

## Chapter 2

# Complete MPLS Applications Configuration Mode Statements

This chapter shows the complete configuration statement hierarchy for the Multiprotocol Label Switching (MPLS) applications configuration statements, 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 complete list of the JUNOS configuration statements, see the *JUNOS System Basics Configuration Guide*.

This chapter is organized as follows:

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## [edit logical-routers] Hierarchy Level

---

The following MPLS protocol statements can be configured at the [edit logical-routers] hierarchy level. This is not a comprehensive list of statements available for logical routers. Only the statements that are also documented in this manual are listed here. For more information about logical routers, see the *JUNOS Routing Protocols Configuration Guide*.

```
logical-routers {
  logical-router-name {
    protocols {
      connections {
        connections-configuration;
      }
      ldp {
        ldp-configuration;
      }
      link-management {
        link-management-configuration;
      }
      mpls {
        mpls-configuration;
      }
      rsvp {
        rsvp-configuration;
      }
    }
  }
}
```

## [edit protocols connections] Hierarchy Level

---

The following statements can also be configured at the [edit logical-routers *logical-router-name*] hierarchy level:

```

protocols {
  connections {
    interface-switch connection-name {
      interface interface-name.unit-number;
      interface interface-name.unit-number;
    }
    lsp-switch connection-name {
      transmit-lsp label-switched-path;
      receive-lsp label-switched-path;
    }
    p2mp-receive-switch {
      output-interface interface-name.unit-number;
      receive-p2mp-lsp receiving-point-to-multipoint-lsp;
    }
    p2mp-transmit-switch {
      input-interface input-interface-name.unit-number;
      transmit-p2mp-lsp transmitting-point-to-multipoint-lsp;
    }
    remote-interface-switch connection-name {
      interface interface-name.unit-number;
      transmit-lsp label-switched-path;
      receive-lsp label-switched-path;
    }
  }
}

```

## [edit protocols ldp] Hierarchy Level

---

The following statements can also be configured at the [edit logical-routers *logical-router-name*] hierarchy level:

```

protocols {
  ldp {
    deaggregate | no-deaggregate;
    egress-policy policy-name;
    export [ policy-names ];
    graceful-restart {
      disable;
      helper-disable;
      maximum-recovery-time seconds;
      recovery-time seconds;
    }
    import [ policy-names ];
    interface interface-name {
      disable;
      hello-interval seconds;
      hold-time seconds;
      transport-address (interface | router-id);
    }
  }
}

```

```

    keepalive-interval seconds;
    keepalive-timeout seconds;
    log-updown {
        trap disable;
    }
    no-forwarding;
    policing {
        fec fec-address {
            ingress-traffic filter-name;
            transit-traffic filter-name;
        }
    }
    preference preference;
    session address {
        authentication-key authentication-key;
    }
    strict-targeted-hellos;
    traceoptions {
        file filename <replace> <size size> <files number> <no-stamp>
            <(world-readable | no-world-readable)>;
        flag flag <flag-modifier> <disable>;
    }
    track-igp-metric;
    traffic-statistics {
        file filename <replace> <size size> <files number>
            <(world-readable | no-world-readable)>;
        interval interval;
    }
    transport-address (interface | router-id);
}
}

```

## [edit protocols link-management] Hierarchy Level

---

The following statements can also be configured at the [edit logical-routers *logical-router-name*] hierarchy level:

```

protocols {
  link-management {
    peer peer-name {
      address address;
      control-channel control-channel-name;
      te-link te-link-name;
    }
    te-link te-link-name {
      disable;
      interface interface-name {
        disable;
        local-address ip-address;
        remote-address ip-address;
        remote-id id-number;
      }
      local-address ip-address;
      remote-address ip-address;
      remote-id id-number;
    }
    traceoptions {
      file filename <files number> <no-stamp> <replace> <size size>
        <(world-readable | no-world-readable)>;
      flag flag <flag-modifier> <disable>;
    }
  }
}

```

## [edit protocols mpls] Hierarchy Level

---

The following statements can also be configured at the [edit logical-routers *logical-router-name*] hierarchy level:

```

protocols {
  mpls {
    disable;
    admin-groups {
      group-name group-value;
    }
    advertise-hold-time seconds;
    auto-policing {
      class all (drop | loss-priority-high | loss-priority-low);
      class ctnumber (drop | loss-priority-high | loss-priority-low);
    }
    bandwidth bps {
      ct0 bps;
      ct1 bps;
      ct2 bps;
      ct3 bps;
    }
    class-of-service cos-value;
    diffserv-te {
      bandwidth-model {
        extended-mam;
        mam;
        rdm;
      }
      te-class-matrix {
        tnumber {
          priority priority;
          traffic-class {
            ctnumber priority priority;
          }
        }
      }
    }
  }
  explicit-null;
  hop-limit number;
  icmp-tunneling;
}

