer address.
Options	<i>peer-key</i> —MD5 authentication key. The peer key can be a text string up to 16 letters and digits long. Strings can include any ASCII characters with the exception of (,) , & , and [. If you include spaces in an MSDP authentication key, enclose all characters in quotation marks (" ").
Usage Guidelines	See “Configuring the MSDP Authentication Key” on page 271.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

data-encapsulation

Syntax	data-encapsulation (disable enable);
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols msdp], [edit protocols msdp]
Description	Configure a rendezvous point (RP) using MSDP to encapsulate multicast data received in MSDP register messages inside forwarded MSDP source-active messages.
Default	If you do not include this statement, the RP encapsulates multicast data.
Options	disable—(Optional) Do not use MSDP data encapsulation. enable—Use MSDP data encapsulation. Default: enable
Usage Guidelines	See “Configuring MSDP Data Encapsulation” on page 276.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

default-peer

Syntax	default-peer;
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols msdp], [edit logical-routers <i>logical-router-name</i> protocols msdp group <i>group-name</i>], [edit logical-routers <i>logical-router-name</i> protocols msdp group <i>group-name</i> peer <i>address</i>], [edit logical-routers <i>logical-router-name</i> protocols msdp peer <i>address</i>], [edit protocols msdp], [edit protocols msdp group <i>group-name</i>], [edit protocols msdp group <i>group-name</i> peer <i>address</i>], [edit protocols msdp peer <i>address</i>]
Description	Establishes this peer as the default MSDP peer and accepts source-active messages from the peer without the usual peer-reverse-path-forwarding (peer-RPF) check.
Usage Guidelines	See “Configuring a Default MSDP Peer” on page 279.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

disable

Syntax	disable;
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols msdp], [edit logical-routers <i>logical-router-name</i> protocols msdp group <i>group-name</i>], [edit logical-routers <i>logical-router-name</i> protocols msdp group <i>group-name</i> peer <i>address</i>], [edit logical-routers <i>logical-router-name</i> protocols msdp peer <i>address</i>], [edit protocols msdp], [edit protocols msdp group <i>group-name</i>], [edit protocols msdp group <i>group-name</i> peer <i>address</i>], [edit protocols msdp peer <i>address</i>]
Description	Explicitly disable MSDP.
Usage Guidelines	See “Disabling MSDP” on page 280.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

export

Syntax	export [<i>policy-names</i>];
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols msdp], [edit logical-routers <i>logical-router-name</i> protocols msdp group <i>group-name</i>], [edit logical-routers <i>logical-router-name</i> protocols msdp group <i>group-name</i> peer <i>address</i>], [edit logical-routers <i>logical-router-name</i> protocols msdp peer <i>address</i>], [edit protocols msdp], [edit protocols msdp group <i>group-name</i>], [edit protocols msdp group <i>group-name</i> peer <i>address</i>], [edit protocols <i>msdp</i> peer <i>address</i>]
Description	Apply one or more policies to routes being exported from the routing table into MSDP.
Options	<i>policy-names</i> —Name of one or more policies.
Usage Guidelines	See “Configuring MSDP Routing Policy” on page 273.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
See Also	import on page 288

group

```

Syntax  group group-name {
    disable;
    export [ policy-names ];
    import [ policy-names ];
    local-address address;
    mode (mesh-group|standard);
    traceoptions {
        file name <replace> <size size> <files number> <no-stamp>
          <(world-readable | no-world-readable)>;
        flag flag <flag-modifier> <disable>;
    }
    peer address; {
        active-source-limit {
            maximum number;
            threshold number;
        }
        authentication-key peer-key;
        default-peer;
        disable;
        export [ policy-names ];
        import [ policy-names ];
        local-address address;
        traceoptions {
            file name <replace> <size size> <files number> <no-stamp>
              <(world-readable | no-world-readable)>;
            flag flag <flag-modifier> <disable>;
        }
    }
}

```

Hierarchy Level [edit logical-routers *logical-router-name* protocols msdp],
[edit protocols msdp]

Description Define an MSDP peer group. MSDP peers within groups share common traceoptions, if present and not overridden for an individual peer with the peer statement. To configure multiple MSDP groups, include multiple group statements.

