

Chapter 6

Monitor T3 Interfaces

This chapter describes how to monitor T3 interfaces and begin the process of isolating T3 interface problems when they occur. (See Table 12.)

Table 12: Checklist for Monitoring T3 Interfaces

T3 Interface Monitor Tasks	Command or Action
Monitor T3 Interfaces on page 52	
1. Display the Status of T3 Interfaces on page 52	<code>show interfaces terse t3*</code>
2. Display the Status of a Specific T3 Interface on page 53	<code>show interfaces t3-<i>fpc/pic/port</i></code>
3. Display Extensive Status Information for a Specific T3 Interface on page 53	<code>show interfaces t3-<i>fpc/pic/port</i> extensive</code>
4. Monitor Statistics for a T3 Interface on page 55	<code>monitor interface t3-<i>fpc/pic/port</i></code>

Monitor T3 Interfaces

Purpose By monitoring T3 interfaces, you begin the process of isolating T3 interface problems when they occur.

Steps To Take To monitor T3 interfaces, follow these steps:

1. Display the Status of T3 Interfaces on page 52
2. Display the Status of a Specific T3 Interface on page 53
3. Display Extensive Status Information for a Specific T3 Interface on page 53
4. Monitor Statistics for a T3 Interface on page 55

Step 1: Display the Status of T3 Interfaces

Action To display the status of T3 interfaces, use the following JUNOS command-line interface (CLI) operational mode command:

```
user@host> show interfaces terse t3*
```

Sample Output

```
user@host> show interfaces terse t3*
Interface  Admin Link Proto Local      Remote
t3-1/0/0   down up              - administratively disabled
t3-1/0/0.0 up   down inet  1.1.1.1/30
t3-1/0/1   up   down
t3-1/0/1.0 up   down inet  2.2.2.2/30 - link layer down
t3-1/0/2   up   up
t3-1/0/2.0 up   up   inet  3.3.3.3/30 - link layer up
t3-1/0/3   up   down
```

What It Means The sample output shows the status of both the physical and logical interfaces. See Table 13 for a description of what the output means.

Table 13: Status of T3 Interfaces

Physical Interface	Logical Interface	Status Description
t3-1/0/0 Admin Down Link Up	t3-1/0/0.0 Admin Up Link Down	This interface is administratively disabled and the physical link is healthy (Link Up), but the logical interface is not established. The logical interface is down because the physical link is disabled (Link Down).
t3-1/0/1 Admin Up Link Down	t3-1/0/1.0 Admin Up Link Down	This interface is not functioning between the local router and the remote router because both the physical and logical links are down (Link Down). The interface is not administratively disabled because both the physical and logical links are up (Admin Up).
t3-1/0/2 Admin Up Link Up	t3-1/0/2.0 Admin Up Link Up	This interface has both the physical and logical links up and running.
fe-1/0/3 Admin Up Link Down		This interface does not have a logical link configured.

Step 2: Display the Status of a Specific T3 Interface

Action To display the status of a specific T3 interface when you need to investigate its status further, use the following JUNOS CLI operational mode command:

```
user@host> show interfaces t3-fpc/pic/port
```

Sample Output

```
user@host> show interfaces t3-1/0/0
Physical interface: t3-1/0/0, Enabled, Physical link is Down
Interface index: 9, SNMP ifIndex: 10
Link-level type: Cisco-HDLC, MTU: 4474, Clocking: Internal
Speed: T3, Loopback: None, CRC: 16, Mode: C/Bit parity
Device flags : Present Running Down
Interface flags: Hardware-Down Link-Layer-Down Point-To-Point SNMP-Traps
Link flags   : Keepalives
Keepalive Input: 116 (00:02:32 ago), Output: 185 (00:00:02 ago)
Input rate   : 0 bps (0 pps), Output rate: 0 bps (0 pps)
Active alarms : LOF, LOS
Active defects : LOF, LOS
Logical interface t3-1/0/0.0 (Index 12) (SNMP ifIndex 32)
Flags: Device-down Point-To-Point SNMP-Traps, Encapsulation: Cisco-HDLC
Protocol inet, MTU: 4470
Addresses, Flags: Dest-route-down Is-Preferred Is-Primary
Destination: 1.1.1.0/30, Local: 1.1.1.1
```

What It Means The first line of the sample output shows the status of the link. If this line shows that the physical link is up, the physical link is healthy and can pass packets. If this line shows that the physical link is down, the physical link is unhealthy and cannot pass packets.

