

Chapter 4

MPLS Configuration Statements

To configure Multiprotocol Label Switching (MPLS), you can include the following statements in the configuration:

```
protocols {
  mpls {
    admin-groups {
      group-name group-value;
    }
    advertise-hold-time seconds;
    bandwidth bandwidth;
    class-of-service cos-value;
    disable;
    explicit-null;
    hop-limit number;
    interface (interface-name | all) {
      disable;
      admin-group {
        group-names;
      }
      label-map in-label {
        (next-hop (address | interface-name | address/interface-name) | (reject | discard);
        (pop | (swap <out-label>);
        class-of-service value;
        preference preference;
        type type;
      }
    }
  }
  ipv6-tunneling;
  label-switched-path lsp-path-name {
    to address;
    from address;
    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;
class-of-service value;
description;
disable;
fast-reroute {
    fast-reroute bps;
    exclude group-names;
    hop-limit number;
    include group-names;
}
hop-limit number;
install {
    destination-prefix/prefix-length <active>;
}
ldp-tunneling;
link-protection;
lsp-attributes {
    gp-id gp-id;
    signal-bandwidth type;
    switching-type type;
}
metric number;
no-cspf;
no-decrement-ttl;
node-link-protection;
optimize-timer seconds;
preference preference;
priority setup-priority hold-priority;
(random | least-fill | most-fill);
(record | no-record);
retry-limit number;
retry-timer seconds;
standby;
traceoptions {
    file filename <replace> <size size> <files number> <no-stamp>
    <(world-readable | no-world-readable)>;
    flag flag <flag-modifier> <disable>;
}
primary path-name {
    adaptive;
    admin-group {
        exclude group-names;
        include group-names;
    }
    bandwidth 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;
    standby;
}
}

```

```

secondary path-name {
  adaptive;
  admin-group {
    exclude group-names;
    include group-names;
  }
  bandwidth bps;
  class-of-service 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;
  standby;
}
}
log-updown {
  (syslog | no-syslog);
  (trap | no-trap);
}
no-cspf;
no-decrement-ttl;
no-propagate-ttl;
no-record;
optimize-aggressive;
optimize-timer;
path path-name {
  address <strict | loose>;
}
preference preference;
priority setup-priority hold-priority;
record;
rsvp-error-hold-time seconds;
standby;
static-path inet {
  prefix {
    next-hop (address | interface-name | address/interface-name);
    push out-label;
    class-of-service value;
    preference preference;
  }
}
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);
}
}

```

Minimum MPLS Configuration

To enable MPLS on the router, you must include at least the following statements. All other MPLS configuration statements are optional. Note that this configuration does nothing more than enable MPLS on the router and on the specified interface.

```
[edit]
interfaces {
  interface-name {
    logical-unit-number {
      family mpls;
    }
  }
}
protocols {
  mpls {
    interface (interface-name | all);
  }
  rsvp {
    interface interface-name;
  }
}
```

For every interface you enable, two special routes are installed automatically in the MPLS forwarding table. One route has a label value of 0, and the second has a label value of 1. (For information about these labels, see “Special Labels” on page 20.)