By default, the group's options are identical to the global MSDP options. To override the global options, include group-specific options within the group statement.

The group must contain at least one peer.

Options *group-name*—Name of the MSDP group.

The remaining statements are explained separately.

Usage Guidelines See “Configuring MSDP Groups” on page 269.

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

import

Syntax	import [<i>policy-names</i>];
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols msdp], [edit logical-routers <i>logical-router-name</i> protocols msdp group <i>group-name</i>], [edit logical-routers <i>logical-router-name</i> protocols msdp group <i>group-name</i> peer <i>address</i>], [edit logical-routers <i>logical-router-name</i> protocols msdp peer <i>address</i>], [edit protocols msdp], [edit protocols msdp group <i>group-name</i>], [edit protocols msdp group <i>group-name</i> peer <i>address</i>], [edit protocols <i>msdp</i> peer <i>address</i>]
Description	Apply one or more policies to routes being imported into the routing table from MSDP.
Options	<i>policy-names</i> —Name of one or more policies.
Usage Guidelines	See “Configuring MSDP Routing Policy” on page 273.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
See Also	export on page 286

local-address

Syntax	local-address <i>address</i> ;
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols msdp], [edit logical-routers <i>logical-router-name</i> protocols msdp group <i>group-name</i>], [edit logical-routers <i>logical-router-name</i> protocols msdp group <i>group-name</i> peer <i>address</i>], [edit logical-routers <i>logical-router-name</i> protocols msdp peer <i>address</i>], [edit protocols msdp], [edit protocols msdp group <i>group-name</i>], [edit protocols msdp group <i>group-name</i> peer <i>address</i>], [edit protocols msdp peer <i>address</i>]
Description	Configure the local end of an MSDP session. You must configure at least one peer for MSDP to function. When configuring a peer, you must include this statement. This address is used to accept incoming connections to the peer and to establish connections to the remote peer.
Options	<i>address</i> —IP address of the local end of the connection.
Usage Guidelines	See “Minimum MSDP Configuration” on page 267.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

maximum

Syntax	maximum <i>number</i> ;
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols msdp active-source-limit], [edit protocols msdp active-source-limit]
Description	Configure the maximum number of MSDP active source messages the router accepts.
Options	<i>number</i> —Maximum number of active source messages. Range: 1 through 1,000,000 Default: 25,000
Usage Guidelines	See “Configuring the MSDP Active Source Limit” on page 277.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
See Also	threshold on page 293

mode

Syntax	mode (mesh-group standard);
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols msdp group <i>group-name</i>], [edit protocols msdp group <i>group-name</i>]
Description	Configure groups of peers in a full mesh topology to limit excessive flooding of source-active messages to neighboring peers. The default flooding mode is standard.
Default	If you do not include this statement, default flooding is applied.
Options	mesh-group—(Optional) Group of peers that are mesh group members. standard—Use standard MSDP source-active flooding rules. Default: standard
Usage Guidelines	See “Configuring MSDP Mesh Groups” on page 270.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

msdp

```

Syntax      msdp {
                active-source-limit {
                    maximum number;
                    threshold number;
                }
                data-encapsulation (enable | disable);
                disable;
                rib-group group-name;
                export [ policy-names ];
                import [ policy-names ];
                local-address address;
                traceoptions {
                    file name <replace> <size size> <files number> <no-stamp>
                        <(world-readable | no-world-readable)>;
                    flag flag <flag-modifier> <disable>;
                }
                peer address {
                    active-source-limit {
                        maximum number;
                        threshold number;
                    }
                    authentication-key peer-key;
                    default-peer;
                    disable;
                    export [ policy-names ];
                    import [ policy-names ];
                    local-address address;
                    traceoptions {
                        file name <replace> <size size> <files number> <no-stamp>
                            <(world-readable | no-world-readable)>;
                        flag flag <flag-modifier> <disable>;
                    }
                }
                group group-name {
                    disable;
                    export [ policy-names ];
                    import [ policy-names ];
                    local-address address;
                    mode (mesh-group | standard);
                    traceoptions {
                        file name <replace> <size size> <files number> <no-stamp>
                            <(world-readable | no-world-readable)>;
                        flag flag <flag-modifier> <disable>;
                    }
                }
                peer address {
                    active-source-limit {
                        maximum number;
                        threshold number;
                    }
                }
                authentication-key peer-key;
            }

