

Chapter 4

Interfaces Configuration Statements

When configuring the interfaces, you can configure the interfaces that are currently present in the routing platform (that is, the Physical Interface Cards [PICs] that are already installed in the routing platform) as well as interfaces that you might be adding at some future time (that is, PICs that you plan to install). To determine which interfaces are currently installed in the routing platform, issue the `show interfaces terse` operational mode command. If an interface is listed in the output, it is installed in the routing platform. If an interface is not listed, it is not present.

The JUNOS software automatically configures the routing platform's management Ethernet interface, `fxp0`, which is an out-of-band management interface, and the internal Ethernet interface, `fxp1`, which connects the Routing Engine with the routing platform's packet forwarding components. The JUNOS software also automatically configures one loopback interface (`lo0`). If your routing platform has a Tunnel PIC, the JUNOS software automatically configures one multicast tunnel interface (`mt`) for each virtual private network (VPN) you configure. You do not need to configure multicast tunnel interfaces.

Complete Interfaces Configuration Statements

To configure routing platform interfaces, you include statements at the [edit interfaces] hierarchy level of the configuration:

```
interfaces {
  traceoptions {
    file filename <files number> <size size> <(world-readable |
      no-world-readable)>;
    flag flag <disable>;
  }
  interface-name {
    accounting-profile name;
    aggregated-ether-options {
      (flow-control | no-flow-control);
      lacp mode {
        periodic interval;
      }
      link-speed speed;
      (loopback | no-loopback);
      minimum-links number;
    }
  }
}
```

```

    source-address-filter {
        mac-address;
    }
    (source-filtering | no-source-filtering);
}
aggregated-sonet-options {
    link-speed speed;
    minimum-links number;
}
atm-options {
    cell-bundle-size cells;
    ilmi;
    linear-red-profiles profile-name {
        high-plp-max-threshold percent;
        low-plp-max-threshold percent;
        queue-depth cells high-plp-threshold percent low-plp-threshold percent;
    }
    mpls {
        pop-all-labels {
            required-depth number;
        }
    }
    pic-type (atm1 | atm2);
    plp-to-clp;
    promiscuous-mode {
        vpi vpi-identifier;
    }
    scheduler-maps map-name {
        forwarding-class class-name {
            epd-threshold cells plp1 cells;
            linear-red-profile profile-name;
            priority (high | low);
            transmit-weight (cells number | percent number);
        }
        vc-cos-mode (alternate | strict);
    }
    vpi vpi-identifier {
        maximum-vcs maximum-vcs;
        oam-liveness {
            up-count cells;
            down-count cells;
        }
        oam-period (disable | seconds);
        shaping {
            (cbr rate | rtvbr peak rate sustained rate burst length |
             vbr peak rate sustained rate burst length);
            queue-length number;
        }
    }
}
}
clocking clock-source;
dce;
description text;
disable;

```

```

ds0-options {
  bert-algorithm algorithm;
  bert-error-rate rate;
  bert-period seconds;
  byte-encoding (nx64 | nx56);
  fcs (32 | 16);
  idle-cycle-flag (flags | ones);
  invert-data;
  loopback payload;
  start-end-flag (shared | filler);
}
e1-options {
  bert-error-rate rate;
  bert-period seconds;
  fcs (32 | 16);
  framing (g704 | g704-no-crc4 | unframed);
  idle-cycle-flag (flags | ones);
  invert-data;
  loopback (local | remote);
  start-end-flag (shared | filler);
  timeslots time-slot-range;
}
e3-options {
  atm-encapsulation (direct | plcp);
  bert-algorithm algorithm;
  bert-error-rate rate;
  bert-period seconds;
  buildout feet;
  compatibility-mode (digital-link | kentrox | larscom) <subrate value>;
  fcs (32 | 16);
  framing (g.751 | g.832);
  idle-cycle-flag value;
  loopback (local | remote);
  (payload-scrambler | no-payload-scrambler);
  start-end-flag value;
  (unframed | no-unframed);
}
encapsulation type;
es-options {
  backup-interface es-fpc/pic/port;
}
fastether-options {
  802.3ad aex;
  (flow-control | no-flow-control);
  ingress-rate-limit rate;
  (loopback | no-loopback);
  source-address-filter {
    mac-address;
  }
  (source-filtering | no-source-filtering);
}

