Intel® NetStructure™ ZT 5085

12U Redundant Host Packet Switched Platform

Intel in Communications

Product Overview

This packet switched platform features a PICMG* 2.16-compatible midplane supporting redundant-host architecture for I/O-intensive applications. It is one of several modular telecom building blocks from Intel, providing OEM equipment designers with a carrier-grade, standards-based, high-availability computing platform for demanding mission-critical applications.

The ZT 5085 CompactPCI* platform supports five-nines (99.999%) availability with built-in redundancy for active system components including system master CPU boards, Ethernet switches, chassis management modules, power supplies and fan trays. Redundant chassis management modules enable customers to manage multiple SBCs and conduct chassis diagnostics remotely for enhanced system reliability. Ethernet signals are routed across the midplane without the use of cables, saving time in set-up, maintenance and repair, and minimizing the thermal challenges of traditional cabling methods.

The ZT 5085 platform is designed to interoperate with all members of the Intel® NetStructure™ family of packet switched products, and with third-party boards meeting the PICMG 2.16 specifications.

Product Highlights

High Capacity

- 12U, 19-inch rack-mount enclosure
- 21 slots (18 node slots, two fabric slots, and two 3U chassis management slots)
- Four hot-swappable redundant-host slots for active/active or active/standby control-plane operation
- Twelve 64-bit peripheral slots with H.110 telephony bus and rear-panel I/O
- Up to 50W per node slot and 80W per fabric slot power and cooling
- Designed for NEBS Level 3 and ETSI installations

High Availability

- Five-nines availability
- Redundant, hot-swappable modules for fault recovery
  - Redundant-host system masters (optional)
  - Two PICMG 2.16-compliant 10/100/1000 fabric slots
  - Two IPMI-based chassis management modules (CMMs)
  - N+1 cooling architecture
  - N+N load-sharing 250W AC or DC power supplies
- Redundant power input (front- or rear-panel cabling)

Highly Flexible

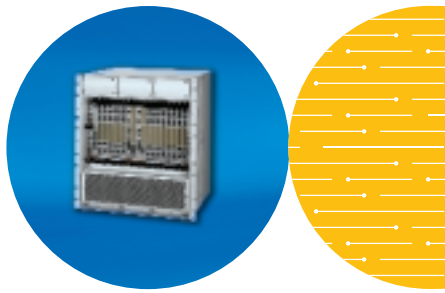
- Multiple midplane configuration options
- Two PCI bus segments with H.110 support
- 21 rear-panel I/O slots (18 node slots, two fabric slots, and two 3U CMM slots)

Highly Manageable

- IPMI-based, PICMG 2.9-compliant redundant chassis management modules
- Unique star topology for increased reliability and security

Highly Serviceable

- All Field-Replaceable Units (FRUs) serviceable from the front (except rear-panel transition boards)



Midplane Configuration and Details

The ZT 5085 platform is flexible and can accommodate multiple configurations. It can be configured as two independent PCI bus segments, each with up to two dedicated system masters. Use of the ZT 5524 System Master Processor Board with the ZT 4901A I/O Mezzanine Expansion Card allows bridging from one PCI segment to the other.

The ZT 5085 also supports redundant-host architecture, providing fault tolerance at the system master level. Two system masters can control the twelve peripheral slots on PCI segments one and two in both active/active and active/standby modes. For this configuration, two pairs of ZT 5524/ZT 4901A boards are required (the first mated pair fits in slots 9-10 and the second fits slots 11-12, see Figure 1).