```

```

    default-peer;
    disable;
    export [ policy-names ];
    import [ policy-names ];
    local-address address;
    traceoptions {
        file name <replace> <size size> <files number> <no-stamp>
            <(world-readable | no-world-readable)>;
        flag flag <flag-modifier> <disable>;
    }
}
source prefix/mask {
    active-source-limit {
        maximum number;
        threshold number;
    }
}
}
}
}

```

Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols], [edit protocols]
Description	Enable MSDP on the router. You must also configure at least one peer for MSDP to function.
Default	MSDP is disabled on the router.
Options	The statements are explained separately.
Usage Guidelines	See “Enabling MSDP” on page 267.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

peer

```

Syntax peer address {
    active-source-limit {
        maximum number;
        threshold number;
    }
    authentication-key peer-key;
    default-peer;
    disable;
    export [ policy-names ];
    import [ policy-names ];
    local-address address;
    traceoptions {
        file name <replace> <size size> <files number> <no-stamp>
            <(world-readable | no-world-readable)>;
        flag flag <flag-modifier> <disable>;
    }
}

```

Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols msdp], [edit logical-routers <i>logical-router-name</i> protocols msdp group <i>group-name</i>], [edit protocols msdp], [edit protocols msdp group <i>group-name</i>]
Description	<p>Define an MSDP peering relationship. An MSDP router must know which routers are its peers. You define the peer relationships explicitly by configuring the neighboring routers that are the MSDP peers of the local router. After peer relationships are established, the MSDP peers exchange messages to advertise active multicast sources. To configure multiple MSDP peers, include multiple peer statements.</p> <p>By default, the peer's options are identical to the global or group-level MSDP options. To override the global or group-level options, include peer-specific options within the peer statement.</p> <p>At least one peer must be configured for MSDP to function. You must configure <i>address</i> and <i>local-address</i>.</p>
Options	<p><i>address</i>—Name of the MSDP peer.</p> <p>The remaining statements are explained separately.</p>
Usage Guidelines	See “Configuring MSDP Peers” on page 268.
Required Privilege Level	<p>routing—To view this statement in the configuration.</p> <p>routing-control—To add this statement to the configuration.</p>

rib-group

Syntax	<code>rib-group <i>group-name</i>;</code>
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols msdp], [edit protocols msdp]
Description	Associate a routing table group with MSDP.
Options	<i>group-name</i> —Name of the routing table group. The name must be one that you defined with the <code>rib-groups</code> statement at the [edit routing-options] hierarchy level.
Usage Guidelines	See “Enabling MSDP” on page 267.
Required Privilege Level	<p>routing—To view this statement in the configuration.</p> <p>routing-control—To add this statement to the configuration.</p>

source

Syntax	source <i>prefix/mask</i> { active-source-limit { maximum <i>number</i> ; threshold <i>number</i> ; } }
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols msdp], [edit protocols msdp]
Description	Limit the number of active source messages the router accepts from sources in this address range.
Default	If you do not include this statement, the router accepts any number of MSDP active source messages.
Options	The other statements are explained separately.
Usage Guidelines	See “Configuring Per-Source Active Source Limit” on page 278.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

threshold

Syntax	threshold <i>number</i> ;
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols msdp active-source-limit], [edit protocols msdp active-source-limit]
Description	Configure the random early discard (RED) threshold for MSDP active source messages. This number should be less than the configured or default maximum.
Options	<i>number</i> —RED threshold for active source messages. Range: 1 through 1,000,000 Default: 24,000
Usage Guidelines	See “Configuring the MSDP Active Source Limit” on page 277.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
See Also	maximum on page 289

traceoptions

Syntax traceoptions {
 file *name* <replace> <size *size*> <files *number*> <no-stamp>
 <(world-readable | no-world-readable)>;
 flag *flag* <flag-modifier> <disable>;
 }

