



Junos[®] OS

MLD Feature Guide for Subscriber Management

Release

14.1



Published: 2014-04-25

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Junos[®] OS MLD Feature Guide for Subscriber Management

14.1

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About the Documentation

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- Supported Platforms on page vii
- Using the Examples in This Manual on page vii
- Documentation Conventions on page ix
- Documentation Feedback on page xi
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Documentation and Release Notes

To obtain the most current version of all Juniper Networks® technical documentation, see the product documentation page on the Juniper Networks website at <http://www.juniper.net/techpubs/>.

If the information in the latest release notes differs from the information in the documentation, follow the product Release Notes.

Juniper Networks Books publishes books by Juniper Networks engineers and subject matter experts. These books go beyond the technical documentation to explore the nuances of network architecture, deployment, and administration. The current list can be viewed at <http://www.juniper.net/books>.

Supported Platforms

For the features described in this document, the following platforms are supported:

- MX Series

Using the Examples in This Manual

If you want to use the examples in this manual, you can use the **load merge** or the **load merge relative** command. These commands cause the software to merge the incoming configuration into the current candidate configuration. The example does not become active until you commit the candidate configuration.

If the example configuration contains the top level of the hierarchy (or multiple hierarchies), the example is a *full example*. In this case, use the **load merge** command.

If the example configuration does not start at the top level of the hierarchy, the example is a *snippet*. In this case, use the **load merge relative** command. These procedures are described in the following sections.

Merging a Full Example

To merge a full example, follow these steps:

1. From the HTML or PDF version of the manual, copy a configuration example into a text file, save the file with a name, and copy the file to a directory on your routing platform.

For example, copy the following configuration to a file and name the file **ex-script.conf**. Copy the **ex-script.conf** file to the **/var/tmp** directory on your routing platform.

```
system {
  scripts {
    commit {
      file ex-script.xml;
    }
  }
}
interfaces {
  fxp0 {
    disable;
    unit 0 {
      family inet {
        address 10.0.0.1/24;
      }
    }
  }
}
```

2. Merge the contents of the file into your routing platform configuration by issuing the **load merge** configuration mode command:

```
[edit]
user@host# load merge /var/tmp/ex-script.conf
load complete
```

Merging a Snippet

To merge a snippet, follow these steps:

1. From the HTML or PDF version of the manual, copy a configuration snippet into a text file, save the file with a name, and copy the file to a directory on your routing platform.

For example, copy the following snippet to a file and name the file **ex-script-snippet.conf**. Copy the **ex-script-snippet.conf** file to the **/var/tmp** directory on your routing platform.

```
commit {
  file ex-script-snippet.xml; }
```

2. Move to the hierarchy level that is relevant for this snippet by issuing the following configuration mode command:


```
[edit]
user@host# edit system scripts
[edit system scripts]
```

3. Merge the contents of the file into your routing platform configuration by issuing the **load merge relative** configuration mode command:

```
[edit system scripts]
user@host# load merge relative /var/tmp/ex-script-snippet.conf
load complete
```

For more information about the **load** command, see the *CLI User Guide*.

Documentation Conventions

Table 1 on page ix defines notice icons used in this guide.

Table 1: Notice Icons

Icon	Meaning	Description
	Informational note	Indicates important features or instructions.
	Caution	Indicates a situation that might result in loss of data or hardware damage.
	Warning	Alerts you to the risk of personal injury or death.
	Laser warning	Alerts you to the risk of personal injury from a laser.
	Tip	Indicates helpful information.
	Best practice	Alerts you to a recommended use or implementation.

Table 2 on page ix defines the text and syntax conventions used in this guide.

Table 2: Text and Syntax Conventions

Convention	Description	Examples
Bold text like this	Represents text that you type.	To enter configuration mode, type the configure command: user@host> configure

Table 2: Text and Syntax Conventions (*continued*)

Convention	Description	Examples
Fixed-width text like this	Represents output that appears on the terminal screen.	<code>user@host> show chassis alarms</code> <code>No alarms currently active</code>
<i>Italic text like this</i>	<ul style="list-style-type: none">Introduces or emphasizes important new terms.Identifies guide names.Identifies RFC and Internet draft titles.	<ul style="list-style-type: none">A policy <i>term</i> is a named structure that defines match conditions and actions.<i>Junos OS CLI User Guide</i>RFC 1997, <i>BGP Communities Attribute</i>
<i>Italic text like this</i>	Represents variables (options for which you substitute a value) in commands or configuration statements.	Configure the machine's domain name: [edit] root@# set system domain-name <i>domain-name</i>
Text like this	Represents names of configuration statements, commands, files, and directories; configuration hierarchy levels; or labels on routing platform components.	<ul style="list-style-type: none">To configure a stub area, include the stub statement at the [edit protocols ospf area area-id] hierarchy level.The console port is labeled CONSOLE.
< > (angle brackets)	Encloses optional keywords or variables.	stub <default-metric <i>metric</i>>;
(pipe symbol)	Indicates a choice between the mutually exclusive keywords or variables on either side of the symbol. The set of choices is often enclosed in parentheses for clarity.	broadcast multicast (<i>string1</i> <i>string2</i> <i>string3</i>)
# (pound sign)	Indicates a comment specified on the same line as the configuration statement to which it applies.	rsvp { # Required for dynamic MPLS only
[] (square brackets)	Encloses a variable for which you can substitute one or more values.	community name members [<i>community-ids</i>]
Indentation and braces ({ })	Identifies a level in the configuration hierarchy.	[edit] routing-options { static { route default { nexthop <i>address</i> ; retain; } } }
;(semicolon)	Identifies a leaf statement at a configuration hierarchy level.	
GUI Conventions		
Bold text like this	Represents graphical user interface (GUI) items you click or select.	<ul style="list-style-type: none">In the Logical Interfaces box, select All Interfaces.To cancel the configuration, click Cancel.

Table 2: Text and Syntax Conventions (*continued*)

Convention	Description	Examples
> (bold right angle bracket)	Separates levels in a hierarchy of menu selections.	In the configuration editor hierarchy, select Protocols>Ospf .

Documentation Feedback

We encourage you to provide feedback, comments, and suggestions so that we can improve the documentation. You can send your comments to techpubs-comments@juniper.net, or fill out the documentation feedback form at <https://www.juniper.net/cgi-bin/docbugreport/>. If you are using e-mail, be sure to include the following information with your comments:

- Document or topic name
- URL or page number
- Software release version (if applicable)

Requesting Technical Support

Technical product support is available through the Juniper Networks Technical Assistance Center (JTAC). If you are a customer with an active J-Care or JNASC support contract, or are covered under warranty, and need post-sales technical support, you can access our tools and resources online or open a case with JTAC.

- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the *JTAC User Guide* located at <http://www.juniper.net/us/en/local/pdf/resource-guides/7100059-en.pdf>.
- Product warranties—For product warranty information, visit <http://www.juniper.net/support/warranty/>.
- JTAC hours of operation—The JTAC centers have resources available 24 hours a day, 7 days a week, 365 days a year.

