

NTM Tx TS Pkt Drp Errors

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Introduction

Prerequisites

- Requirements

- Components Used

- Conventions

The Tx TS Pkt Drp Error

Error Example

Troubleshooting

- Use the `dsprkutl` Command

- Use the `dspcon` and `dspchcnf` Commands

- Use the `cnftrkparm` Command

Related Information

Introduction

This document describes the IGX Network Trunk Module (NTM) transmit (Tx) timestamp (TS) packet drop error Tx TS Pkt Drp.

Prerequisites

Requirements

There are no specific prerequisites for this document.

Components Used

This document is not restricted to specific software and hardware versions.

The information presented in this document was created from devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If you are working in a live network, ensure that you understand the potential impact of any command before using it.

Conventions

For more information on document conventions, see the Cisco Technical Tips Conventions.

The Tx TS Pkt Drp Error

The Tx TS Pkt Drp error applies to the IGX NTM with T1, E1, and subrate (SR) backcards and indicates the number of cells discarded from the trunk queues described in the following table.

Trunk Queue	Traffic Description
Voice	Voice activity detection (VAD) voice traffic.
TS	Low-speed data, voice signaling traffic.

Non-TS	High-speed data, non-VAD voice, and modem traffic.
Control Card (CC)	NPM and first two packets of talkspurt traffic.
Bursty data A (BData A)	(This was the High Priority queue.) Non-Foresight frame relay and high-level data link control (HDLC) frame-forwarded traffic.
Bursty data B (BData B)	Foresight frame relay and HDLC frame-forwarded traffic.

A Tx TS Pkt Drp error can be the result of the following:

- Foresight frame relay and HDLC frame-forwarded traffic.
- High trunk utilization as verified using the SuperUser-level **dsprkutil** command.

Packet drops can occur when trunk utilization reaches 85 percent. This situation most likely occurs if the utilization of connections was underestimated during configuration.

For statistical real-time services such as low-speed data connections with data frame multiplexing (DFM), trunk bandwidth is assigned to each connection based on the configuration of the connection. DFM provides data compression using a repetitive pattern suppression algorithm.

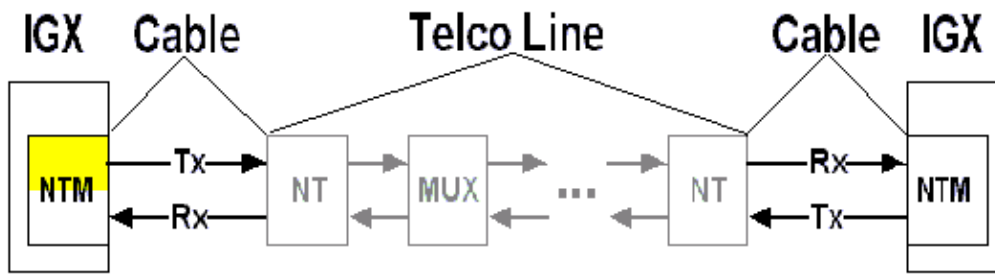
If the assumption about how much bandwidth DFM can save was too optimistic, connections may generate more FastPackets than the trunk can handle. NTM queue overflow can result in TS packet drops on the trunk.

Packet drops on trunk queues typically do not follow predictable patterns because actual fill grade can vary for the TS queue, and because the rate of FastPackets per connection depends on the traffic patterns of the end system. However, during peak hours, more drops will occur than during off-peak hours.

If a small number of packet drops occurs, monitor the trunk for a few days. Take action only if discards reduce service quality. If service quality is affected, the most likely symptom is end-system retransmission or timeouts.

Error Example

The likely location of equipment errors is highlighted in yellow in the following illustration:



Pkt Drop

NTM = Network Trunk Module
NT = Network Termination

Tx = Transmit Rx = Receive
MUX = Multiplexer in Telco line path

Troubleshooting

The solutions to the NTM Tx TS Pkt Drp error problem are explained in detail below.

Use the `dsptrkutl` Command

Use the SuperUser-level `dsptrkutl` command to verify current trunk utilization. Complete the following steps:

1. Use the `clrtrkerrs` command frequently to clear trunk error statistics.
2. Use the `dsptrkerrs` command to determine if packets are being dropped. If packets are being dropped, use the `dsptrkutl` command to find current trunk utilization. If the `Peak Interval Utilization` field is higher than 85 percent, the packet drops are the result of queue overflows.
3. Route the TS connections over alternate trunks for immediate relief.
4. Evaluate and then correct the network design of connection parameters to resolve the problem permanently.

Use the `dspcon` and `dspchcnf` Commands

For TS connections, the data rate and utilization parameters affect trunk bandwidth allocation. Use the `dspcon` and `dspchcnf` commands to verify connection settings. Complete the following steps:

1. Delete and re-add the connection to change the data rate parameter.



Caution: Consider all network specific requirements before changing the queue depth because all TS connections on the trunk will be affected.

2. Use the `cnfchutl` command to change the utilization parameter. The lower the configured utilization for a TS connection, the greater the number of TS connections that will be loaded onto one trunk by the routing algorithm. The higher the number of TS connections, the higher the probability of Tx TS Pkt Drp errors.

Use the `cnftrkparm` Command

Use the `cnftrkparm` command to verify all trunk parameters. Complete the following steps:

1. Analyze the `Transmit Queue Depth TS` field of the `cnftrkparm` command to verify data

connections.

2. Continue to use the **cnftrkparm** command to compare the problem trunk settings to the default values or to other trunks that have similar traffic without packet drops.



Caution: Consider network-specific requirements before changing the queue depth because of the impact changes would have on all TS connections on the trunk.

3. If you are still receiving Tx TS Pkt Drp errors, contact the Cisco Systems Technical Assistance Center (TAC).

Related Information

- [Cisco WAN Switching Solutions](#)
- [How to Distinguish Between Different IGX NTM Models](#)
- [WAN Switching Network Synchronization Fundamentals](#)
- [International Telephony Union \(ITU\) Recommendation G.704](#)
- [Technical Support – Cisco Systems](#)

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