

## Chapter 4

# Complete Multicast Configuration Statements

This chapter shows the complete configuration statement hierarchy for the portions of the configuration discussed in this manual, listing all possible configuration statements and showing their level in the configuration hierarchy. When you are configuring the JUNOS software, your current hierarchy level is shown in the banner on the line preceding the `user@host#` prompt.

For a list of the complete configuration statement hierarchy, see the *JUNOS System Basics Configuration Guide*.

This chapter is organized as follows:

[edit protocols] Hierarchy Level on page 34

[edit routing-instances] Hierarchy Level on page 37

[edit routing-options] Hierarchy Level on page 38

[edit logical-routers logical-router-name protocols] Hierarchy Level on page 38

[edit logical-routers logical-router-name routing-instances] Hierarchy Level on page 42

[edit logical-routers logical-router-name routing-options] Hierarchy Level on page 42

## [edit protocols] Hierarchy Level

```

[edit]
protocols {

    Distance Vector Multicast Routing Protocol (DVMRP)
    dvmrp {
        disable;
        export [ policy-names ];
        import [ policy-names ];
        interface interface-name {
            disable;
            hello-interval seconds;
            hold-time seconds;
            metric metric;
            mode (forwarding | unicast-routing);
        }
        rib-group group-name;
        traceoptions {
            file name <replace> <size size> <files number> <no-stamp>
                <(world-readable | no-world-readable)>;
            flag flag <flag-modifier> <disable>;
        }
    }

    Internet Group Management Protocol (IGMP)
    igmp {
        interface interface-name {
            disable;
            static {
                group group {
                    source source;
                }
            }
            version version;
        }
        query-interval seconds;
        query-last-member-interval seconds;
        query-response-interval seconds;
        robust-count number;
        traceoptions {
            file name <replace> <size size> <files number> <no-stamp>
                <(world-readable | no-world-readable)>;
            flag flag <flag-modifier> <disable>;
        }
    }

    Multicast Listener Discovery (MLD)
    mld {
        interface interface-name {
            disable;
            static {
                group group {
                    source source;
                }
            }
            version version;
        }
        query-interval seconds;
        query-last-member-interval seconds;
    }
}

```

**Multicast Source  
Discovery Protocol  
(MSDP)**

```

query-response-interval seconds;
robust-count number;
traceoptions {
  file name <replace> <size size> <files number> <no-stamp>
    <(world-readable | no-world-readable)>;
  flag flag <flag-modifier> <disable>;
}
}

msdp {
  active-source-limit {
    maximum number;
    threshold number;
  }
  data-encapsulation <(disable | enable)>;
  disable;
  export [ policy-names ];
  import [ policy-names ];
  local-address address;
  rib-group group-name;
  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;
    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 {
  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>;
        }
    }
}

Pragmatic General Multicast (PGM)
pgm {
    traceoptions {
        file name <replace> <size size> <files number> <no-stamp>
          <(world-readable | no-world-readable)>;
        flag flag <flag-modifier>;
    }
}

Protocol Independent Multicast (PIM)
pim {
    assert-timeout seconds;
    dense-groups {
        addresses;
    }
    disable;
    graceful-restart {
        disable;
        restart-duration seconds;
    }
    import [ policy-names ];
    interface interface-name {
        disable;
        hello-interval seconds;
        mode (dense | sparse | sparse-dense);
        priority number;
        version version;
    }
    rib-group group-name;
    rp {
        auto-rp (announce | discovery | mapping);
        bootstrap-export [ policy-names ];
        bootstrap-import [ policy-names ];
        bootstrap-priority number;
        embedded-rp {
            maximum-rps limit;
            group-ranges {
                destination-mask;
            }
        }
    }
    local {
        family (inet | inet6) {
            disable;
            address address;
            group-ranges {
                destination-mask;
            }
            hold-time seconds;
            priority number;
        }
    }
}

```

```

    }
    static {
        address address {
            version version;
            group-ranges {
                destination-mask;
            }
        }
        traceoptions {
            file name <replace> <size size> <files number> <no-stamp>
                <(world-readable | no-world-readable)>;
            flag flag <flag-modifier> <disable>;
        }
    }
}

Session Announcement
Protocol/Session
Description Protocol
(SAP/SDP)
sap {
    disable;
    listen [ address <port port> ];
}

```

## [edit routing-instances] Hierarchy Level

---

```

[edit]
routing-instances {
    routing-instance-name {
        interface interface-name;
        instance-type (virtual-router | vrf);
        protocols {
            pim {
                mdt {
                    group-range multicast-prefix;
                    threshold {
                        group group-address {
                            source source-address {
                                rate threshold-rate;
                            }
                        }
                    }
                }
            }
            tunnel-limit limit;
        }
        vpn-group-address class-D-address; /* only for the vrf instance type */
    }
}
}
}

```



**NOTE:** All other statements at the [edit protocols pim] hierarchy level can be configured at the [edit routing-instance *routing-instance-name* protocols pim] hierarchy level. The listed statements are only valid in a routing instance.