Self-Help Online Tools and Resources

For quick and easy problem resolution, Juniper Networks has designed an online self-service portal called the Customer Support Center (CSC) that provides you with the following features:

- Find CSC offerings: <http://www.juniper.net/customers/support/>
- Search for known bugs: <http://www2.juniper.net/kb/>
- Find product documentation: <http://www.juniper.net/techpubs/>
- Find solutions and answer questions using our Knowledge Base: <http://kb.juniper.net/>
- Download the latest versions of software and review release notes: <http://www.juniper.net/customers/csc/software/>

- Search technical bulletins for relevant hardware and software notifications:
<http://kb.juniper.net/InfoCenter/>
- Join and participate in the Juniper Networks Community Forum:
<http://www.juniper.net/company/communities/>
- Open a case online in the CSC Case Management tool: <http://www.juniper.net/cm/>

To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: <https://tools.juniper.net/SerialNumberEntitlementSearch/>

Opening a Case with JTAC

You can open a case with JTAC on the Web or by telephone.

- Use the Case Management tool in the CSC at <http://www.juniper.net/cm/>.
- Call 1-888-314-JTAC (1-888-314-5822 toll-free in the USA, Canada, and Mexico).

For international or direct-dial options in countries without toll-free numbers, see <http://www.juniper.net/support/requesting-support.html>.

PART 1

Overview

- [MLD in Subscriber Access Networks on page 3](#)

CHAPTER 1

MLD in Subscriber Access Networks

- [Dynamic MLD and Subscriber Access](#) on page 3

Dynamic MLD and Subscriber Access

Subscriber access supports the configuration of the Internet Multicast Listener Discovery (MLD) at the **[edit dynamic-profiles *profile-name* protocols]** hierarchy level. Statements configured at this hierarchy level are identical in function to those same statements used for static MLD configuration.

Related Documentation

- For general information about MLD, see the *Multicast Protocols Feature Guide for Routing Devices*.

PART 2

Configuration

- [Configuration Overview on page 7](#)
- [Configuration Tasks for MLD on page 9](#)
- [Configuration Statements on page 11](#)

CHAPTER 2

Configuration Overview

- [Dynamic MLD Configuration Overview on page 7](#)

Dynamic MLD Configuration Overview

The Multicast Listener Discovery (MLD) Protocol manages the membership of hosts and routers in multicast groups. IP version 6 (IPv6) multicast routers use MLD to learn, for each of their attached physical networks, which groups have interested listeners. Each router maintains a list of host multicast addresses that have listeners for each subnet, as well as a timer for each address. However, the router does not need to know the address of the listeners—just the address of the hosts. The router provides addresses to the multicast routing protocol it uses; this ensures that multicast packets are delivered to all subnets where there are interested listeners. In this way, MLD is used as the transport for the Protocol Independent Multicast (PIM) protocol.

Subscriber access supports the configuration of MLD within the **dynamic profiles** hierarchy for dynamically created interfaces. By specifying MLD statements within a dynamic profile, you can dynamically apply MLD configuration when a subscriber connects to an interface using a particular access technology (DHCP), enabling the subscriber to access a carrier (multicast) network.

Related Documentation

- *Dynamic Profiles Overview*
- *Configuring a Dynamic Profile for Client Access*
- *Examples: Configuring MLD*

CHAPTER 3

Configuration Tasks for MLD

- [Configuring Dynamic MLD on page 9](#)

Configuring Dynamic MLD

Configuration for Dynamic MLD is identical to that performed for static MLD, with the exception of their being configured at the `[edit dynamic-profiles profile-name protocols mld]` hierarchy level.

Related Documentation

- For specific MLD configuration tasks, see the *Multicast Protocols Feature Guide for Routing Devices*.

CHAPTER 4

Configuration Statements

- [\[edit dynamic-profiles\] Hierarchy Level](#) on page 11
- [accounting \(Dynamic MLD Interface\)](#) on page 19
- [disable \(Dynamic MLD\)](#) on page 19
- [exclude \(Dynamic MLD Interface\)](#) on page 20
- [group \(Dynamic MLD Interface\)](#) on page 21
- [group-count \(Dynamic MLD Interface\)](#) on page 22
- [group-increment \(Dynamic MLD Interface\)](#) on page 22
- [group-limit \(Dynamic MLD Interface\)](#) on page 23
- [group-policy \(Dynamic MLD Interface\)](#) on page 23
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- [source \(Dynamic MLD Interface\)](#) on page 29
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- [ssm-map \(Dynamic MLD Interface\)](#) on page 31
- [static \(Dynamic MLD Interface\)](#) on page 31
- [version \(Dynamic MLD Interface\)](#) on page 32

[\[edit dynamic-profiles\] Hierarchy Level](#)

```
dynamic-profiles {  
  profile-name {  
    class-of-service {  
      interfaces {  
        interface-name {  
          unit logical-unit-number {  
            classifiers {
```

```

        type (classifier-name | default);
    }
    output-traffic-control-profile (profile-name | $junos-cos-traffic-control-profile);
    rewrite-rules {
        dscp (rewrite-name | default);
        dscp-ipv6 (rewrite-name | default);
        ieee-802.1 (rewrite-name | default) vlan-tag (outer | outer-and-inner);
        inet-precedence (rewrite-name | default);
    }
}
}
}
}
scheduler-maps {
    map-name {
        forwarding-class class-name scheduler scheduler-name;
    }
}
schedulers {
    (scheduler-name) {
        buffer-size (percent percentage | remainder | temporal microseconds |
            $junos-cos-scheduler-bs);
        drop-profile-map loss-priority (any | low | medium-low | medium-high | high)
            protocol (any | non-tcp | tcp) drop-profile (profile-name | predefined-variable);
        excess-priority (low | high | $junos-cos-scheduler-excess-priority);
        excess-rate (percent percentage | percent $junos-cos-scheduler-excess-rate);
        overhead-accounting (shaping-mode) <bytes (byte-value>;
        priority (priority-level | $junos-cos-scheduler-priority);
        shaping-rate (rate | predefined-variable);
        transmit-rate (rate | percent percentage | remainder | percent percentage
            $junos-cos-scheduler-tx) <exact | rate-limit>;
    }
}
traffic-control-profiles profile-name {
    delay-buffer-rate (percent percentage | rate);
    excess-rate (percent percentage | proportion value | percent
        $junos-cos-excess-rate);
    guaranteed-rate (percent percentage | rate);
    overhead-accounting (shaping-mode) <bytes (byte-value>;
    scheduler-map map-name;
    shaping-rate (percent percentage | rate | predefined-variable);
}
}
firewall {
    family family {
        fast-update-filter filter-name {
            interface-specific;
            match-order [match-order];
            term term-name {
                from {
                    match-conditions;
                }
                then {
                    action;
                    action-modifiers;
                }
            }
        }
    }
}

