

Configuring an Unnumbered Interface

When you need to conserve IP addresses, you can configure unnumbered interfaces. Setting up an unnumbered interface enables IP processing on the interface without assigning an explicit IP address to the interface. The statements you use to configure an unnumbered interface depend on the type of interface you are configuring: a point-to-point interface or an Ethernet interface:

- Configuring an Unnumbered Point-to-Point Interface on page 1
- Configuring an Unnumbered Ethernet or Demux Interface on page 2

Configuring an Unnumbered Point-to-Point Interface

To configure a point-to-point interface to be unnumbered, configure the protocol family, but do not include the **address** statement:

```
family family;
```

You can include this statement at the following hierarchy levels:

- [edit interfaces *interface-name* unit *logical-unit-number*]
- [edit logical-systems *logical-system-name* interfaces *interface-name* unit *logical-unit-number*]



NOTE: For interfaces with PPP encapsulation, you can configure an unnumbered interface by including the **unnumbered-interface** statement in the configuration. For more information, see Configuring IPCP Options.

When configuring unnumbered interfaces, you must ensure that a source address is configured on some interface in the routing platform. This address is the default address. We recommend that you do this by assigning an address to the loopback interface (lo0), as described in [\[Unresolved xref\]](#). If you configure an address (other than a martian) on the lo0 interface, that address is always the default address, which is preferable because the loopback interface is independent of any physical interfaces and therefore is always accessible.

Example: Configuring an Unnumbered Point-to-Point Interface

Configure an unnumbered point-to-point interface:

```
[edit]
interfaces {
  so-6/1/0 {
    unit 0 {
      family inet;
      family iso;
    }
  }
}
```

Configuring an Unnumbered Ethernet or Demux Interface

To configure an Ethernet or demultiplexing interface to be unnumbered, include the `unnumbered-address` statement in the configuration:

```
[Unresolved xref] interface-name;
```

You can include this statement at the following hierarchy levels:

- [edit interfaces *interface-name* unit *logical-unit-number* family inet]
- [edit logical-systems *logical-system-name* interfaces *interface-name* unit *logical-unit-number* family inet]

The `unnumbered-address` statement currently supports configuration of unnumbered Ethernet or unnumbered demux interfaces only for the IPv4 address family.

The interface that you configure to be unnumbered “borrows” an assigned IPv4 address from another interface, and is therefore referred to as the borrower interface. The interface from which the IP address is borrowed is referred to as the donor interface. In the `unnumbered-address` statement, *interface-name* specifies the donor interface. For an Ethernet unnumbered interface, the donor interface can be an Ethernet, ATM, SONET, or loopback interface that has a logical unit number and configured IP address and is not itself an unnumbered interface. For an IP demultiplexing unnumbered interface, the donor interface can be an Ethernet or loopback interface that has a logical unit number and configured IP address and is not itself an unnumbered interface. In addition, for either Ethernet or demux, the donor interface and the borrower interface must be members of the same routing instance and the same logical system.

When you configure an unnumbered Ethernet or demux interface, the IP address of the donor interface becomes the source address in packets generated by the unnumbered interface.

You can configure a host route that points to an unnumbered Ethernet or demux interface. For information about host routes, see the *JUNOS MPLS Applications Configuration Guide*.

For more information, see the following sections:

- Configuring a Preferred Source Address for Unnumbered Ethernet or Demux Interfaces on page 3
- Configuring Static Routes on Unnumbered Ethernet Interfaces on page 3
- Restrictions for Configuring Unnumbered Ethernet Interfaces on page 4
- Example: Configuring an Unnumbered Ethernet Interface on page 4
- Example: Configuring the Preferred Source Address for an Unnumbered Ethernet Interface on page 5
- Example: Configuring an Unnumbered Ethernet Interface as the Next Hop for a Static Route on page 5

Configuring a Preferred Source Address for Unnumbered Ethernet or Demux Interfaces

When a loopback interface with multiple secondary IPv4 addresses is configured as the donor interface for an unnumbered Ethernet or demux interface, you can optionally specify any one of the loopback interface's secondary addresses as the preferred source address for the unnumbered Ethernet or demux interface. This feature enables you to use an IP address other than the primary IP address on some of the unnumbered Ethernet or demux interfaces in your network.

To configure a secondary address on a loopback donor interface as the preferred source address for an unnumbered Ethernet or demux interface, include the `preferred-source-address` option in the `unnumbered-address` statement:

```
[Unresolved xref] interface-name <preferred-source-address address>;
```

You can include this statement at the following hierarchy levels:

- [edit interfaces *interface-name* unit *logical-unit-number* family inet]
- [edit logical-systems *logical-system-name* interfaces *interface-name* unit *logical-unit-number* family inet]

The following considerations apply when you configure a preferred source address on an unnumbered Ethernet or demux interface:

- The `unnumbered-address` statement currently supports the configuration of a preferred source address only for the IPv4 address family. Configuration of a preferred source address for families other than IPv4 is not currently supported.
- If you do not specify the preferred source address, the router uses the default primary IP address of the donor interface.
- You cannot delete an address on a donor loopback interface while it is being used as the preferred source address for an unnumbered Ethernet or demux interface.
- The router uses the preferred source address, if configured for an unnumbered Ethernet or demux interface, in ARP requests and replies. ARP requests must match the preferred source address.