Step 3: Display Extensive Status Information for a Specific T3 Interface

Action To display extensive status information about a specific T3 interface, use the following JUNOS CLI operational mode command:

```
user@host> show interfaces t3-fpc/pic/port extensive
```

Sample Output

```
user@router> show interfaces t3-1/0/0 extensive
Physical interface: t3-1/0/0, Enabled, Physical link is Down
Interface index: 9, SNMP ifIndex: 10
Link-level type: Cisco-HDLC, MTU: 4474, Clocking: Internal
Speed: T3, Loopback: None, CRC: 16, Mode: C/Bit parity
Device flags : Present Running Down
Interface flags: Hardware-Down Link-Layer-Down Point-To-Point SNMP-Traps
Link flags   : Keepalives
Keepalive statistics:
  Input : 116 (last seen 00:02:59 ago)
  Output: 187 (last seen 00:00:09 ago)
Statistics last cleared: Never
Traffic statistics:
Input bytes :          2552          0 bps
Output bytes :          3703          0 bps
Input packets:          116          0 pps
Output packets:          161          0 pps
Input errors:
- Input errors
  Errors: 0, Drops: 0, Framing errors: 229, Policed discards: 1
  L3 incompletes: 0, L2 channel errors: 0, L2 mismatch timeouts: 0
  SRAM errors: 0, HS link CRC errors: 0
Output errors:
- Output errors
```

```

Carrier transitions: 4, Errors: 0, Drops: 0, Aged packets: 0
Active alarms : LOF, LOS           - DS3 active alarms and defects
Active defects : LOF, LOS
DS3 Media:      Seconds      Count State - T3 media-specific errors
PLL Lock        0           0 OK
Reframing       273         2 Defect Active
AIS             0           0 OK
LOF             273         2 Defect Active
LOS             273         2 Defect Active
IDLE            0           0 OK
YELLOW          0           0 OK
BPV             0           0
EXZ             0           0
LCV             275        18022125
PCV             0           0
CCV             0           0
LES             275
PES             273
PSES            273
CES             273
CSES            273
SEFS            273
UAS             277

HDLC configuration:
Policing bucket: Disabled
Shaping bucket : Disabled
Giant threshold: 4484, Runt threshold: 3
DSU configuration:
Compatibility mode: None, Scrambling: Disabled, Subrate: Disabled
FEAC loopback: Inactive, Response: Disabled, Count: 0
BERT time period: 10 seconds, Elapsed: 0 seconds
Algorithm: 2^3 - 1, Pseudorandom (1), Error rate: 10e-0
PFE configuration:
Destination slot: 1, Stream number: 0, PLP byte: 1 (0x00)
COS transmit queue bandwidth:
  Queue0: 95, Queue1: 0, Queue2: 0, Queue3: 5
COS weighted round robin:
  Queue0: 95, Queue1: 0, Queue2: 0, Queue3: 5
Logical interface t3-1/0/0.0 (Index 12) (SNMP ifIndex 32)
Flags: Device-down Point-To-Point SNMP-Traps, Encapsulation: Cisco-HDLC
Protocol inet, MTU: 4470, Flags: None
Addresses, Flags: Dest-route-down Is-Preferred Is-Primary
  Destination: 1.1.1.0/30, Local: 1.1.1.1, Broadcast: Unspecified

```

What It Means The sample output shows where the errors might be occurring. Look at the active alarms and active defects for the T3 interface and investigate the T3 media accordingly. See “Locate T3 Alarms and Errors” on page 71 for an explanation of T3 alarms.

Step 4: Monitor Statistics for a T3 Interface

Action To monitor statistics for a T3 interface, use the following JUNOS CLI operational mode command:

```
user@host> monitor interface t3-fpc/pic/port
```

Sample Output user@host> **monitor interface t3-1/0/0**
router Seconds: 78 Time: 21:44:15

```
Interface: t3-1/0/0, Enabled, Link is Down
Encapsulation: Cisco-HDLC, Keepalives, Speed: T3
Traffic statistics:          Current Delta
Input bytes:      0 (0 bps)      [0]
Output bytes:    207 (184 bps)   [184]
Input packets:   0 (0 pps)      [0]
Output packets:  9 (1 pps)      [8]
Encapsulation statistics:
Input keepalives: 0              [0]
Output keepalives: 9            [8]
Error statistics:
Input errors:     0              [0]
Input drops:     0              [0]
Input framing errors: 9          [8]
CCV              0              [0]

Interface warnings:
o Received keepalive count is zero
o Framing errors, check FCS, scrambling and subrate configuration

Next='n', Quit='q' or ESC, Freeze='f', Thaw='t', Clear='c', Interface='i'
```

What It Means This command checks for and displays common interface failures, indicates whether loopback is detected, and reports any increases in framing errors. Use the information from this command to narrow down possible causes of an interface problem.



NOTE: If you are accessing the router from the console connection, make sure you set the CLI terminal type using the set cli terminal command.

Table 14 presents problem situations and actions to help you further understand the problem.

Table 14: Problem Situations and Actions

Problem Situation	Action
Framing errors are increasing.	Check the frame check sequence (FCS), scrambling, and subrate configuration.
Framing errors are increasing, and the configuration is correct.	Check the cabling to the router and have the carrier verify the integrity of the line.
Input errors are increasing.	Check the cabling to the router and have the carrier verify the integrity of the line.



NOTE: We recommend that you use this command only for troubleshooting purposes. Do not leave it on during normal router operations because real-time monitoring of traffic consumes additional CPU and memory resources.