```

```

interface (interface-name | all) {
  disable;
  admin-group [ group-name ];
}
label-map {
  default-route {
    class-of-service cos-value;
    (next-hop (address | interface-name | address/interface-name)) | (reject |
      discard);
    (pop | swap <out-label> | swap-push <swap-label>);
    preference preference;
    type type;
  }
  in-label {
    class-of-service cos-value;
    (next-hop (address | interface-name | address/interface-name)) | (reject |
      discard);
    (pop | swap <out-label> | swap-push <swap-label>);
    preference preference;
    type type;
  }
}
}
}
ipv6-tunneling;
label-switched-path lsp-path-name {
  disable;
  adaptive;
  admin-group {
    exclude [ group-names ];
    include [ group-names ];
  }
  auto-bandwidth {
    adjust-interval seconds;
    adjust-threshold percent;
    maximum-bandwidth bps;
    minimum-bandwidth bps;
    monitor-bandwidth;
  }
  bandwidth bps {
    ct0 bps;
    ct1 bps;
    ct2 bps;
    ct3 bps;
  }
  class-of-service cos-value;
  description;
  fast-reroute {
    bandwidth bps;
    (exclude group-names | no-exclude);
    hop-limit number;
    (include group-names | no-include);
  }
  from address;
  hop-limit number;
  install {
    destination-prefix/prefix-length <active>;
  }
}

```

```

ldp-tunneling;
link-protection;
lsp-attributes {
  gpid (ethernet | hdlc | ipv4 | ppp);
  signal-bandwidth type;
  switching-type type;
}
metric number;
no-cspf;
no-decrement-ttl;
node-link-protection;
optimize-timer seconds;
p2mp path-name;
policing {
  filter filter-name;
  no-automatic-policing;
}
preference preference;
priority setup-priority hold-priority;
primary path-name {
  adaptive;
  admin-group {
    exclude [ group-names ];
    include [ group-names ];
  }
  bandwidth bps {
    ct0 bps;
    ct1 bps;
    ct2 bps;
    ct3 bps;
  }
  class-of-service cos-value;
  hop-limit number;
  no-cspf;
  no-decrement-ttl;
  optimize-timer seconds;
  preference preference;
  priority setup-priority hold-priority;
  (record | no-record);
  retry-limit number;
  retry-timer seconds;
  select {
    manual;
    unconditional;
  }
  standby;
}
(random | least-fill | most-fill);
(record | no-record);
retry-limit number;
retry-timer seconds;
revert-timer seconds;

```

```

secondary path-name {
  adaptive;
  admin-group {
    exclude [ group-names ];
    include [ group-names ];
  }
  bandwidth bps {
    ct0 bps;
    ct1 bps;
    ct2 bps;
    ct3 bps;
  }
  class-of-service cos-value;
  hop-limit number;
  no-cspf;
  no-decrement-ttl;
  optimize-timer seconds;
  preference preference;
  priority setup-priority hold-priority;
  (record | no-record);
  select {
    manual;
    unconditional;
  }
  standby;
}
soft-preemption {
  cleanup-timer seconds;
}
standby;
to address;
traceoptions {
  file filename <replace> <size size> <files number> <no-stamp>
    <(world-readable | no-world-readable)>;
  flag flag <flag-modifier> <disable>;
}
}
log-updown {
  (syslog | no-syslog);
  (trap | no-trap);
  trap-path-down;
  trap-path-up;
}
mtu-signaling;
no-cspf;
no-decrement-ttl;
no-propagate-ttl;
optimize-aggressive;
optimize-timer;
path path-name {
  address <strict | loose>;
}

```

```

path-mtu {
  allow-fragmentation;
  rsvp {
    mtu-signaling;
  }
}
preference preference;
priority setup-priority hold-priority;
(record | no-record );
revert-timer seconds;
rsvp-error-hold-time seconds;
soft-preemption {
  cleanup-timer seconds;
}
standby;
static-path inet {
  prefix {
    class-of-service cos-value;
    next-hop (address | interface-name | address/interface-name);
    preference preference;
    push out-label;
  }
}
statistics {
  auto-bandwidth;
  file filename <size size> <files number> <no-stamp>;
  interval seconds;
}
traceoptions {
  file filename <replace> <size size> <files number> <no-stamp>
    <(world-readable | no-world-readable)>;
  flag flag <flag-modifier> <disable>;
}
traffic-engineering (bgp | bgp-igp | bgp-igp-both-ribs | mpls-forwarding);
}
}

```

## [edit protocols rsvp] Hierarchy Level

---

The following statements can also be configured at the [edit logical-routers *logical-router-name*] hierarchy level:

```

protocols {
  rsvp {
    disable;
    graceful-restart {
      disable;
      helper-disable;
    }
    interface interface-name {
      disable;
      (aggregate | no-aggregate);
      authentication-key key;
      bandwidth bps;
      hello-interval seconds;
      link-protection {
        disable;
        bandwidth bandwidth;
        bypass bypass-name {
          bandwidth bps;
          hop-limit number;
          path address <strict | loose>;
          to address;
        }
        class-of-service value;
        hop-limit number;
        max-bypasses number;
        no-node-protection;
        optimize-timer number;
        path address <strict | loose>;
        subscription percentage;
      }
      (reliable | no-reliable);
      subscription percentage; }
    keep-multiplier number;
    load-balance {
      bandwidth;
    }
    preemption {
      (aggressive | disabled | normal);
      soft-preemption {
        cleanup-timer seconds;
      }
    }
    refresh-time seconds;
    traceoptions {
      file filename <replace> <size size> <files number> <no-stamp>
        <(world-readable | no-world-readable)>;
      flag flag <flag-modifier> <disable>;
    }
  }
}

```