```



```

    only-at-create;
filter filter-name {
interface-specific;
    term term-name {
        from {
            match-conditions;
        }
        then {
            action;
            action-modifiers;
        }
    }
}
policer policer-name {
    filter-specific;
    if-exceeding {
        (bandwidth-limit bps | bandwidth-percent percentage);
        burst-size-limit bytes;
    }
    logical-bandwidth-policer;
    logical-interface-policer;
    physical-interface-policer;
    then {
        policer-action;
    }
}
hierarchical-policer policer-name {
    aggregate {
        if-exceeding {
            bandwidth-limit-limit bps;
            burst-size-limit bytes;
        }
        then {
            policer-action;
        }
    }
}
premium {
    if-exceeding {
        bandwidth-limit bps;
        burst-size-limit bytes;
    }
    then {
        policer-action;
    }
}
}
three-color-policer policer-name {
    action {
        loss-priority high then discard;
    }
    logical-interface-policer;
    single-rate {
        (color-aware | color-blind);
        committed-burst-size bytes;
        committed-information-rate bps;
        excess-burst-size bytes;
    }
}

```

```
two-rate {
  (color-aware | color-blind);
  committed-burst-size bytes;
  committed-information-rate bps;
  peak-burst-size bytes;
  peak-information-rate bps;
}
}
}
policy-options {
  prefix-listname {
    ip-addresses;
  }
}
interfaces {
  interface-name {
    unit logical-unit-number {
      family family {
        access-concentrator name;
        address address;
        direct-connect;
        duplicate-protection;
        dynamic-profile profile-name;
        filter {
          adf {
            counter;
            input-precedence precedence;
            not-mandatory;
            output-precedence precedence;
            rule rule-value;
          }
          input filter-name {
            precedence precedence;
            shared-name filter-shared-name;
          }
          output filter-name {
            precedence precedence;
            shared-name filter-shared-name;
          }
        }
      }
      max-sessions number;
      max-sessions-vsa-ignore;
      rpf-check {
        fail-filter filter-name;
        mode loose;
      }
      service {
        input {
          service-set service-set-name {
            service-filter filter-name;
          }
          post-service-filter filter-name;
        }
        output {
          service-set service-set-name {
```

```

        service-filter filter-name;
    }
}
service-name-table table-name;
short-cycle-protection <lockout-time-min minimum-seconds lockout-time-max
    maximum-seconds>;
unnumbered-address interface-name <preferred-source-address address>;
}
ppp-options {
    chap;
    pap;
}
vlan-id number;
}
vlan-tagging;
}
interface-set interface-set-name {
    interface interface-name {
        unit logical-unit-number;
    }
}
demux0 {
    unit logical-unit-number {
        demux-options {
            underlying-interface interface-name
        }
        demux-source {
            source-prefix;
        }
        family family {
            access-concentrator name;
            address address;
            direct-connect;
            duplicate-protection;
            dynamic-profile profile-name;
            filter {
                input filter-name;
                output filter-name;
            }
            mac-validate (loose | strict):
            max-sessions number;
            max-sessions-vsa-ignore;
            service-name-table table-name;
            short-cycle-protection <lockout-time-min minimum-seconds lockout-time-max
                maximum-seconds>;
            unnumbered-address interface-name <preferred-source-address address>;
        }
    }
}
pp0 {
    unit logical-unit-number {
        keepalives interval seconds;
        no-keepalives;
        pppoe-options {
            underlying-interface interface-name;

```

```

        server;
    }
    ppp-options {
        authentication [ authentication-protocols ];
        chap {
            challenge-length minimum minimum-length maximum maximum-length;
        }
        pap;
    }
    family inet {
        unnumbered-address interface-name address;
        address address;
        service {
            input {
                service-set service-set-name {
                    service-filter filter-name;
                }
                post-service-filter filter-name;
            }
            output {
                service-set service-set-name {
                    service-filter filter-name;
                }
            }
        }
        filter {
            input filter-name {
                precedence precedence;
            }
            output filter-name {
                precedence precedence;
            }
        }
    }
}
}
}
}
protocols {
    igmp {
        interface interface-name {
            accounting;
            disable;
            group-policy;
            immediate-leave;
            no-accounting;
            promiscuous-mode;
            ssm-map ssm-map-name;
            static {
                group group {
                    source source;
                }
            }
            version version;
        }
    }
    mld {
        interface interface-name {

```

```

    disable;
    (accounting | no-accounting);
    group-policy;
    immediate-leave;
    oif-map;
    passive;
    ssm-map ssm-map-name;
    static {
        group multicast-group-address {
            exclude;
            group-count number;
            group-increment increment;
            source ip-address {
                source-count number;
                source-increment increment;
            }
        }
    }
    version version;
}
}
router-advertisement {
    interface interface-name {
        current-hop-limit number;
        default-lifetime seconds;
        (managed-configuration | no-managed-configuration);
        max-advertisement-interval seconds;
        min-advertisement-interval seconds;
        (other-stateful-configuration | no-other-stateful-configuration);
        prefix prefix {
            (autonomous | no-autonomous);
            (on-link | no-on-link);
            preferred-lifetime seconds;
            valid-lifetime seconds;
        }
        reachable-time milliseconds;
        retransmit-timer milliseconds;
    }
}
}
}
routing-instances routing-instance-name {
    interface interface-name;
    routing-options {
        access {
            route prefix {
                next-hop next-hop;
                metric route-cost;
                preference route-distance;
                tag route-tag;
            }
        }
    }
    access-internal {
        route subscriber-ip-address {
            qualified-next-hop underlying-interface {

```

```
        mac-address address;
    }
}
}
multicast {
    interface interface-name {
        no-qos-adjust;
    }
}
}
rib routing-table-name {
    access {
        route prefix {
            next-hop next-hop;
            metric route-cost;
            preference route-distance;
            tag route-tag;
        }
    }
    access-internal {
        route subscriber-ip-address {
            qualified-next-hop underlying-interface {
                mac-address address;
            }
        }
    }
}
}
routing-options {
    access {
        route prefix {
            next-hop next-hop;
            metric route-cost;
            preference route-distance;
            tag route-tag;
        }
    }
    access-internal {
        route subscriber-ip-address {
            qualified-next-hop underlying-interface {
                mac-address address;
            }
        }
    }
    multicast {
        interface interface-name {
            no-qos-adjust;
        }
    }
}
variables {
    variable-name {
        default-value default-value;
        equals expression;
        mandatory;
        uid;
    }
}
```

```

        uid-reference;
    }
}

```

Related Documentation	<ul style="list-style-type: none"> • <i>Dynamic Profiles Overview</i> • <i>CoS for Subscriber Access Overview</i> • <i>Configuring a Basic Dynamic Profile</i> • <i>Configuring Static Hierarchical Scheduling and Queuing in a Dynamic Profile for Subscriber Access</i> • <i>Two-Color Policer Configuration Overview</i> • <i>Three-Color Policer Configuration Overview</i> • <i>Hierarchical Policer Configuration Overview</i> • <i>Guidelines for Applying Traffic Policers</i>
------------------------------	--

accounting (Dynamic MLD Interface)

Syntax	(accounting no-accounting);
Hierarchy Level	[edit dynamic-profiles <i>profile-name</i> protocols mld interface <i>interface-name</i>]
Release Information	Statement introduced in Junos OS Release 10.1.
Description	Enable or disable the collection of MLD join and leave event statistics for a dynamic interface.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • <i>Example: Recording MLD Join and Leave Events</i>

disable (Dynamic MLD)

