

# BTM Tx Non-TS Pkt Drp Errors

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- Introduction**
- Prerequisites**
  - Requirements
  - Components Used
  - Conventions
- Error Definition**
- Error Example**
- Troubleshooting**
- Related Information**

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## Introduction

This document provides troubleshooting information on broadband trunk module (BTM) Tx Non-TS Pkt Drp errors.

## Prerequisites

### Requirements

There are no specific requirements for this document.

### Components Used

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

### Conventions

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

## Error Definition

This error applies to the IGX BTM with E1, E2, E3, and T3 backcards.

BTM packet drop errors indicate the number of cells discarded from these trunk queues:

Voice	Voice activity detection (VAD) voice traffic
Timestamped (TS)	Low-speed data and voice-signaling traffic
Non-timestamped (Non-TS)	High-speed data, non-VAD voice, and modem traffic
Control Card (CC)	Network processor module (NPM) and the first two packets of talkspurt traffic. (This was the High Priority queue.)

Bursty data A (BData A)	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

Tx Non-TS Pkt Drp causes include:

- High Trunk Utilization

Use the SuperUser-level command **dsprkutil** to check for high trunk utilization. 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 data connections with data frame multiplexing (DFM), trunk bandwidth is assigned to each connection and is based on the configuration connection. DFM provides data compression using a repetitive, pattern-suppressing algorithm.

If the assumption about how much bandwidth DFM can save was too optimistic, then connections can generate more FastPackets than the trunk can handle. BTM queue overflow can result in Tx Non-TS Pkt Drp errors on the trunk.

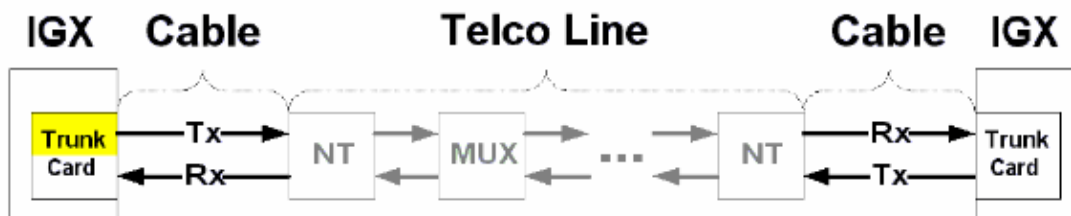
Because actual fill grade can vary quickly for the non-timestamped (Non-TS) queue, and because the rate of FastPackets per connection depends on the traffic patterns of the end system, packet drops on trunk queues typically do not follow predictable patterns. Still, more drops occur during peak hours 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 this occurs, the most likely symptom is end-system retransmission or timeouts.

- Misconfigured trunk parameters as indicated by the SuperUser-level command **cnftrkparm**.

## Error Example

The likely location of equipment errors is highlighted in yellow here:



Tx Pkt Drop

NT = Network Termination  
MUX = Multiplexer in Telco Line Path

Tx = Transmit  
Rx = Receive

# Troubleshooting

Use this procedure to troubleshoot the Tx Non-TS Pkt Drp errors:

1. Issue the SuperUser-level **dsprkutil** command to check current trunk utilization.
  - a. Issue the **clrtrkerrs** command frequently to clear trunk error statistics.
  - b. When **dsprkerrs** shows dropped packets, issue the **dsprkutil** command to find current trunk utilization. If the Peak Interval Utilization field is higher than 85, queue overflows are the cause of packet drops.
  - c. Issue the **dsprks** command to identify the distant-end switch and trunk number. Issue the **vt** command to open a virtual session with the distant-end switch. Verify trunk errors and utilization at the distant end with the previous commands.
  - d. For immediate relief, route high-speed data and non-VAD voice connections over alternate trunks. Issue the SuperUser-level **dsprkcons** command to identify the number of connections routed over the problem trunk.
  - e. Issue the **dsprts** command to identify the connection identifiers and current route for all connections routed across the problem trunk.
  - f. Issue these SuperUser-level commands to display utilization for each connection routed across the problem trunk:
    - ◇ **dsputl** Voice connection
    - ◇ **dsputl** Data connection
    - ◇ **dsprchstats** ATM or Frame Relay connection
2. To resolve the problem, evaluate the network design of connection parameters and correct as necessary. For non-VAD voice and high-speed data connections, utilization is the parameter that affects trunk bandwidth allocation.
  - a. Issue the **dsprcon** and **dsprchcnf** commands to verify connection settings.
  - b. To change utilization, issue the **cnfchutil** command. The lower the configured utilization for a voice connection, the greater the number of voice connections that are loaded onto one trunk by the routing algorithm. The higher the number of connections, the higher the probability of Tx Non-TS Pkt Drp errors.
3. For switch software to allocate the correct amount of bandwidth required on the BTM trunk, the configured utilization value must reflect actual activity on the connection. If the configured value does not reflect the actual activity on the channel, the switch software allocates an incorrect amount of minimum bandwidth. This discrepancy occurs when DFM cannot work due to data patterns from the end application that constantly change. An incorrect utilization configuration for one connection usually does not cause any problems, but packet drops may result when the configured utilization of many DFM data connections is lower than actual utilization.
  - a. Issue the SuperUser-level commands **cnftrkstats**, **dsprkstatcnf**, and **dsprkstatthist** to collect and view target trunk statistics. The statistics require significant network process module (NPM) processing time. Enable them only for troubleshooting activities.
  - b. Use Cisco WAN Manager statistics to evaluate long term trunk use.
4. Issue the **cnftrkparm** command to check all trunk parameters.
  - a. Compare the problem trunk settings to the default values or to other trunks that have similar traffic without packet drops. Important parameters for non-VAD voice and high-speed data connections are the Transmit Queue Depth settings for the Non TS field of **cnftrkparm**.
  - b. Consider network specific requirements before you change the queue depth because changes affect all voice connections on this trunk.

If the problem persists after you perform the troubleshooting steps, contact Cisco Technical Support at (800) 553-24HR, (408) 526-7209, the Cisco Technical Support Website, or send e-mail to [tac@cisco.com](mailto:tac@cisco.com).

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## Related Information

- [More BTM Trunk Alarm Types](#)
  - [WAN Switching Network Synchronization Fundamentals](#)
  - [International Telephony Union \(ITU\) Recommendation G.704](#)
  - [Cisco WAN Switching Solutions – Cisco Documentation](#)
  - [Guide to New Names and Colors for WAN Switching Products](#)
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