```



```

mlfr-uni-nni-bundle-options {
  acknowledge-retries number;
  acknowledge-timer milliseconds;
  action-red-differential-delay (disable-tx | remove-link);
  drop-timeout milliseconds;
  fragment-threshold bytes;
  hello-timer milliseconds;
  lmi-type (ansi | itu);
  minimum-links number;
  mrru bytes;
  n391 number;
  n392 number;
  n393 number;
  red-differential-delay milliseconds;
  t391 seconds;
  t392 seconds;
  yellow-differential-delay milliseconds;
}
mtu bytes;
multiservice-options {
  boot-command filename;
  (core-dump | no-core-dump);
  (syslog | no-syslog);
}
no-gratuitous-arp-request;
no-keepalives;
no-partition {
  interface-type type;
}
partition partition-number oc-slice oc-slice-range interface-type type {
  timeslots time-slot-range;
}
passive-monitor-mode;
per-unit-scheduler;
ppp-options {
  chap {
    access-profile name;
    local-name name;
    passive;
  }
}
receive-bucket {
  overflow (discard | tag);
  rate percentage;
  threshold bytes;
}

```

```

serial-options {
  clock-rate rate;
  clocking-mode (dce | dte | loop);
  control-leads {
    control-signal (assert | de-assert | normal);
    cts (ignore | normal | require);
    dcd (ignore | normal | require);
    dsr (ignore | normal | require);
    dtr signal-handling-option;
    ignore-all;
    indication (ignore | normal | require);
    rts (assert | de-assert | normal);
    tm (ignore | normal | require);
  }
  control-polarity (positive | negative);
  cts-polarity (positive | negative);
  dcd-polarity (positive | negative);
  dsr-polarity (positive | negative);
  dtr-circuit (balanced | unbalanced);
  dtr-polarity (positive | negative);
  encoding (nrz | nrzi);
  indication-polarity (positive | negative);
  line-protocol protocol;
  loopback mode;
  rts-polarity (positive | negative);
  tm-polarity (positive | negative);
  transmit-clock invert;
}
services-options {
  inactivity-timeout seconds;
  open-timeout seconds;
  syslog {
    host hostname {
      facility-override facility-name;
      log-prefix prefix-number;
      [ services priority-level ];
    }
  }
}
sonet-options {
  aggregate asx;
  aps {
    advertise-interval milliseconds;
    authentication-key key;
    force;
    hold-time milliseconds;
    lockout;
    neighbor address;
    paired-group group-name;
    protect-circuit group-name;
    request;
    revert-time seconds;
    switching-mode (bidirectional | unidirectional);
    working-circuit group-name;
  }
}

```

```

bytes {
  c2 value;
  e1-quiet value;
  f1 value;
  f2 value;
  s1 value;
  z3 value;
  z4 value;
}
fcs (32 | 16);
loopback (local | remote);
mpls {
  pop-all-labels {
    required-depth number;
  }
}
path-trace trace-string;
(payload-scrambler | no-payload-scrambler);
rfc-2615;
trigger {
  defect ignore {
    hold-time up milliseconds down milliseconds;
  }
}
vtmapping (itu-t | klm);
(z0-increment | no-z0-increment);
}
speed (10m | 100m);
stacked-vlan-tagging;
t1-options {
  bert-algorithm algorithm;
  bert-error-rate rate;
  bert-period seconds;
  buildout value;
  byte-encoding (nx64 | nx56);
  fcs (32 | 16);
  framing (sf | esf);
  idle-cycle-flag (flags | ones);
  invert-data;
  line-encoding (ami | b8zs);
  loopback (local | payload | remote);
  remote-loopback-respond;
  start-end-flag (shared | filler);
  timeslots time-slot-range;
}