Syntax	disable;
Hierarchy Level	[edit dynamic-profiles <i>profile-name</i> protocols mld interface <i>interface-name</i>]
Release Information	Statement introduced in Junos OS Release 10.1.
Description	Disable MLD on the dynamic interface.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • <i>Disabling MLD</i>

exclude (Dynamic MLD Interface)

Syntax	exclude;
Hierarchy Level	[edit dynamic-profiles <i>profile-name</i> protocols mld interface <i>interface-name</i> static group <i>multicast-group-address</i>]
Release Information	Statement introduced in Junos OS Release 10.1.
Description	Configure the group to operate in exclude mode on the dynamic interface. In exclude mode all sources except the address configured are accepted for the group. By default, the group operates in include mode.
Required Privilege Level	view-level—To view this statement in the configuration. control-level—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• <i>Enabling MLD Static Group Membership</i>

group (Dynamic MLD Interface)

Syntax `group multicast-group-address {
 exclude;
 group-count number;
 group-increment increment;
 source ip-address {
 source-count number;
 source-increment increment;
 }
}`

Hierarchy Level [edit dynamic-profiles *profile-name* protocols **mld interface interface-name static**]

Release Information Statement introduced in Junos OS Release 10.1.

Description The MLD multicast group address and (optionally) the source address for the multicast group being dynamically configured on an interface.

Options *multicast-group-address*—Address of the group.



NOTE: You must specify a unique address for each group.

The remaining statements are explained separately.

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

Related Documentation

- *Enabling MLD Static Group Membership*

group-count (Dynamic MLD Interface)

Syntax	<code>group-count <i>number</i>;</code>
Hierarchy Level	[edit dynamic-profiles <i>profile-name</i> protocols mld interface <i>interface-name</i> static group <i>multicast-group-address</i>]
Release Information	Statement introduced in Junos OS Release 10.1.
Description	Configure the number of static groups to be created over the dynamic interface.
Options	<i>number</i> —Number of static groups. Default: 1 Range: 1 through 512
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• <i>Enabling MLD Static Group Membership</i>

group-increment (Dynamic MLD Interface)

Syntax	<code>group-increment <i>increment</i>;</code>
Hierarchy Level	[edit dynamic-profiles <i>profile-name</i> protocols mld interface <i>interface-name</i> static group <i>multicast-group-address</i> source]
Release Information	Statement introduced in Junos OS Release 10.1.
Description	Configure the number of times the address should be incremented for each static group created on a dynamic interface. The increment is specified in a format similar to an IPv6 address.
Options	<i>increment</i> —Number of times the address should be incremented. Default: ::1 Range: ::1 through ffff:ffff:ffff:ffff:ffff:ffff:ffff:ffff;
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• <i>Enabling MLD Static Group Membership</i>


group-limit (Dynamic MLD Interface)

Syntax	<code>group-limit <i>limit</i>;</code>
Hierarchy Level	[edit dynamic-profiles <i>profile-name</i> protocols mld interface <i>interface-name</i>]
Release Information	Statement introduced in Junos OS Release 10.4.
Description	Configure a limit for the number of multicast groups (or [S,G] channels in MLDv2) allowed on a dynamic logical interface. After this limit is reached, new reports will be ignored and all related flows are not flooded on the logical interface.
Default	By default, there is no limit to the number of multicast groups that can join the interface.
Options	<i>limit</i> —group limit value for the interface. Range: 1 through 32767
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • <i>Configuring a Dynamic Profile for Client Access</i> • <i>Configuring the Number of MLD Multicast Group Joins on Logical Interfaces</i>

group-policy (Dynamic MLD Interface)

Syntax	<code>group-policy <i>policy-name</i>;</code>
Hierarchy Level	[edit dynamic-profiles <i>profile-name</i> protocols mld interface <i>interface-name</i>]
Release Information	Statement introduced in Junos OS Release 10.1.
Description	Compare the MLDv1 or MLDv2 group against the specified group policy, after receiving an MLD report, and perform the action configured in that policy (for example, reject the report).
Options	<i>policy-name</i> —Name of the group policy.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • <i>Filtering Unwanted MLD Reports at the MLD Interface Level</i>

immediate-leave (Dynamic MLD Interface)

Syntax	immediate-leave;
Hierarchy Level	[edit dynamic-profiles <i>profile-name</i> protocols mld interface <i>interface-name</i>]
Release Information	Statement introduced in Junos OS Release 10.1.
Description	<p>The immediate leave setting is useful for minimizing the leave latency of MLD memberships. When this setting is enabled, the routing device leaves the multicast group immediately after the last host leaves the multicast group.</p> <p>The immediate-leave setting enables host tracking, meaning that the device keeps track of the hosts that send join messages. This allows MLD to determine when the last host sends a leave message for the multicast group.</p> <p>When the immediate leave setting is enabled, the device removes an interface from the forwarding-table entry without first sending MLD group-specific queries to the interface. The interface is pruned from the multicast tree for the multicast group specified in the MLD leave message. The immediate leave setting ensures optimal bandwidth management for hosts on a switched network, even when multiple multicast groups are being used simultaneously.</p> <p>When immediate leave is disabled and one host sends a leave group message, the routing device first sends a group query to determine if another receiver responds. If no receiver responds, the routing device removes all hosts on the interface from the multicast group. Immediate leave is disabled by default for both MLD version 1 and MLD version 2.</p>
	<div> NOTE: Although host tracking is enabled for IGMPv2 and MLDv1 when you enable immediate leave, use immediate leave with these versions only when there is one host on the interface. The reason is that IGMPv2 and MLDv1 use a report suppression mechanism whereby only one host on an interface sends a group join report in response to a membership query. The other interested hosts suppress their reports. The purpose of this mechanism is to avoid a flood of reports for the same group. But it also interferes with host tracking, because the router only knows about the one interested host and does not know about the others.</div>
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• <i>Specifying Immediate-Leave Host Removal for MLD</i>

interface (Dynamic MLD)

Syntax	<pre> interface <i>interface-name</i> { disable; (accounting no-accounting); group-policy; immediate-leave; oif-map; passive; ssm-map <i>ssm-map-name</i>; static { group <i>mcast-group-address</i> { exclude; group-count <i>number</i>; group-increment <i>increment</i>; source <i>ip-address</i> { source-count <i>number</i>; source-increment <i>increment</i>; } } } version <i>version</i>; } </pre>
Hierarchy Level	[edit dynamic-profiles <i>profile-name</i> protocols mld]
Release Information	Statement introduced in Junos OS Release 10.1.
Description	Enable MLD on a dynamic interface and configure interface-specific properties.
Options	<p><i>interface-name</i>—Variable for the interface. Specify the interface variable (\$junos-interface-name) to indicate that the dynamic profile chooses an interface for the accessing client.</p> <p>The remaining statements are explained separately.</p>
Required Privilege Level	<p>routing—To view this statement in the configuration.</p> <p>routing-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • <i>Enabling MLD</i>

mld (Dynamic Profiles)

```
Syntax  mld {  
        interface interface-name {  
            disable;  
            (accounting | no-accounting);  
            group-policy;  
            immediate-leave;  
            oif-map;  
            passive;  
            ssm-map ssm-map-name;  
            static {  
                group multicast-group-address {  
                    exclude;  
                    group-count number;  
                    group-increment increment;  
                    source ip-address {  
                        source-count number;  
                        source-increment increment;  
                    }  
                }  
            }  
            version version;  
        }  
    }
```

Hierarchy Level [edit dynamic-profiles *profile-name* protocols]

Release Information Statement introduced in Junos OS Release 10.1.

