

BTM P-bit Parity Errors

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Introduction

Prerequisites

- Requirements

- Components Used

- Conventions

Error Definition

Error Example

Troubleshooting

Related Information

Introduction

This document discusses the Broadband Trunk Module (BTM) parity bit (P-bit) error and provides steps to troubleshoot this error message.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

The information in this applies to the Cisco IGX" BTM with a T3 interface card.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

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

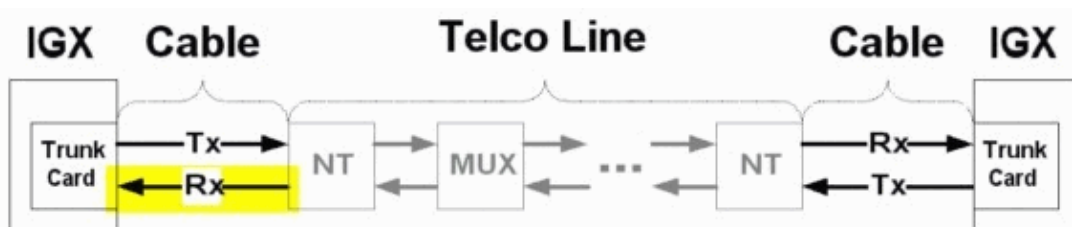
Error Definition

The `P-bit Parity Errs` counter indicates that in-service bit errors have been received during transmission. There are two P-bits that contain parity information in the digital signal level 3 (DS3) frame. The P-bits are located in the first bit position in block 1 of subframes 3 and 4. The DS3 source computes parity over all DS3 information bits after the first X-bit in a DS3 frame. The computed parity information is inserted in the two P-bits of the subsequent frame. The value of both P-bits is always the same. Both P-bits are set to 1, if the previous DS3 frame contained an odd number of ones; both P-bits are set to 0, if the previous DS3 frame contained an even number of ones. Because P-bits are recomputed by each facility section of the DS3 path, they do not provide a way to monitor the path from end-to-end.

Error Example

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

P-bit Parity Errs



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

Troubleshooting

The troubleshooting activities in this section are intrusive. Perform these steps in a maintenance window only in these situations:

- user traffic is affected
- the **dsprks** command output indicates that an error condition still persists, such as when the trunk is not in `Clear-OK` status

Both ends of the trunk must be active when you troubleshoot.

1. Issue the **dsprks** command to verify that the trunk is active. If the trunk number is not displayed in the **dsprks** command output, then the trunk is not active. To activate a trunk, issue the **uptrk** command.
2. Check cabling between the BTM and the next device upstream. Typically, the next device upstream is the local Network Termination (NT).
 - a. Leave the local cabling connected to the BTM interface card, but remove it from the NT.
 - b. With the appropriate BNC connector, connect the transmit (Tx) connector to the receive (Rx) connector of the open cable, to loop it back to the local BTM interface card. Alternatively, place the local NT into the metallic loop toward the local trunk module of the Customer Premises Equipment (CPE). In this example, the CPE is the Cisco IGX BTM interface card.
 - c. If the trunk status in the **dsprks** command output changes to `Clear-OK` and the **dsprkerrs** command no longer shows incremental errors, then the cable and the local trunk module are working properly.
 - ◇ Monitor the output of the **dsprkerrs** command for a few minutes before you proceed to Step 3.
 - ◇ If the trunk status does not change to `Clear-OK` or if the **dsprkerrs** command continues to show incremental errors, then repeat Step 2.
3. Place a loopback cable onto the connectors at the interface card of the BTM, to check the local hardware. If the trunk status in the output of the **dsprks** command changes to `Clear-OK` and the **dsprkerrs** command output no longer shows incremental errors, then the BTM and interface card are working properly.

- a. Wait at least ten seconds longer than the timer setting in the **cnftrkparm** command to verify the trunk status change.
 - b. Replace the cabling and verify whether the **dsptkerrs** command output no longer shows incremental errors.
4. Check the local NT. If the NT is the Telco property, ask the Telco to test it.

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

- **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**
- **Software Center – WAN Switching Software**
- **Technical Support – Cisco Systems**

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