

Configuring Ethernet Redundancy (SRC CLI)

Group interfaces let you aggregate network interfaces into a single logical interface to support Ethernet redundancy. The group interfaces provide either hot standby or load-balancing services.

When you configure group interfaces, be aware of the following restrictions:

- The group interface name must not be one of the Ethernet interface names (that is, eth0, eth1, eth2, eth3).
- If an Ethernet interface is listed inside a group interface, it must not be configured as an interface by itself at the [edit interfaces name unit] hierarchy level.
- Group interface and tunnel interface configurations are mutually exclusive. You cannot configure both types at the same time.

You can group interfaces in the following modes:

- Round-robin policy (balance-rr)—Transmit packets in sequential order from the first available device through the last.
- Active-backup policy (active-backup)—Create only one device that is active. A different device becomes active if, and only if, the active device fails.
- XOR policy (balance-xor)—Transmit based on the selected transmit hash policy.
- Broadcast policy (broadcast)—Transmit everything on all device interfaces.
- IEEE 802.3ad Dynamic link aggregation (802.3ad)—Create aggregation groups that share the same speed and duplex settings.
- Adaptive transmit load balancing (balance-tlb)—Create channel bonding that does not require any special switch support.
- Adaptive load balancing (balance-alb)—Includes adaptive transmit load balancing (balance-tlb) plus receive load balancing (rlb) for IPv4 traffic, and does not require any special switch support.

You can monitor link integrity with the ARP monitor or the MII monitor. You cannot use both the ARP monitor and the MII monitor at the same time.

The MII monitor monitors only the carrier state of the local network interface. The MII monitor does not provide a high level of detection for end-to-end connectivity failures.

The ARP monitor sends ARP queries to one or more designated peer systems on the network, and uses the response as an indication that the link is operating. The ARP monitor provides more reliable monitoring of end-to-end connectivity because you can set up several targets for high availability. However, some of the advanced load balancing modes do not support use of the ARP monitor.

Configuring Group Interfaces (SRC CLI)

Use the following statements to configure the group interface:

```
interfaces name group {
```

```

mode (balance-rr | active-backup | balance-xor | broadcast | 802.3ad | balance-tlb |
    balance-alb);
lacp-rate (slow | fast);
interfaces [interfaces...];
primary primary;
transmit-hash-policy (layer2 | layer3+4);
}

```

To configure an Ethernet group interface:

1. From configuration mode, access the configuration statement that configures the bonded interface.

```

[edit]
user@host# edit interfaces name group

```

2. Specify the mode in which you want to group the interfaces.

```

[edit interfaces name group]
user@host# set mode mode

```

3. (Optional) Specify the rate at which the link partner is requested to transmit Link Aggregation Control Protocol Data Unit (LACPDU) packets in 802.3ad mode. This option is valid only for the 802.3ad mode.

```

[edit interfaces name group]
user@host# set lacp-rate (slow | fast)

```

where:

- **slow**—Request partner to transmit LACPDU every 30 seconds.
- **fast**—Request partner to transmit LACPDU every 1 second.

4. Specify the Ethernet interfaces in this group.

```

[edit interfaces name group]
user@host# set interfaces [interfaces...]

```

5. (Optional) Specify the device that will always be the active device while it is available. This option is valid only for the active-backup mode.

```

[edit interfaces name group]
user@host# set primary primary

```

6. (Optional) Specify the transmit hash policy to use for device selection in balance-xor and 802.3ad modes. This option is valid only for the balance-xor or 802.3ad mode.

```

[edit interfaces name group]
user@host# set transmit-hash-policy (layer2 | layer3+4)

```

where:

- **layer2**—Uses XOR of hardware MAC addresses to generate the hash.

- layer3 + 4—Uses upper-layer protocol information, when available, to generate the hash.
7. Configure the unit for the group interface.

Configuring the MII Monitor (SRC CLI)

Use the following statements to configure MII link monitoring:

```
interfaces name group {
  downdelay downdelay;
  updelay mii-monitoring-interval;
  mii-monitoring-interval mii-monitoring-interval;
}
```

To configure the MII monitor:

1. From configuration mode, access the configuration statement that configures the bonded interface.

```
[edit]
user@host# edit interfaces name group
```

2. (Optional) Specify the time to wait before disabling a device after a link failure has been detected. This option is valid only for the MII monitor.

```
[edit interfaces name group]
user@host# set downdelay downdelay
```

3. (Optional) Specify the time to wait before enabling a device after a link recovery has been detected. This option is valid only for the MII monitor.

```
[edit interfaces name group]
user@host# set updelay updelay
```

4. (Optional) Specify the MII link monitoring frequency.

```
[edit interfaces name group]
user@host# set mii-monitoring-interval mii-monitoring-interval
```

Configuring the ARP Monitor (SRC CLI)

Use the following statements to configure ARP link monitoring:

```
interfaces name group arp-monitoring {
  interval interval;
  ip-target [ip-target...];
}
```

To configure the ARP monitor:

1. From configuration mode, access the configuration statement that configures the ARP link monitoring for the bonded interface.

```
[edit]  
user@host# edit interfaces name group arp-monitoring
```

2. Specify the ARP link monitoring frequency.

```
[edit interfaces name group arp-monitoring]  
user@host# set interval interval
```

3. Specify the IP addresses to use as ARP monitoring peers. You must specify at least one address.

```
[edit interfaces name group arp-monitoring]  
user@host# set ip-target [ip-target...]
```