Description Configure interface-specific MLD values on dynamic interfaces.

Options The statements are explained separately.

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


Related Documentation

- *Enabling MLD*

oif-map (Dynamic MLD Interface)

Syntax	<code>oif-map map-name;</code>
Hierarchy Level	[edit dynamic-profiles <i>profile-name</i> protocols mld interface <i>interface-name</i>]
Release Information	Statement introduced in Junos OS Release 10.1.
Description	Associate an outgoing interface (OIF) map to a dynamic MLD logical interface. The OIF map is a routing policy statement that can contain multiple terms.
Options	map-name —Name of the OIF map.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • <i>Example: Configuring Multicast with Subscriber VLANs</i>

passive (Dynamic MLD Interface)

Syntax	<code>passive <allow-receive> <send-general-query> <send-group-query>;</code>
Hierarchy Level	[edit dynamic-profiles <i>profile-name</i> protocols mld interface <i>interface-name</i>]
Release Information	Statement introduced in Junos OS Release 10.1.
Description	Specify that MLD run on the interface and either not send and receive control traffic or selectively send and receive control traffic such as MLD reports, queries, and leaves.
	<div style="display: flex; align-items: center;">  <div style="margin-left: 10px;"> <p>NOTE: You can selectively activate up to two out of the three available options for the passive statement while keeping the other functions passive (inactive). Activating all three options would be equivalent to not using the passive statement.</p> </div> </div>
Options	<p>allow-receive—(Optional) Enables MLD to receive control traffic on the interface.</p> <p>send-general-query—(Optional) Enables MLD to send general queries on the interface.</p> <p>send-group-query—(Optional) Enables MLD to send group-specific and group-source-specific queries on the interface.</p>
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • <i>Example: Configuring Multicast with Subscriber VLANs</i>

protocols (Dynamic Profiles)

```

Syntax protocols {
    igmp {
        interface interface-name {
            accounting;
            disable;
            group-policy;
            immediate-leave
            no-accounting;
            promiscuous-mode;
            ssm-map ssm-map-name;
            static {
                group group {
                    source source;
                }
            }
            version version;
        }
    }
    mld {
        interface interface-name {
            disable;
            (accounting | no-accounting);
            group-policy;
            immediate-leave;
            oif-map;
            passive;
            ssm-map ssm-map-name;
            static {
                group mcast-group-address {
                    exclude;
                    group-count number;
                    group-increment increment;
                    source ip-address {
                        source-count number;
                        source-increment increment;
                    }
                }
            }
            version version;
        }
    }
    router-advertisement {
        interface interface-name {
            current-hop-limit number;
            default-lifetime seconds;
            (managed-configuration | no-managed-configuration);
            max-advertisement-interval seconds;
            min-advertisement-interval seconds;
            (other-stateful-configuration | no-other-stateful-configuration);
            prefix prefix;
            reachable-time milliseconds;
            retransmit-timer milliseconds;
        }
    }
}

```



```

    }
  }
}

```

Hierarchy Level	[edit dynamic-profiles <i>profile-name</i>]
Release Information	Statement introduced in Junos OS Release 9.2. Support at the [edit dynamic-profiles <i>profile-name</i> protocols mld] and [edit dynamic-profiles <i>profile-name</i> protocols router-advertisement] hierarchy levels introduced in Junos OS Release 10.1.
Description	Enable IGMP on the router. IGMP must be enabled for the router to receive multicast packets.
Default	IGMP is disabled on the router. IGMP is automatically enabled on all broadcast interfaces when you configure Protocol Independent Multicast (PIM) or Distance Vector Multicast Routing Protocol (DVMRP). The statements are explained separately.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • <i>Configuring IGMP</i> • <i>Examples: Configuring MLD</i>

source (Dynamic MLD Interface)

Syntax	<pre> source <i>ip-address</i> { source-count <i>number</i>; source-increment <i>increment</i>; } </pre>
Hierarchy Level	[edit dynamic-profiles <i>profile-name</i> protocols mld interface <i>interface-name</i> static group <i>multicast-group-address</i>]
Release Information	Statement introduced in Junos OS Release 10.1.
Description	IP version 6 (IPv6) unicast source address for the multicast group being configured on a dynamic interface.
Options	<i>ip-address</i> —One or more IPv6 unicast addresses.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • <i>Enabling MLD Static Group Membership</i>

source-count (Dynamic MLD Interface)

Syntax	<code>source-count <i>number</i>;</code>
Hierarchy Level	[edit dynamic-profiles <i>profile-name</i> protocols mld interface <i>interface-name</i> static group <i>multicast-group-address</i> source]
Release Information	Statement introduced in Junos OS Release 10.1.
Description	Configure the number of multicast source addresses that should be accepted for each static group created on dynamic interfaces.
Options	<i>number</i> —Number of source addresses. Default: 1 Range: 1 through 1024
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• <i>Enabling MLD Static Group Membership</i>

source-increment (Dynamic MLD Interface)

Syntax	<code>source-increment <i>increment</i>;</code>
Hierarchy Level	[edit dynamic-profile <i>profile-name</i> protocols mld interface <i>interface-name</i> static group <i>multicast-group-address</i> source]
Release Information	Statement introduced in Junos OS Release 10.1.
Description	Configure the number of times the address should be incremented for each static group created on the dynamic interface. The increment is specified in a format similar to an IPv6 address.
Options	<i>increment</i> —Number of times the source address should be incremented. Default: ::1 Range: ::1 through ffff:ffff:ffff:ffff:ffff:ffff:ffff:ffff;
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• <i>Enabling MLD Static Group Membership</i>

ssm-map (Dynamic MLD Interface)

Syntax	<code>ssm-map ssm-map-name;</code>
Hierarchy Level	[edit dynamic-profiles <i>profile-name</i> protocols ml interface <i>interface-name</i>]
Release Information	Statement introduced in Junos OS Release 10.1.
Description	Apply an SSM map to a dynamic MLD interface.
Options	<i>ssm-map-name</i> —Name of SSM map.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • <i>Example: Configuring SSM Mapping</i>

static (Dynamic MLD Interface)

