

Chapter 3

Protocol-Independent Routing Properties Overview

Protocol-independent routing properties affect systemwide routing operations. For the most part, these properties are independent of any routing protocols. The protocol-independent routing properties allow you to do the following:

- Add routing table entries, including static routes, aggregated (coalesced) routes, generated routes (routes of last resort), and martian routes (routes to ignore).

- Create additional routing tables and routing table groups.

- Set the autonomous system (AS) number of the router for use by the Border Gateway Protocol (BGP).

- Set the router ID, which is used by BGP and Open Shortest Path First (OSPF) to identify the router from which a packet originated.

- Define BGP confederation members for use by BGP.

- Configure multicast administrative scoping.

- Configure how much system logging information to log for the routing protocol process.

- Configure systemwide tracing (debugging) to track standard and unusual routing operations and record this information in a log file.

This chapter discusses the following topics related to understanding and configuring protocol-independent routing properties:

- Protocol-Independent Routing Properties Configuration Statements on page 38

- Minimum Protocol-Independent Routing Properties Configuration on page 41

Protocol-Independent Routing Properties Configuration Statements

To configure protocol-independent routing properties, you include the following statements at the [edit routing-options] hierarchy level:

```

routing-options {
  aggregate {
    defaults {
      aggregate-options;
    }
    route destination-prefix {
      policy policy-name;
      aggregate-options;
    }
  }
  auto-export {
    (disable | enable);
    family {
      inet {
        multicast {
          (disable | enable);
          rib-group rib-group;
        }
        unicast {
          (disable | enable);
          rib-group rib-group;
        }
      }
    }
  }
  traceoptions {
    file name <replace> <size size> <files number> <no-stamp>
      <world-readable>;
    flag flag <flag-modifier> <disable>;
  }
}
autonomous-system autonomous-system <loops number>;
confederation confederation-autonomous-system
  members autonomous-system;
dynamic-tunnels tunnel-name {
  destination-prefix prefix;
  source-address address;
  tunnel-type type-of-tunnel;
}
fate-sharing {
  group group-name;
  cost value;
  from address {
    to address;
  }
}
forwarding-table {
  export [ policy-names ];
  unicast-reverse-path (active-paths | feasible-paths);
}

```

```

generate {
  defaults {
    generate-options;
  }
  route destination-prefix {
    policy policy-name;
    generate-options;
  }
}
instance-export [ policy-names ];
instance-import [ policy-names ];
interface-routes {
  export {
    lan;
    point-to-point;
  }
  rib-group group-name;
}
martians {
  destination-prefix match-type <allow>;
}
maximum-routes route-limit <log-only | threshold value>;
multicast {
  forwarding-cache {
    threshold (suppress | reuse) value value;
  }
  scope scope-name {
    interface [ interface-names ];
    prefix destination-prefix;
  }
  ssm-groups {
    address;
  }
}
options {
  syslog (level level | upto level);
}
resolution {
  rib routing-table-name {
    import [ policy-names ]
    resolution-ribs [ routing-table-names ];
  }
}
rib routing-table-name {
  aggregate {
    defaults {
      aggregate-options;
    }
    route destination-prefix {
      policy policy-name;
      aggregate-options;
    }
  }
}

```

```

generate {
  defaults {
    generate-options;
  }
  route destination-prefix {
    policy policy-name;
    generate-options;
  }
}
martians {
  destination-prefix match-type <allow>;
}
static {
  defaults {
    static-options;
  }
  rib-group group-name;
  route destination-prefix {
    lsp-next-hop {
      metric metric;
      preference preference;
    }
    next-hop;
    p2mp-lsp-next-hop {
      metric metric;
      preference preference;
    }
    qualified-next-hop {
      metric metric;
      preference preference;
    }
    static-options;
  }
}
rib-groups {
  group-name {
    import-policy [ policy-names ];
    import-rib [ group-names ];
    export-rib group-name;
  }
}
route-record;
router-id address;

```

```

static {
  defaults {
    static-options;
  }
  rib-group group-name;
  route destination-prefix {
    lsp-next-hop {
      metric metric;
      preference preference;
    }
    next-hop;
    qualified-next-hop {
      metric metric;
      preference preference;
    }
    static-options;
  }
}
traceoptions {
  file name <replace> <size size> <files number> <no-stamp>
  <world-readable>;
  flag flag <flag-modifier> <disable>;
}
}

```

Minimum Protocol-Independent Routing Properties Configuration

All statements that configure protocol-independent routing properties are optional and do not have to be included in the configuration for the router to operate. However, if you are configuring BGP, you must configure an AS number and a router identifier. For OSPF, the router uses the IP address configured on the loopback interface (lo0) as the router identifier. If no IP address is configured on the loopback interface, the router uses the highest IP address for the router identifier.