For a configuration example that illustrates this feature, see “Example: Configuring the Preferred Source Address for an Unnumbered Ethernet Interface” on page 5.

To display the preferred source address for an unnumbered Ethernet or demux interface, use the `show interfaces` operational mode command. For information about using this command, see the *JUNOS Interfaces Command Reference*.

Configuring Static Routes on Unnumbered Ethernet Interfaces

You can configure static routes on an unnumbered Ethernet interface. To do so, you use the `qualified-next-hop` statement to specify the unnumbered Ethernet interface

as the next-hop interface for a configured static route. This feature enables you to specify independent preferences and metrics for static routes on a next-hop basis.

For a configuration example that illustrates this feature, see “Example: Configuring an Unnumbered Ethernet Interface as the Next Hop for a Static Route” on page 5.

For information about how to specify an independent preference for a static route, see the *JUNOS Routing Protocols Configuration Guide*.

Restrictions for Configuring Unnumbered Ethernet Interfaces

The following restrictions apply when you configure unnumbered Ethernet interfaces:

- The **unnumbered-address** statement currently supports the configuration of unnumbered Ethernet interfaces only for the IPv4 address family. Unnumbered Ethernet configuration for families other than IPv4 is not supported.
- You cannot assign an IP address to an Ethernet interface that is already configured as an unnumbered interface.
- The donor interface for an unnumbered Ethernet interface must have one or more configured IP addresses.
- The donor interface for an unnumbered Ethernet interface cannot be configured as unnumbered.
- An unnumbered Ethernet interface does not support configuration of the following **address** statement options: **arp**, **broadcast**, **primary**, **preferred**, and **vrp-group**. For information about these options, see *Configuring the Interface Address*.
- Running IGMP and PIM are supported only on unnumbered Ethernet interfaces that directly face the host and have no downstream PIM neighbors. IGMP and PIM are not supported on unnumbered Ethernet interfaces that act as upstream interfaces in a PIM topology.
- Running OSPF and IS-IS on unnumbered Ethernet interfaces is not supported.
- You cannot configure this feature on the TX Matrix platform.
- The configuration of unnumbered Ethernet interfaces is not supported when graceful Routing Engine switchover (GRES) is enabled on the router.

Example: Configuring an Unnumbered Ethernet Interface

In this example, **ge-1/0/0** is the unnumbered interface and **ge-0/0/0** is the donor interface from which **ge-1/0/0** “borrows” an IP address.

```
interfaces {
  ge-0/0/0 {
    unit 0 {
      family inet {
        address 4.4.4.1/24;
      }
    }
  }
  ge-1/0/0 {
    unit 0 {
```

```

        family inet {
            unnumbered-address ge-0/0/0.0;
        }
    }
}

```

Example: Configuring the Preferred Source Address for an Unnumbered Ethernet Interface

In this example, loopback interface `lo0` is the donor interface from which unnumbered Ethernet interface `ge-4/0/0` “borrows” an IP address. The example also configures one of the loopback interface’s secondary addresses, `3.3.3.1`, as the preferred source address for the unnumbered Ethernet interface.

```

interfaces {
    lo0 {
        unit 0 {
            family inet {
                address 2.2.2.1/32;
                address 3.3.3.1/32;
            }
        }
    }
}
interfaces {
    ge-4/0/0 {
        unit 0 {
            family inet {
                unnumbered-address lo0.0 preferred-source-address 3.3.3.1;
            }
        }
    }
}

```

Example: Configuring an Unnumbered Ethernet Interface as the Next Hop for a Static Route

In this example, `ge-0/0/0` is the unnumbered interface and a loopback interface, `lo0`, is the donor interface from which `ge-0/0/0` “borrows” an IP address. The example also configures a static route to `7.7.7.1/32` with a next hop through unnumbered interface `ge-0/0/0.0`.

```

interfaces {
    lo0 {
        unit 0 {
            family inet {
                address 5.5.5.1/32;
                address 6.6.6.1/32;
            }
        }
    }
}
interfaces

```

```

ge-0/0/0 {
  unit 0 {
    family inet {
      unnumbered-address lo0.0;
    }
  }
}
routing-options {
  static {
    route 7.7.7.1/32 {
      qualified next-hop ge-0/0/0.0;
    }
  }
}

```