Syntax	<pre>static { group multicast-group-address { exclude; group-count number; group-increment increment; source ip-address { source-count number; source-increment increment; } } }</pre>
Hierarchy Level	[edit dynamic-profiles <i>profile-name</i> protocols ml interface <i>interface-name</i>]
Release Information	Statement introduced in Junos OS Release 10.1.
Description	<p>Test multicast forwarding on an interface.</p> <p>The remaining statements are explained separately.</p>
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.
Related Documentation	<ul style="list-style-type: none"> • <i>Enabling MLD Static Group Membership</i>

version (Dynamic MLD Interface)

Syntax	<code>version version;</code>
Hierarchy Level	[edit dynamic-profiles <i>profile-name</i> protocols mld interface <i>interface-name</i>]
Release Information	Statement introduced in Junos OS Release 10.1.
Description	Configure the MLD version explicitly on the dynamic interface. MLD version 2 (MLDv2) is used only to support source-specific multicast (SSM).
Options	version —MLD version to run on the interface. Range: 1 or 2 Default: 1 (MLDv1)
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.
Related Documentation	<ul style="list-style-type: none">• <i>Modifying the MLD Version</i>

PART 3

Administration

- [Monitoring Commands on page 35](#)

CHAPTER 5

Monitoring Commands

- `clear mld membership`
- `clear mld statistics`
- `show mld group`
- `show mld interface`
- `show mld statistics`

clear mld membership

Syntax	<code>clear mld membership</code> <code><group <i>group-name</i>> <interface <i>interface-name</i>></code> <code><logical-system (all <i>logical-system-name</i>)></code>
Release Information	Command introduced before Junos OS Release 7.4.
Description	Clear Multicast Listener Discovery (MLD) group membership.
Options	none —Clear all MLD memberships. group <i>group-name</i> —(Optional) Clear MLD membership for the specified group. interface <i>interface-name</i> —(Optional) Clear MLD group membership for the specified interface. logical-system (all <i>logical-system-name</i>) —(Optional) Perform this operation on all logical systems or on a particular logical system.
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none">• show mld group on page 38
List of Sample Output	clear mld membership on page 36
Output Fields	When you enter this command, you are provided feedback on the status of your request.

Sample Output

clear mld membership

```
user@host> clear mld membership
```


clear mld statistics

Syntax	clear mld statistics <interface <i>interface-name</i> > <logical-system (all <i>logical-system-name</i>)>
Release Information	Command introduced before Junos OS Release 7.4.
Description	Clear Multicast Listener Discovery (MLD) statistics.
Options	<p>none—(Same as logical-system all) Clear MLD statistics for all interfaces.</p> <p>interface <i>interface-name</i>—(Optional) Clear MLD statistics for the specified interface.</p> <p>logical-system (all <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
Required Privilege Level	clear
Related Documentation	<ul style="list-style-type: none"> • show mld statistics on page 46
List of Sample Output	clear mld statistics on page 37
Output Fields	When you enter this command, you are provided feedback on the status of your request.

Sample Output

clear mld statistics

```
user@host> clear mld statistics
```

show mld group

Syntax	show mld group <brief detail> <group-name> <logical-system (all <i>logical-system-name</i>)>
Release Information	Command introduced before Junos OS Release 7.4.
Description	Display information about Multicast Listener Discovery (MLD) group membership.
Options	<p>none—Display standard information about all MLD groups.</p> <p>brief detail—(Optional) Display the specified level of output.</p> <p>group-name—(Optional) Display MLD information about the specified group.</p> <p>logical-system (all <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> clear mld membership on page 36
List of Sample Output	<p>show mld group (Include Mode) on page 39</p> <p>show mld group (Exclude Mode) on page 40</p> <p>show mld group brief on page 40</p> <p>show mld group detail (Include Mode) on page 40</p> <p>show mld group detail (Exclude Mode) on page 41</p>
Output Fields	Table 3 on page 38 describes the output fields for the show mld group command. Output fields are listed in the approximate order in which they appear.

Table 3: show mld group Output Fields

Field Name	Field Description	Level of Output
Interface	Name of the interface that received the MLD membership report; local means that the local router joined the group itself.	All levels
Group	Group address.	All levels
Source	Source address.	All levels
Group Mode	Mode the SSM group is operating in: Include or Exclude .	All levels
Last reported by	Address of the host that last reported membership in this group.	All levels

Table 3: show mld group Output Fields (*continued*)

Field Name	Field Description	Level of Output
Source timeout	Time remaining until the group traffic is no longer forwarded. The timer is refreshed when a listener in include mode sends a report. A group in exclude mode or configured as a static group displays a zero timer.	detail
Timeout	Time remaining until the group membership is removed.	brief none
Group timeout	Time remaining until a group in exclude mode moves to include mode. The timer is refreshed when a listener in exclude mode sends a report. A group in include mode or configured as a static group displays a zero timer.	detail
Type	Type of group membership: <ul style="list-style-type: none"> • Dynamic—Host reported the membership. • Static—Membership is configured. 	All levels

Sample Output

show mld group (Include Mode)

```

user@host> show mld group
Interface: fe-0/1/2.0
  Group: ff02::1:ff05:1a67
    Group mode: Include
    Source: ::
    Last reported by: fe80::2e0:81ff:fe05:1a67
    Timeout:      245 Type: Dynamic
  Group: ff02::1:ffa8:c35e
    Group mode: Include
    Source: ::
    Last reported by: fe80::2e0:81ff:fe05:1a67
    Timeout:      241 Type: Dynamic
  Group: ff02::2:43e:d7f6
    Group mode: Include
    Source: ::
    Last reported by: fe80::2e0:81ff:fe05:1a67
    Timeout:      244 Type: Dynamic
  Group: ff05::2
    Group mode: Include
    Source: ::
    Last reported by: fe80::2e0:81ff:fe05:1a67
    Timeout:      244 Type: Dynamic
Interface: local
  Group: ff02::2
    Source: ::
    Last reported by: Local
    Timeout:      0 Type: Dynamic
  Group: ff02::16
    Source: ::
    Last reported by: Local
    Timeout:      0 Type: Dynamic

```

show mld group (Exclude Mode)

```
user@host> show mld group
Interface: ge-0/2/2.0
Interface: ge-0/2/0.0
  Group: ff02::6
    Source: ::
    Last reported by: fe80::21f:12ff:feb6:4b3a
    Timeout:      245 Type: Dynamic
  Group: ff02::16
    Source: ::
    Last reported by: fe80::21f:12ff:feb6:4b3a
    Timeout:      28 Type: Dynamic
Interface: local
  Group: ff02::2
    Source: ::
    Last reported by: Local
    Timeout:      0 Type: Dynamic
  Group: ff02::16
    Source: ::
    Last reported by: Local
    Timeout:      0 Type: Dynamic
```

show mld group brief

The output for the **show mld group brief** command is identical to that for the **show mld group** command. For sample output, see [show mld group \(Include Mode\) on page 39](#) [show mld group \(Exclude Mode\) on page 40](#).

