NTM Tx Bdata B Pkt Drp Errors

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Introduction

This document discusses network trunk module (NTM) transmit Bursty data B (`Bdata B`) packet drop errors and provides steps to troubleshoot these errors.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

The information in this document applies to the IGX" NTM with T1, E1, and subrate (SR) back cards.

Conventions

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

Error Definition

NTM packet drop errors indicate the number of cells that are discarded from these trunk queues:

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

(BData A)	high−level data link control (HDLC) frame−forwarded traffic.
Bursty data B (BData B)	Foresight Frame Relay and HDLC frame−forwarded traffic.

`BData B Pkt Drp` errors can have these causes:

- High trunk utilization, as verified with the SuperUser−level command **dsptrkutl**. Packet drops can occur when trunk utilization reaches 85 percent. Frame Relay (FR) traffic is very bursty, which causes short−term load variations on BData B trunk queues. Though BData B queues are relatively large by default, they are not able to cope with all of the possible statistical events, such as correlated bursts from many connections. Occasional BData B packet drops generally pose no problem.

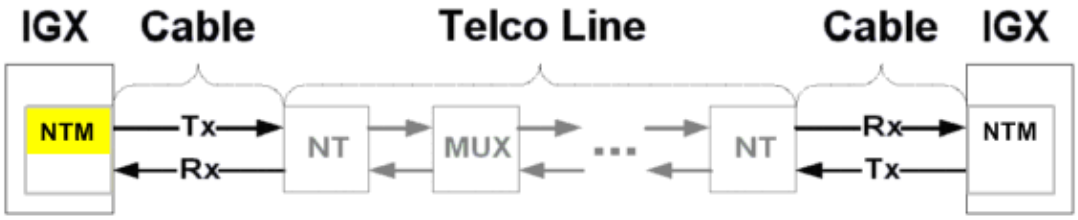
  If packet drops from the BData B queue continue, verify your utilization assumptions for the FR connections. The FR connection settings of minimum information rate (`MIR`), percent utilization (`%Util`), and credit maximum (`Cmax`) are particularly important, if packet drops are ongoing.

  If a small number of packet drops occurs, monitor the trunk for a few days. Take action if the discards reduce service quality. If this is the case, the most likely symptom is end−system retransmission or timeouts.
- Incorrectly configured trunk parameters, as indicated in the SuperUser−level command **cnftrkparm**.

Error Example

The likely location of equipment errors is highlighted in yellow in this diagram:

Tx BData B Pkt Drop



- NTM Network Trunk Module
- NT Network Termination
- MUX The Multiplexer in the Telco line path.
- Rx Receive
- Tx Transmit

Troubleshooting

Follow these steps to troubleshoot the error:

1. Issue the SuperUser−level **dsptrkutl** *trunk number* command to check current trunk utilization.

   a. Issue the **clrtrkerrs** command frequently, to clear trunk error statistics.
   b. When **dsptrkerrs** shows dropped packets, issue the **dsptrkutl** command to find current trunk utilization. If the `Peak interval Utilization` field is higher than 85 percent, packet drops are the result of queue overflows.
   c. For immediate relief, route FR connections over alternate trunks.

d. To resolve the problem permanently, evaluate the network design of connection parameters and correct as necessary.

2. For FR connections, the parameters that affect trunk bandwidth allocation for a connection are `MIR` and `%Util`. Issue the **dspcon** command to verify `MIR` and `%Util` settings.

   a. To change the `MIR` or `%Util` settings, issue the **cnffrcon** command.

      The lower the `%Util` for an FR connection, the greater the number of FR connections that will be loaded onto one trunk by the routing algorithm. The higher the number of FR connections, the higher the probability of `Tx BData B Pkt Drp` errors.

   b. For switch software to allocate the correct amount of bandwidth required on the NTM trunk, the configured value must reflect actual activity on the connection.

      Packet drops result when the configured utilization of many FR connections is lower than their actual use.

   c. Issue the **cnftrkstats**, **dsptrkstatcnf**, and **dsptrkstathist** commands to collect and view target trunk statistics.

      Caution: The statistics require significant NPM processing time and should only be enabled for troubleshooting activities.

   d. Use Cisco WAN Manager statistics to evaluate trunk use over the long term.

3. Issuing the **dspcon** command to check the `Cmax` setting.

   `Cmax` determines the size of initial bursts that are allowed into the network at port speed. A large `Cmax` setting increases the probability of `Tx BData B Pkt Drp` errors. The default value is 10, and it should not be changed without investigation.

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. An important parameter for data connections is the `Transmit Queue Depth TS` field of **cnftrkparm**.

   b. Consider network−specific requirements before you change the queue depth, because of the impact that changes would have on all BData B connections on this trunk.

If the problem persists after you perform the troubleshooting steps, contact Cisco Systems Technical Support:

- Phone: (800) 553−24HR or (408) 526−7209
- Website: Technical Support − Cisco Systems
- E−mail: tac@cisco.com

Related Information

- **IGX 8400 NTM Trunk Error Definitions**
- **How to Distinguish Between Different IGX NTM Models**
- **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**
- **Downloads − WAN Switching Software (registered customers only)**
- **Technical Support − Cisco Systems**

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