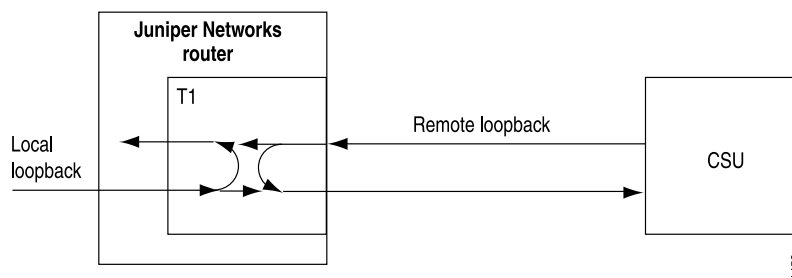


Configuring T1 Loopback Capability

You can configure loopback capability between the local T1 interface and the remote channel service unit (CSU), as shown in Figure 1. You can configure the loopback to be local or remote. With local loopback, the T1 interface can transmit packets to the CSU, but receives its own transmission back again and ignores data from the CSU. With remote loopback, packets sent from the CSU are received by the T1 interface, forwarded if there is a valid route, and immediately retransmitted to the CSU.

Figure 1: Remote and Local T1 Loopback



To configure loopback capability on a T1 interface, include the **loopback** statement at the [edit interfaces *interface-name* t1-options] hierarchy level:

```
[edit interfaces interface-name t1-options]  
[Unresolved xref] (local | payload | remote);
```

Packets can be looped on either the local routing platform or the remote CSU. Local and remote loopback loop back both data and clocking information.

To exchange BERT patterns between a local routing platform and a remote routing platform, include the **loopback remote** statement in the interface configuration at the remote end of the link. From the local routing platform, issue the **test interface** command.

For more information about configuring BERT, see Interface Diagnostics. For more information about using operational mode commands to test interfaces, see the *JUNOS System Basics and Services Command Reference*.

For channelized T3, T1, and NxDS0 intelligent queuing (IQ) interfaces only, you can include the **loopback payload** statement in the configuration to loop back data only (without clocking information) on the remote routing platform's PIC. In payload loopback, overhead is recalculated. For T3 IQ interfaces, you can include the **loopback payload** statement at the [edit interfaces *ct3-fpc/pic/port*] and [edit interfaces *t3-fpc/pic/port:channel*] hierarchy levels. For T1 interfaces, you can include the **loopback payload** statement in the configuration at the [edit interfaces *t1-fpc/pic/port:channel*] hierarchy level; it is ignored if included at the [edit interfaces *ct1-fpc/pic/port*] hierarchy level. For NxDS0 interfaces, payload and remote loopback are the same. If you configure one, the other is ignored. NxDS0 IQ interfaces do not support local loopback.

To determine whether a problem is internal or external, you can loop packets on both the local and the remote routing platform. To do this, include the `no-keepalives` and `encapsulation cisco-hdlc` statements at the `[edit interfaces interface-name]` hierarchy level and the `loopback local` statement at the `[edit interfaces interface-name t1-options]` hierarchy level, as shown in the following example:

```
[edit interfaces]
t1-1/0/0 {
  no-keepalives;
  encapsulation cisco-hdlc;
  t1-options {
    loopback local;
  }
  unit 0 {
    family inet {
      address 10.100.100.1/24;
    }
  }
}
```

With this configuration, the link stays up, so you can loop ping packets to a remote routing platform. The `loopback local` statement causes the interface to loop within the PIC just before the data reaches the transceiver.

To turn off the loopback capability, remove the `loopback` statement from the configuration:

```
[edit]
user@host# delete interfaces t1-fpc/pic/port t1-options loopback
```

You can determine whether there is an internal problem or an external problem by checking the error counters in the output of the `show interface interface-name extensive` command, for example:

```
user@host> show interfaces t1-fpc/pic/port extensive
```