show mld group detail (Include Mode)

```
user@host> show mld group detail
Interface: fe-0/1/2.0
  Group: ff02::1:ff05:1a67
    Group mode: Include
    Source: ::
    Last reported by: fe80::2e0:81ff:fe05:1a67
    Timeout:      224 Type: Dynamic
  Group: ff02::1:ffa8:c35e
    Group mode: Include
    Source: ::
    Last reported by: fe80::2e0:81ff:fe05:1a67
    Timeout:      220 Type: Dynamic
  Group: ff02::2:43e:d7f6
    Group mode: Include
    Source: ::
    Last reported by: fe80::2e0:81ff:fe05:1a67
    Timeout:      223 Type: Dynamic
  Group: ff05::2
    Group mode: Include
    Source: ::
    Last reported by: fe80::2e0:81ff:fe05:1a67
    Timeout:      223 Type: Dynamic
Interface: so-1/0/1.0
  Group: ff02::2
    Group mode: Include
    Source: ::
    Last reported by: fe80::280:42ff:fe15:f445
    Timeout:      258 Type: Dynamic
Interface: local
```

```

Group: ff02::2
  Group mode: Include
  Source: ::
  Last reported by: Local
  Timeout: 0 Type: Dynamic
Group: ff02::16
  Source: ::
  Last reported by: Local
  Timeout: 0 Type: Dynamic

```

show mld group detail (Exclude Mode)

```

user@host> show mld group detail
Interface: ge-0/2/2.0
Interface: ge-0/2/0.0
  Group: ff02::6
    Group mode: Exclude
    Source: ::
    Source timeout: 0
    Last reported by: fe80::21f:12ff:feb6:4b3a
    Group timeout: 226 Type: Dynamic
  Group: ff02::16
    Group mode: Exclude
    Source: ::
    Source timeout: 0
    Last reported by: fe80::21f:12ff:feb6:4b3a
    Group timeout: 246 Type: Dynamic
Interface: local
  Group: ff02::2
    Group mode: Exclude
    Source: ::
    Source timeout: 0
    Last reported by: Local
    Group timeout: 0 Type: Dynamic
  Group: ff02::16
    Group mode: Exclude
    Source: ::
    Source timeout: 0
    Last reported by: Local
    Group timeout: 0 Type: Dynamic

```

show mld interface

Syntax	<pre>show mld interface <brief detail> <interface-name> <logical-system (all logical-system-name)></pre>
Release Information	Command introduced before Junos OS Release 7.4.
Description	Display information about Multicast Listener Discovery (MLD)-enabled interfaces.
Options	<p>none—Display standard information about all MLD-enabled interfaces.</p> <p>brief detail—(Optional) Display the specified level of output.</p> <p>interface-name—(Optional) Display information about the specified interface.</p> <p>logical-system (all logical-system-name)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> clear mld membership on page 36
List of Sample Output	<p>show mld interface on page 44</p> <p>show mld interface brief on page 44</p> <p>show mld interface detail on page 45</p> <p>show mld interface <interface-name> on page 45</p>
Output Fields	<p>Table 4 on page 42 describes the output fields for the show mld interface command. Output fields are listed in the approximate order in which they appear.</p>

Table 4: show mld interface Output Fields

Field Name	Field Description	Level of Output
Interface	Name of the interface.	All levels
Querier	Address of the router that has been elected to send membership queries.	All levels
State	State of the interface: Up or Down .	All levels
SSM Map Policy	Name of the source-specific multicast (SSM) map policy that has been applied to the interface.	All levels
SSM Map Policy	Name of the source-specific multicast (SSM) map policy at the MLD interface.	All levels
Timeout	How long until the MLD querier is declared to be unreachable, in seconds.	All levels
Version	MLD version being used on the interface: 1 or 2.	All levels

Table 4: show mld interface Output Fields (*continued*)

Field Name	Field Description	Level of Output
Groups	Number of groups on the interface.	All levels
Passive	<p>State of the passive mode option:</p> <ul style="list-style-type: none"> • On—Indicates that the router can run IGMP or MLD on the interface but not send or receive control traffic such as IGMP or MLD reports, queries, and leaves. • Off—Indicates that the router can run IGMP or MLD on the interface and send or receive control traffic such as IGMP or MLD reports, queries, and leaves. <p>The passive statement enables you to selectively activate up to two out of a possible three available query or control traffic options. When enabled, the following options appear after the on state declaration:</p> <ul style="list-style-type: none"> • send-general-query—The interface sends general queries. • send-group-query—The interface sends group-specific and group-source-specific queries. • allow-receive—The interface receives control traffic 	All levels
OIF map	Name of the OIF map associated to the interface.	All levels
SSM map	Name of the source-specific multicast (SSM) map used on the interface, if configured.	All levels
Group limit	Maximum number of groups allowed on the interface. Any memberships requested after the limit is reached are rejected.	All levels
Group threshold	<p>Configured threshold at which a warning message is generated.</p> <p>This threshold is based on a percentage of groups received on the interface. If the number of groups received reaches the configured threshold, the device generates a warning message.</p>	All levels
Group log-interval	Time (in seconds) between consecutive log messages.	All levels
Immediate Leave	<p>State of the immediate leave option:</p> <ul style="list-style-type: none"> • On—Indicates that the router removes a host from the multicast group as soon as the router receives a multicast listener done message from a host associated with the interface. • Off—Indicates that after receiving a multicast listener done message, instead of removing a host from the multicast group immediately, the router sends a group query to determine if another receiver responds. 	All levels

Table 4: show mld interface Output Fields (*continued*)

Field Name	Field Description	Level of Output
Configured Parameters	<p>Information configured by the user.</p> <ul style="list-style-type: none"> • MLD Query Interval (.1 secs)—Interval at which this router sends membership queries when it is the querier. • MLD Query Response Interval (.1 secs)—Time that the router waits for a report in response to a general query. • MLD Last Member Query Interval (.1 secs)—Time that the router waits for a report in response to a group-specific query. • MLD Robustness Count—Number of times the router retries a query. 	All levels
Derived Parameters	<p>Derived information.</p> <ul style="list-style-type: none"> • MLD Membership Timeout (.1 secs)—Timeout period for group membership. If no report is received for these groups before the timeout expires, the group membership will be removed. • MLD Other Querier Present Timeout (.1 secs)—Time that the router waits for the IGMP querier to send a query. 	All levels

Sample Output

show mld interface

```

user@host> show mld interface
Interface: fe-0/0/0
  Querier: None
  State: Up      Timeout:      0    Version:  1    Groups:      0
  SSM Map Policy: ssm-policy-A
Interface: at-0/3/1.0
  Querier: 8038::c0a8:c345
  State: Up      Timeout:    None    Version:  1    Groups:      0
  SSM Map Policy: ssm-policy-B
Interface: fe-1/0/1.0
  Querier: ::192.168.195.73
  State: Up      Timeout:    None    Version:  1    Groups:      3
  SSM Map Policy: ssm-policy-C
  SSM map: ipv6map1
Immediate Leave: On

Configured Parameters:
MLD Query Interval (.1 secs): 1250
MLD Query Response Interval (.1 secs): 100
MLD Last Member Query Interval (.1 secs): 10
MLD Robustness Count: 2

Derived Parameters:
MLD Membership Timeout (.1secs): 2600
MLD Other Querier Present Timeout (.1 secs): 2550

