

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:

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[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;
            ssm-map ssm-map-name;
            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;
            ssm-map ssm-map-name;
            static {
                group group {
                    source source;
                }
            }
            version version;
        }
    }
}

```

**Multicast Source
Discovery Protocol
(MSDP)**

```

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 {
  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 {
    active-source-limit {
      maximum number;
      threshold number;
    }
    authentication-key peer-key;
    default-peer;
    disable;
    export [ policy-names ];
    import [ policy-names ];
    local-address address;
    traceoptions {
      file name <replace> <size size> <files number> <no-stamp>
        <(world-readable | no-world-readable)>;
      flag flag <flag-modifier> <disable>;
    }
  }
}
group group-name {
  disable;
  export [ policy-names ];
  import [ policy-names ];
  local-address address;
  mode <(mesh-group | standard)>;
  traceoptions {
    file name <replace> <size size> <files number> <no-stamp>
      <(world-readable | no-world-readable)>;
    flag flag <flag-modifier> <disable>;
  }
  peer address {
    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;
        bfd-liveness-detection {
            minimum-interval milliseconds;
            minimum-receive-interval milliseconds;
            minimum-transmit-interval milliseconds;
            multiplier number;
            version (0 | 1 | automatic);
        }
        hello-interval seconds;
        mode (dense | sparse | sparse-dense);
        priority number;
        version version;
    }
    rib-group group-name;
    rp {
        auto-rp {
            (announce | discovery | mapping);
            (mapping-agent-election | no-mapping-agent-election);
        }
        bootstrap {
            family (inet | inet6) {
                priority number;
                import [ policy-names ];
            }
        }
    }
}

```

```

        export [ policy-names ];
    }
}
bootstrap-export [ policy-names ];
bootstrap-import [ policy-names ];
bootstrap-priority number;
dr-register-policy [ policy-names ];
embedded-rp {
    maximum-rps limit;
    group-ranges {
        destination-mask;
    }
}
local {
    family (inet | inet6) {
        disable;
        address address;
        anycast-pim {
            rp-set {
                address address [forward-msdp-sa];
            }
            local-address address;
        }
        group-ranges {
            destination-mask;
        }
        hold-time seconds;
        priority number;
    }
}
rp-register-policy [ policy-names ];
spt-threshold {
    infinity [ spt-threshold-infinity-policies ];
}
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 (forwarding | no-forwarding | virtual-router | vpls | 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] and [edit protocols msdp] hierarchy levels can be configured at the [edit routing-instances routing-instance-name protocols pim] and [edit routing-instances routing-instance-name protocols msdp] hierarchy levels. 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>;
    }
    rpf-check-policy [ policy-names ];
    scope scope-name {
      interface [ interface-names ];
      prefix destination-prefix;
    }
    scope-policy policy-name;
    ssm-groups {
      address;
    }
    ssm-map ssm-map-name {
      policy policy-name;
      source addresses;
    }
  }
}
```

}

[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;
                ssm-map ssm-map-name;
                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;
                ssm-map ssm-map-name;
                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;
            bfd-liveness-detection {
                minimum-interval milliseconds;
                minimum-receive-interval milliseconds;
                minimum-transmit-interval milliseconds;
                multiplier number;
                version (0 | 1 | automatic);
            }
            hello-interval seconds;
            mode (dense | sparse | sparse-dense);
            priority number;
            version version;
        }
        rib-group group-name;
        rp {
            auto-rp {
                (discovery | mapping);
                (mapping-agent-election | no-mapping-agent-election);
            }
            bootstrap {
                family (inet | inet6) {
                    priority number;
                    import [ policy-names ];
                    export [ policy-names ];
                }
            }
            bootstrap-export [ policy-names ];
            bootstrap-import [ policy-names ];
            bootstrap-priority number;
            dr-register-policy [ policy-names ];
            embedded-rp {
                maximum-rps limit;
                group-ranges {
                    destination-mask;
                }
            }
        }
        local {

```

```

family (inet | inet6) {
  disable;
  address address;
  anycast-pim {
    rp-set {
      address address [forward-msdp-sa];
    }
    local-address address;
  }
  group-ranges {
    destination-mask;
  }
  hold-time seconds;
  priority number;
}
}
rp-register-policy [ policy-names ];
spt-threshold {
  infinity [ spt-threshold-infinity-policies ];
}
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 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 (forwarding | no-forwarding | virtual-router | vpls | 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] and [edit protocols msdp] hierarchy levels can be configured at the [edit logical-routers *logical-router-name* routing-instances *routing-instance-name* protocols pim] and [edit logical-routers *logical-router-name* routing-instances *routing-instance-name* protocols msdp] hierarchy level. For restrictions, see “PIM Configuration Guidelines” on page 213. 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>;  
    }  
    rpf-check-policy [ policy-names ];  
    scope scope-name {  
      interface [ interface-names ];  
      prefix destination-prefix;  
    }  
    scope-policy policy-name;  
    ssm-groups {  
      address;  
    }  
    ssm-map ssm-map-name {  
      policy policy-name;  
      source addresses;  
    }  
  }  
}
```

