

Configuring Frame Relay Keepalives

By default, physical interfaces configured with Cisco High-level Data Link Control (HDLC) or Point-to-Point Protocol (PPP) encapsulation send keepalive packets at 10-second intervals. The Frame Relay term for keepalives is Local Management Interface (LMI) packets; note that the JUNOS software supports both ANSI T1.617 Annex D LMIs and ITU Q933 Annex A LMIs.

To disable the sending of keepalives on a physical interface, include the `no-keepalives` statement at the `[edit interfaces interface interface-name]` hierarchy level:

```
[edit interfaces interface-name]  
no-keepalives;
```

For back-to-back Frame Relay connections, either disable the sending of keepalives on both sides of the connection, or configure one side of the connection as a data terminal equipment (DTE) (the default JUNOS configuration) and the other as a data circuit-terminating equipment (DCE).

If keepalives are enabled, the number of possible DLCI configurations on a multipoint or multicast connection is limited by the MTU size selected for the interface. To calculate the available DLCIs, use the formula $(MTU - 12) / 5$. To increase the number of possible DLCIs, disable keepalives.

Configuring Tunable Keepalives for Frame Relay LMI

On interfaces configured with Frame Relay connections, you can tune the keepalive settings by using the `lmi` statement. A Frame Relay interface can be either DCE or DTE (the default JUNOS configuration). DTE acts as a master, requesting status from the DCE part of the link.

By default, the JUNOS software uses ANSI T1.617 Annex D LMIs. To change to ITU Q933 Annex A LMIs, include the `lmi-type itu` statement at the `[edit interfaces interface-name lmi]` hierarchy level:

```
[edit interfaces interface-name lmi]  
lmi-type itu;
```

To configure Frame Relay keepalive parameters, include the `lmi` statement at the `[edit interfaces interface-name]` hierarchy level:

```
[edit interfaces interface-name]  
lmi (interfaces) {  
  lmi-type (ansi | itu);  
  n391dte number;  
  n392dce number;  
  n392dte number;  
  n393dce number;  
  n393dte number;  
  t391dte seconds;  
  t392dce seconds;  
}
```

You can include the following statements:

- **n391dte**—DTE full status polling interval. The DTE sends a status inquiry to the DCE at the interval specified by **t391dte**. **n391dte** specifies the frequency at which these inquiries expect a full status report; for example, a **n391dte** value of 10 would specify a full status report in response to every tenth inquiry. The intermediate inquiries ask for a keepalive exchange only. The range is from 1 through 255, with a default value of 6.
- **n392dce**—DCE error threshold. The number of errors required to bring down the link, within the event-count specified by **n393dce**. The range is from 1 through 10, with a default value of 3.
- **n392dte**—DTE error threshold. The number of errors required to bring down the link, within the event-count specified by **n393dte**. The range is from 1 through 10, with a default value of 3.
- **n393dce**—DCE monitored event-count. The range is from 1 through 10, with a default value of 4.
- **n393dte**—DTE monitored event-count. The range is from 1 through 10, with a default value of 4.
- **t391dte**—DTE keepalive timer. Period at which the DTE sends out a keepalive response request to the DCE and updates status depending on the DTE error threshold value. The range is from 5 through 30 seconds, with a default value of 10 seconds.
- **t392dce**—DCE keepalive timer. Period at which the DCE checks for keepalive responses from the DTE and updates status depending on the DCE error threshold value. The range is from 5 through 30 seconds, with a default value of 15 seconds.