```

show mld interface brief

The output for the **show mld interface brief** command is identical to that for the **show mld interface** command. For sample output, see [show mld interface on page 44](#).

show mld interface detail

The output for the **show mld interface detail** command is identical to that for the **show mld interface** command. For sample output, see [show mld interface on page 44](#).

show mld interface <interface-name>

```
user@host# show mld interface ge-3/2/0.0
Interface: ge-3/2/0.0
Querier: 20.1.1.1
State: Up Timeout:   None Version: 3 Groups:    1
Group limit: 8
Group threshold: 60
Group log-interval: 10
Immediate leave: Off
Promiscuous mode: Off
```

show mld statistics

Syntax	show mld statistics <interface <i>interface-name</i> > <logical-system (all <i>logical-system-name</i>)>
Release Information	Command introduced before Junos OS Release 7.4.
Description	Display information about Multicast Listener Discovery (MLD) statistics.
Options	<p>none—Display MLD statistics for all interfaces.</p> <p>interface <i>interface-name</i>—(Optional) Display statistics about the specified interface.</p> <p>logical-system (all <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> clear mld statistics on page 37
List of Sample Output	show mld statistics on page 47 show mld statistics interface on page 48
Output Fields	<p>Table 5 on page 46 describes the output fields for the show mld statistics command. Output fields are listed in the approximate order in which they appear.</p>

Table 5: show mld statistics Output Fields

Field Name	Field Description
Received	Number of received packets.
Sent	Number of transmitted packets.
Rx errors	Number of received packets that contained errors.

Table 5: show mld statistics Output Fields (*continued*)

Field Name	Field Description
MLD Message type	Summary of MLD statistics. <ul style="list-style-type: none"> • Listener Query (v1/v2)—Number of membership queries sent and received. • Listener Report (v1)—Number of version 1 membership reports sent and received. • Listener Done (v1/v2)—Number of Listener Done messages sent and received. • Listener Report (v2)—Number of version 2 membership reports sent and received. • Other Unknown types—Number of unknown message types received. • MLD v2 source required for SSM—Number of MLD version 2 messages received that contained no source. • MLD v2 mode not applicable for SSM—Number of MLD version 2 messages received that did not contain a mode applicable for source-specific multicast (SSM).
MLD Global Statistics	Summary of MLD statistics for all interfaces. <ul style="list-style-type: none"> • Bad Length—Number of messages received with length errors so severe that further classification could not occur. • Bad Checksum—Number of messages received with an invalid IP checksum. No further classification was performed. • Bad Receive If—Number of messages received on an interface not enabled for MLD. • Rx non-local—Number of messages received from nonlocal senders. • Timed out—Number of groups that timed out as a result of not receiving an explicit leave message. • Rejected Report—Number of reports dropped because of the MLD group policy. • Total Interfaces—Number of interfaces configured to support IGMP.

Sample Output

show mld statistics

```

user@host> show mld statistics
MLD packet statistics for all interfaces
MLD Message type      Received      Sent  Rx errors
Listener Query (v1/v2)    0            2      0
Listener Report (v1)      0            0      0
Listener Done (v1/v2)     0            0      0
Listener Report (v2)      0            0      0
Other Unknown types      0            0      0
MLD v2 source required for SSM  2
MLD v2 mode not applicable for SSM 0

MLD Global Statistics
Bad Length              0
Bad Checksum            0
Bad Receive If          0
Rx non-local            0
Timed out               0

```

Rejected Report	0
Total Interfaces	2

show mld statistics interface

```
user@host> show mld statistics interface fe-1/0/1.0
MLD interface packet statistics for fe-1/0/1.0
MLD Message type      Received      Sent  Rx errors
Listener Query (v1/v2)    0           2      0
Listener Report (v1)      0           0      0
Listener Done (v1/v2)     0           0      0
Listener Report (v2)      0           0      0
Other Unknown types              0      0
MLD v2 source required for SSM    2
MLD v2 mode not applicable for SSM 0

MLD Global Statistics
Bad Length                0
Bad Checksum              0
Bad Receive If            0
Rx non-local              0
Timed out                 0
Rejected Report           0
Total Interfaces          2
```

PART 4

Troubleshooting

- [Acquiring Troubleshooting Information on page 51](#)

CHAPTER 6

Acquiring Troubleshooting Information

- [Collecting Subscriber Access Logs Before Contacting Juniper Technical Support on page 51](#)

Collecting Subscriber Access Logs Before Contacting Juniper Technical Support

Problem When you experience a subscriber access problem in your network, we recommend that you collect certain logs before you contact Juniper Technical Support. This topic shows you the most useful logs for a variety of network implementations. In addition to the relevant log information, you must also collect standard troubleshooting information and send it to Juniper Technical Support in your request for assistance.

Solution To collect standard troubleshooting information:

- Redirect the command output to a file.

```
user@host> request support information | save rsi-1
```

To configure logging to assist Juniper Technical Support:

1. Review the following blocks of statements to determine which apply to your configuration.

[edit]

```
set system syslog archive size 100m files 25
set system auto-configuration traceoptions file filename
set system auto-configuration traceoptions file filename size 100m files 25
set protocols ppp-service traceoptions file filename size 100m files 25
set protocols ppp-service traceoptions level all
set protocols ppp-service traceoptions flag all
set protocols ppp traceoptions file filename size 100m files 25
set protocols ppp traceoptions level all
set protocols ppp traceoptions flag all
set protocols ppp monitor-session all
set interfaces pp0 traceoptions flag all
set demux traceoptions file filename size 100m files 25
set demux traceoptions level all
set demux traceoptions flag all
set system processes dhcp-service traceoptions file filename
set system processes dhcp-service traceoptions file size 100m
set system processes dhcp-service traceoptions file files 25
set system processes dhcp-service traceoptions flag all
set class-of-service traceoptions file filename
set class-of-service traceoptions file size 100m
set class-of-service traceoptions flag all
set class-of-service traceoptions file files 25
set routing-options traceoptions file filename
set routing-options traceoptions file size 100m
set routing-options traceoptions flag all
set routing-options traceoptions file files 25
set interfaces traceoptions file filename
set interfaces traceoptions file size 100m
set interfaces traceoptions flag all
set interfaces traceoptions file files 25
set system processes general-authentication-service traceoptions file filename
set system processes general-authentication-service traceoptions file size 100m
set system processes general-authentication-service traceoptions flag all
set system processes general-authentication-service traceoptions file files 25
```

2. Copy the relevant statements into a text file and modify the log filenames as you want.
3. Copy the statements from the text file and paste them into the CLI on your router to configure logging.
4. Commit the logging configuration to begin collecting information.



NOTE: The maximum file size for DHCP local server and DHCP relay log files is 1 GB. The maximum number of log files for DHCP local server and DHCP relay is 1000.



BEST PRACTICE: Enable these logs only to collect information when troubleshooting specific problems. Enabling these logs during normal operations can result in reduced system performance.

**Related
Documentation**

- *Compressing Troubleshooting Logs from /var/logs to Send to Juniper Technical Support*

PART 5

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- [Index on page 57](#)

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