Hierarchy Level [edit logical-routers *logical-router-name* protocols msdp],
 [edit logical-routers *logical-router-name* protocols msdp group *group-name*],
 [edit logical-routers *logical-router-name* protocols msdp group *group-name*
 peer *address*],
 [edit logical-routers *logical-router-name* protocols msdp peer *address*],
 [edit protocols msdp],
 [edit protocols msdp group *group-name*],
 [edit protocols msdp group *group-name* peer *address*],
 [edit protocols msdp peer *address*]

Description Configure MSDP tracing options.

To specify more than one tracing operation, include multiple flag statements.

Default The default MSDP trace options are those inherited from the routing protocol's traceoptions statement included at the [edit routing-options] hierarchy level.

Options disable—(Optional) Disable the tracing operation. You can use this option to disable a single operation when you have defined a broad group of tracing operations, such as all.

file *name*—Name of the file to receive the output of the tracing operation. Enclose the name within quotation marks. All files are placed in the directory /var/log. We recommend that you place tracing output in the msdp-log file.

files *number*—(Optional) Maximum number of trace files. When a trace file named *trace-file* reaches its maximum size, it is renamed *trace-file.0*, then *trace-file.1*, and so on, until the maximum number of trace files is reached. Then the oldest trace file is overwritten.

If you specify a maximum number of files, you also must specify a maximum file size with the size option.

Range: 2 through 1000 files

Default: 2 files

flag *flag*—Tracing operation to perform. To specify more than one tracing operation, include multiple flag statements.

MSDP Tracing Flags

keepalive—Keepalive messages

packets—All MSDP packets

route—MSDP changes to the routing table

source-active—Source-active packets

source-active-request—Source-active request packets

source-active-response—Source-active response packets

Global Tracing Flags

all—All tracing operations

general—A combination of the normal and route trace operations

normal—All normal operations

Default: If you do not specify this option, only unusual or abnormal operations are traced.

policy—Policy operations and actions

route—Routing table changes

state—State transitions

task—Interface transactions and processing

timer—Timer usage

flag-modifier—(Optional) Modifier for the tracing flag. You can specify one or more of these modifiers:

detail—Detailed trace information

receive—Packets being received

send—Packets being transmitted

no-stamp—(Optional) Do not place timestamp information at the beginning of each line in the trace file.

Default: If you omit this option, timestamp information is placed at the beginning of each line of the tracing output.

no-world-readable—(Optional) Disallow any user to read the log file.

replace—(Optional) Replace an existing trace file if there is one.

Default: If you do not include this option, tracing output is appended to an existing trace file.

size *size*—(Optional) Maximum size of each trace file, in kilobytes (KB), megabytes (MB), or gigabytes (GB). When a trace file named *trace-file* reaches this size, it is renamed *trace-file.0*. When *trace-file* again reaches its maximum size, *trace-file.0* is renamed *trace-file.1* and *trace-file* is renamed *trace-file.0*. This renaming scheme continues until the maximum number of trace files is reached. Then the oldest trace file is overwritten.

If you specify a maximum file size, you must also specify a maximum number of trace files with the files option.

Syntax: *xk* to specify KB, *xm* to specify MB, or *xg* to specify GB

Range: 10 KB through the maximum file size supported on your system

Default: 1 MB

world-readable—(Optional) Allow any user to read the log file.

Usage Guidelines See “Tracing MSDP Protocol Traffic” on page 280.

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