

## Chapter 24

# 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-limits

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<b>Syntax</b>	active-source-limits { maximum <i>number</i> ; threshold <i>number</i> ; }
<b>Hierarchy Level</b>	[edit protocols msdp], [edit logical-routers <i>logical-router-name</i> protocols msdp]
<b>Description</b>	Configure limits to the number of active source messages the router will accept.
<b>Default</b>	If you do not include this statement, the router will accept any number of MSDP active source messages.
<b>Options</b>	The options are explained separately.
<b>Usage Guidelines</b>	See “Configure MSDP Active Source Limits” on page 251.
<b>Required Privilege Level</b>	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

## authentication-key

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<b>Syntax</b>	authentication-key <i>peer-key</i> ;
<b>Hierarchy Level</b>	[edit protocols msdp 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 logical-routers <i>logical-router-name</i> protocols msdp group <i>group-name</i> peer <i>address</i> ]
<b>Description</b>	Associate an MD5 signature option authentication key with an MSDP peering session.
<b>Default</b>	If you do not include this statement, the router will accept any valid MSDP messages from the peer address.
<b>Options</b>	<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 (" ").
<b>Usage Guidelines</b>	See “Configure MSDP Authentication Key” on page 246.
<b>Required Privilege Level</b>	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

## data-encapsulation

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<b>Syntax</b>	data-encapsulation (disable   enable);
<b>Hierarchy Level</b>	[edit protocols msdp], [edit logical-routers <i>logical-router-name</i> protocols msdp]
<b>Description</b>	Configure an RP using MSDP to encapsulate multicast data received in MSDP register messages inside forwarded MSDP source active messages.
<b>Default</b>	If you do not include this statement, the RP will encapsulate multicast data.
<b>Options</b>	disable—(Optional) Do not use MSDP data encapsulation. enable—Use MSDP data encapsulation. <b>Default:</b> enable
<b>Usage Guidelines</b>	See “Configure MSDP Data Encapsulation” on page 250.
<b>Required Privilege Level</b>	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

## disable

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<b>Syntax</b>	disable;
<b>Hierarchy Level</b>	[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> ], [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> ]
<b>Description</b>	Explicitly disable MSDP.
<b>Usage Guidelines</b>	See “Disable MSDP” on page 252.
<b>Required Privilege Level</b>	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

## export

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<b>Syntax</b>	export [ <i>policy-names</i> ];
<b>Hierarchy Level</b>	[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> ], [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 <i>msdp</i> peer <i>address</i> ]
<b>Description</b>	Apply one or more policies to routes being exported from the routing table into MSDP.
<b>Options</b>	<i>policy-names</i> —Name of one or more policies.
<b>Usage Guidelines</b>	See “Configure MSDP Routing Policy” on page 247.
<b>Required Privilege Level</b>	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
<b>See Also</b>	import on page 259

## 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; {
        authentication-key peer-key;
        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 protocols msdp],  
[edit logical-routers *logical-router-name* 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 “Configure MSDP Groups” on page 243.

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

## import

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<b>Syntax</b>	import [ <i>policy-names</i> ];
<b>Hierarchy Level</b>	[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> ], [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> ]
<b>Description</b>	Apply one or more policies to routes being imported into the routing table from MSDP.
<b>Options</b>	<i>policy-names</i> —Name of one or more policies.
<b>Usage Guidelines</b>	See “Configure MSDP Routing Policy” on page 247.
<b>Required Privilege Level</b>	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
<b>See Also</b>	export on page 257

## local-address

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<b>Syntax</b>	local-address <i>address</i> ;
<b>Hierarchy Level</b>	[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> ], [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> ]
<b>Description</b>	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.
<b>Options</b>	<i>address</i> —IP address of the local end of the connection.
<b>Usage Guidelines</b>	See “Minimum MSDP Configuration” on page 242.
<b>Required Privilege Level</b>	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

## maximum

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<b>Syntax</b>	maximum <i>number</i> ;
<b>Hierarchy Level</b>	[edit protocols msdp active-source-limits], [edit logical-routers <i>logical-router-name</i> protocols msdp active-source-limits]
<b>Description</b>	Configure the maximum number of MSDP active source messages the router will accept.
<b>Options</b>	<i>number</i> —Maximum number of active source messages. <b>Range:</b> 1 through a 32-bit number <b>Default:</b> 25,000
<b>Usage Guidelines</b>	See “Configure MSDP Active Source Limits” on page 251.
<b>Required Privilege Level</b>	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
<b>See Also</b>	threshold on page 263

## mode

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<b>Syntax</b>	mode (mesh-group   standard);
<b>Hierarchy Level</b>	[edit protocols msdp group <i>group-name</i> ], [edit logical-routers <i>logical-router-name</i> protocols msdp group <i>group-name</i> ]
<b>Description</b>	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.
<b>Default</b>	If you do not include this statement, default flooding is applied.
<b>Options</b>	mesh-group—(Optional) Group of peers that are mesh group members.  standard—Use standard MSDP source-active flooding rules. <b>Default:</b> standard
<b>Usage Guidelines</b>	See “Configure MSDP Mesh Groups” on page 244.
<b>Required Privilege Level</b>	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

## msdp

```

Syntax  msdp {
    active-source-limits {
        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 {
        authentication-key peer-key;
        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 {
        authentication-key peer-key;
        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>;
        }
    }
}

```

<b>Hierarchy Level</b>	[edit protocols], [edit logical-routers <i>logical-router-name</i> protocols]
<b>Description</b>	Enable MSDP on the router. You must also configure at least one peer for MSDP to function.
<b>Default</b>	MSDP is disabled on the router.
<b>Options</b>	The statements are explained separately.
<b>Usage Guidelines</b>	See “Enable MSDP” on page 242.
<b>Required Privilege Level</b>	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

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## peer

<b>Syntax</b>	<pre>peer address {   authentication-key peer-key;   disable;   export [ policy-names ];   import [ policy-names ];   local-address address;   traceoptions {     file name &lt;replace&gt; &lt;size size&gt; &lt;files number&gt; &lt;no-stamp&gt;       &lt;(world-readable   no-world-readable)&gt;;     flag flag &lt;flag-modifier&gt; &lt;disable&gt;;   } }</pre>
<b>Hierarchy Level</b>	[edit protocols msdp], [edit protocols msdp group <i>group-name</i> ], [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> ]
<b>Description</b>	<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>
<b>Options</b>	<p><i>address</i>—Name of the MSDP peer.</p> <p>The remaining statements are explained separately.</p>

**Usage Guidelines** See “Configure MSDP Peers” on page 243.

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

## rib-group

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**Syntax** `rib-group group-name;`

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

**Description** Associate a routing table group with MSDP.

**Options** *group-name*—Name of the routing table group. The name must be one that you defined with the rib-groups statement at the [edit routing-options] hierarchy level.

**Usage Guidelines** See “Enable MSDP” on page 242.

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

## threshold

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**Syntax** `threshold number;`

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

**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** *number*—RED threshold for active source messages.  
**Range:** 1 through a 32-bit number  
**Default:** 24,000

**Usage Guidelines** See “Configure MSDP Active Source Limits” on page 251.

**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 260

## traceoptions

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

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

**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 the *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 “Trace MSDP Protocol Traffic” on page 252.

**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.