```

```

t3-options {
  atm-encapsulation (direct | plcp);
  bert-algorithm algorithm;
  bert-error-rate rate;
  bert-period seconds;
  (cbit-parity | no-cbit-parity);
  compatibility-mode (adtran | digital-link | kentrox | larscom | verilink)
    <subrate value>;
  fcs (32 | 16);
  (feac-loop-respond | no-feac-loop-respond);
  idle-cycle-flag value;
  (long-buildout | no-long-buildout);
  (loop-timing | no-loop-timing);
  loopback (local | payload | remote);
  (mac | no-mac);
  (payload-scrambler | no-payload-scrambler);
  start-end-flag value;
}
traceoptions {
  flag flag <flag-modifier> <disable>;
}
transmit-bucket {
  overflow discard;
  rate percentage;
  threshold bytes;
}
(traps | no-traps);
vlan-tagging;
unit logical-unit-number {
  accept-source-mac {
    mac-address mac-address {
      policer {
        input cos-policer-name;
        output cos-policer-name;
      }
    }
  }
  accounting-profile name;
  allow-any-vci;
  atm-scheduler-map (map-name | default);
  bandwidth rate;
  cell-bundle-size cells;
  clear-dont-fragment-bit;
  compression {
    rtp {
      f-max-period number;
      queues [ queue-numbers ];
      port {
        minimum port-number;
        maximum port-number;
      }
    }
  }
}
description text;

```

```

dial-options {
  l2tp-interface-id name {
    (dedicated | shared);
  }
}
disable;
dlci dlci-identifier;
drop-timeout milliseconds;
encapsulation type;
epd-threshold cells plp1 cells;
fragment-threshold bytes;
input-vlan-map {
  pop;
  push;
  swap;
  vlan-id number;
  tag-protocol-id tpid;
}
interleave-fragments;
inverse-arp;
minimum-links number;
mrru bytes;
multicast-dlci dlci-identifier;
multicast-vci vpi-identifier.vci-identifier;
multipoint;
oam-liveness {
  up-count cells;
  down-count cells;
}
oam-period (disable | seconds);
output-vlan-map {
  pop;
  push;
  swap;
  vlan-id number;
  tag-protocol-id tpid;
}
passive-monitor-mode;
peer-unit unit-number;
plp-to-clp;
point-to-point;
service-domain (inside | outside);
shaping {
  (cbr rate | rtvbr peak rate sustained rate burst length |
   vbr peak rate sustained rate burst length);
  queue-length number;
}
short-sequence;
transmit-weight number;
(traps | no-traps);
trunk-bandwidth rate;
trunk-id number;

```

```

tunnel {
  backup-destination address;
  destination address;
  key number;
  routing-instance {
    destination routing-instance-name;
  }
  source source-address;
  ttl number;
}
vci vpi-identifier.vci-identifier;
vpi vpi-identifier;
vlan-id number;
vlan-tags inner tpid.vlan-id outer tpid.vlan-id;
family family {
  accounting {
    destination-class-usage;
    source-class-usage {
      (input | output | input output);
    }
  }
}
bundle interface-name;
filter {
  input filter-name;
  output filter-name;
  group filter-group-number;
}
ipsec-sa sa-name;
keep-address-and-control;
mtu bytes;
multicast-only;
negotiate-address;
no-redirects;
policer {
  arp policer-template-name;
  input policer-template-name;
  output policer-template-name;
}
primary;
proxy inet-address address;
receive-options-packets;
receive-ttl-exceeded;
remote (inet-address address | mac-address address);
rpf-check <fail-filter filter-name> {
  <mode loose>;
}
sampling {
  (input | output | input output);
}

```

```

service {
  input {
    [ service-set service-set-name <service-filter filter-name> ];
    post-service-filter filter-name;
  }
  output {
    [ service-set service-set-name <service-filter filter-name> ];
  }
}
(translate-discard-eligible | no-translate-discard-eligible);
(translate-fecn-and-becn | no-translate-fecn-and-becn);
unnumbered-address interface-name destination address
  destination-profile profile-name;
address address {
  arp ip-address (mac | multicast-mac) mac-address <publish>;
  broadcast address;
  destination address;
  destination-profile name;
  eui-64;
  multipoint-destination address (dcli dcli-identifier |
    vci vci-identifier);
  multipoint-destination address {
    epd-threshold cells plp1 cells;
    inverse-arp;
    oam-liveness {
      up-count cells;
      down-count cells;
    }
    oam-period (disable | seconds);
    shaping {
      (cbr rate | rtvbr peak rate sustained rate burst length |
        vbr peak rate sustained rate burst length);
      queue-length number;
    }
    vci vpi-identifier.vci-identifier;
  }
}
preferred;
primary;

```