---

## [edit routing-options] Hierarchy Level

---

```
[edit]
routing-options {
  multicast {
    forwarding-cache {
      threshold suppress value <reuse value>;
    }
    scope scope-name {
      interface [ interface-names ];
      prefix destination-prefix;
    }
    scope-policy policy-name;
    ssm-groups {
      address;
    }
  }
}
```

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

---

```
[edit logical-routers logical-router-name]
protocols {

  DVMRP      dvmrp {
    disable;
    export [ policy-names ];
    import [ policy-names ];
    interface interface-name {
      disable;
      hello-interval seconds;
      hold-time seconds;
      metric metric;
      mode (forwarding | unicast-routing);
    }
    rib-group group-name;
    traceoptions {
      file name <replace> <size size> <files number> <no-stamp>
        <(world-readable | no-world-readable)>;
      flag flag <flag-modifier> <disable>;
    }
  }

  IGMP      igmp {
    interface interface-name {
      disable;
      static {
        group group {
          source source;
        }
      }
      version version;
    }
    query-interval seconds;
    query-last-member-interval seconds;
    query-response-interval seconds;
  }
}
```

```

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

MLD mld {
  interface interface-name {
    disable;
    static {
      group group {
        source source;
      }
    }
    version version;
  }
  query-interval seconds;
  query-last-member-interval seconds;
  query-response-interval seconds;
  robust-count number;
  traceoptions {
    file name <replace> <size size> <files number> <no-stamp>
      <(world-readable | no-world-readable)>;
    flag flag <flag-modifier> <disable>;
  }
}

MSDP msdp {
  active-source-limit {
    maximum number;
    threshold number;
  }
  data-encapsulation <(disable | enable)>;
  disable;
  export [ policy-names ];
  import [ policy-names ];
  local-address address;
  rib-group group-name;
  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;
    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; {
    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>;
    }
  }
}
}
}

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

PIM  pim {
  assert-timeout seconds;
  dense-groups {
    addresses;
  }
  disable;
  graceful-restart {
    disable;
    restart-duration seconds;
  }
  import [ policy-names ];
  interface interface-name {
    disable;
    hello-interval seconds;
    mode (dense | sparse | sparse-dense);
    priority number;
    version version;
  }
  rib-group group-name;
  rp {
    auto-rp (discovery | mapping);
  }
}

```

```

bootstrap-export [ policy-names ];
bootstrap-import [ policy-names ];
bootstrap-priority number;
embedded-rp {
    maximum-rps limit;
    group-ranges {
        destination-mask;
    }
}
static {
    address address {
        version version;
        group-ranges {
            destination-mask;
        }
    }
}
traceoptions {
    file name <replace> <size size> <files number> <no-stamp>
        <(world-readable | no-world-readable)>;
    flag flag <flag-modifier> <disable>;
}
}

SAP/SDP sap {
    disable;
    listen [ address <port port>];
}
}

```

---

## [edit logical-routers *logical-router-name* routing-instances] Hierarchy Level

---

```
[edit logical-routers logical-router-name]
routing-instances {
  routing-instance-name {
    interface interface-name;
    instance-type (virtual-router | vrf);
    protocols {
      pim {
        mdt {
          group-range multicast-prefix;
          threshold {
            group group-address {
              source source-address {
                rate threshold-rate;
              }
            }
          }
        }
        tunnel-limit limit;
      }
      vpn-group-address class-D-address; /* needed only for vrf instance type */
    }
  }
}
```



**NOTE:** Almost all other statements at the [edit protocols pim] hierarchy level can be configured at the [edit logical-routers *logical-router-name* routing-instances *routing-instance-name* protocols pim] hierarchy level. For restrictions, see “PIM Configuration Guidelines” on page 189. The listed statements are valid in a routing instance only.

---



---

## [edit logical-routers *logical-router-name* routing-options] Hierarchy Level

---

```
[edit logical-routers logical-router-name]
routing-options {
  multicast {
    forwarding-cache {
      threshold suppress value <reuse value>;
    }
    scope scope-name {
      interface [ interface-names ];
      prefix destination-prefix;
    }
    scope-policy policy-name;
    ssm-groups {
      address;
    }
  }
}
```