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Introduction

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Impedance Control

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Related Information

Introduction

This document briefly explains the importance of proper impedance control within the backplane of the MGX 8850 and MGX 8250 and how the backplane provides that control.

Prerequisites

Requirements

Readers of this document should have knowledge of these topics:

- MGX 8850
- MGX 8250

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.

Impedance Control

On the MGX 8850 and MGX 8250, the DC return and the chassis form a common connection in the backplane, minimizing the impedance between the backplane and the chassis and frame ground. This helps prevent DC power transients from causing errors in card signals that are distributed through the backplane. DC power transients, often from lightning and commercial power line noise, are sometimes conducted into the backplane via the DC power distribution.

The power uses common mode filtering to prevent most of these transients from reaching the backplane. However, the differential signals are approximately 1 V peak-to-peak and can be upset without sufficient impedance control within the backplane. For this reason, a connection between frame ground and logic ground at the backplane has always been in the design of the BPX, IGX, MGX 8220, and MGX 8850.

From a safety standpoint, the only thing that has to be provided is an earth safety conductor (Protective Earth Green Yellow) properly sized to carry the full load current if the battery return path fails. Half of the return current returns through the safety path; the other half returns through the return path, in accordance with standard safety requirements. In accordance with current practice, the chassis must be grounded before you apply power to the device.

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NetPro Discussion Forums – Featured Conversations for WAN Switching
Network Infrastructure: WAN Routing and Switching

Related Information

- **International Telecommunications Document K.27 under Meshed Bonding Networks**
- **Bellcore 1089, Section 9, Grounding and Bonding**
- **Cisco WAN Switching Solutions – Cisco Documentation**
- **Guide to New Names and Colors for WAN Switching Products**
- **Downloads – WAN Switching Software**
- **Technical Support – Cisco Systems**

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Updated: Sep 22, 2005

Document ID: 10761
