

Chapter 4

MPLS Configuration Statements

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

```
protocols {
  mpls {
    disable;
    admin-groups {
      group-name group-value;
    }
    advertise-hold-time seconds;
    bandwidth bandwidth;
    class-of-service cos-value;
    diffserv-te {
      bandwidth-model {
        extended-mam;
        mam;
      }
      te-class-matrix {
        tnumber {
          priority priority;
          traffic-class ctnumber priority priority;
        }
      }
    }
  }
  explicit-null;
  hop-limit number;
  icmp-tunneling;
```



```

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;
policing filter filter-name;
preference preference;
priority setup-priority hold-priority;
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;
}
(random | least-fill | most-fill);
(record | no-record);
retry-limit number;
retry-timer seconds;
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;
}

```

```

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);
}
mtu-signaling;
no-cspf;
no-decrement-ttl;
no-propagate-ttl;
no-record;
optimize-aggressive;
optimize-timer;
path path-name {
  address <strict | loose>;
}
path-mtu {
  allow-fragmentation;
  rsvp {
    mtu-signaling;
  }
}
policing filter filter-name;
preference preference;
priority setup-priority hold-priority;
record;
rsvp-error-hold-time seconds;
soft-preemption {
  cleanup-timer seconds;
}
standby;
static-path inet {
  prefix {
    class-of-service value;
    next-hop (address | interface-name | address/interface-name);
    push out-label;
    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);
}
}

```

You can configure these statements at the following hierarchy levels:

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

```
[edit protocols mpls]
```

Minimum MPLS Configuration

To enable MPLS on the router, you must include at least the following statements. This enables MPLS on a logical interface. 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.

Include the family mpls statement:

```

interfaces {
  interface-name {
    logical-unit-number {
      family mpls;
    }
  }
}

```

You can configure these statements at the following hierarchy levels:

```
[edit logical-routers logical-router-name interfaces]
```

```
[edit interfaces]
```

Include the interface in the MPLS and RSVP protocol configuration:

```
protocols {
  mpls {
    interface (interface-name | all); # Required to enable MPLS on the
  interface
    }
  rsvp { # Required for RSVP signaled MPLS only
    interface interface-name;
    }
}
```

You can configure these statements at the following hierarchy levels:

[edit logical-routers *logical-router-name* protocols]

[edit protocols]

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 22.)