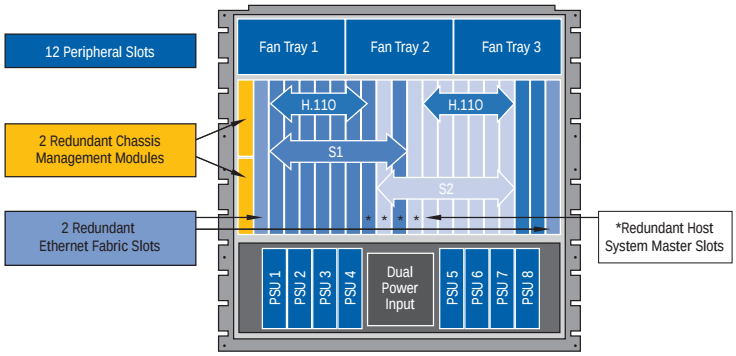


Figure 1: Component layout for ZT 5085 platform

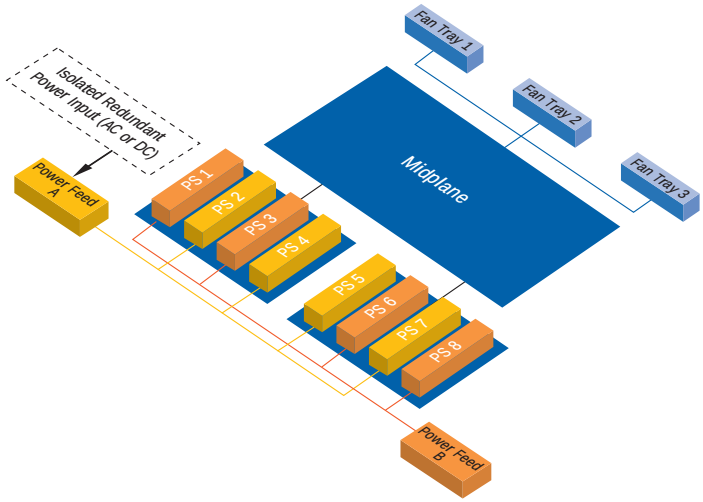


Figure 2: The ZT 5085 platform redundant power-input architecture

In both these configurations the 12 peripheral slots support one single H.110 bus spanning slots three through eight and thirteen through eighteen.

All slots support IEEE 1101.11-style, 80mm-deep transition cards in the rear-panel I/O section directly behind the midplane. Each node and fabric slot may be independently configured for 3.3V or 5V VI/O operation.

Chassis Management Module

The ZT 5085 includes two redundant Intel® NetStructure™ ZT 7102 chassis management modules (CMMs) operating in active/standby mode. The ZT 7102 is the central management component for all Intel® NetStructure™ PICMG 2.16-compliant platforms. It uses standards-based interfaces, allowing management of third-party IPMI-based products within a NetStructure platform. It communicates with components in the ZT 5085 via point-to-point IPMB busses in a unique star topology to achieve comprehensive, highly available management.

Redundant Power Subsystems

The ZT 5085 supports an N+N redundant, scalable power solution with up to eight standard 3U x 8HP power supplies. The power supplies are divided into two separate power subsystems, each housing four power supplies and receiving input power from redundant DC or AC inputs. This is critical in central office locations where two independent power feeds deliver redundant DC input into high-availability systems. The two power subsystems maintain isolation of these inputs (no diode OR'ing), and provide protection so that failure of one power input will not affect the other.

Cooling Architecture

With 250W power supplies, the ZT 5085 platform supports more than 40W per slot or, when scaled to 350W power supplies, powers and cools up to 50W per node slot and 80W per fabric slot. The platform houses three hot-swappable fan trays, serviceable from the front. Each tray includes three blowers, and spans the distance from front to back of the chassis. The front blower cools the front card cage area, and the rear blower cools the power supplies and rear of the card cage. The middle blower cools both areas, providing N+1 redundant cooling for the entire chassis (see Figure 3).

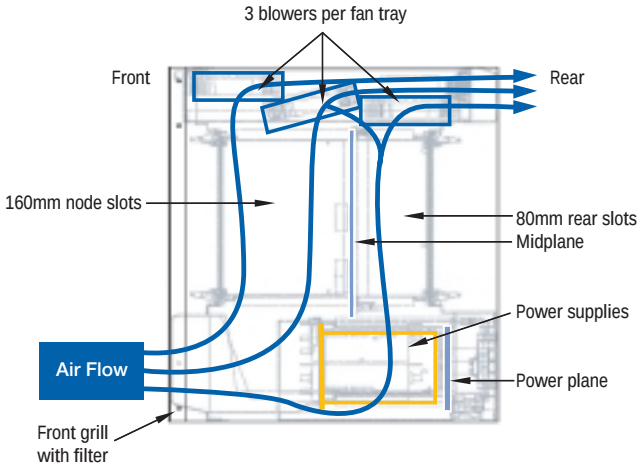


Figure 3: Cross section/side view of the ZT 5085 platform

Specifications

The most current product specifications and order options are posted on the Web version of this product brief (developer.intel.com/design/network/products/cbp/linecard.htm).

Specifications - The ZT 5085 platform is compliant with the following specifications:

- CompactPCI* Core Specification, PICMG* 2.0 R2.1
- CompactPCI Hot Swap Specification, PICMG 2.1 R2.0
- CompactPCI System Management Specification, PICMG 2.9 R1.0
- CompactPCI Power Interface Specification, PICMG 2.11 R1.0
- CompactPCI Packet Switching Backplane Specification, PICMG 2.16 R1.0
- IPMI Specification, Version 1.5
- Standard CompactPCI Keying

Power

Input: 100-230 VAC (50-60Hz) or -36 to -60 VDC	Output Voltage	Output Current
▪ Output: Assumes that 8 power supplies are installed, operating in the 4+4 configuration. The total combined output from 3.3V and 5V not to exceed 160A total.	+5V +3.3V +12V -12V	160A 160A 22A 6A

Physical

▪ Height:	12U, 21" (533mm)
▪ Width:	17.2" (436mm) without rack-mounted flanges. Rack-mount flanges allow mounting in 19-inch racks.
▪ Depth:	17" (431mm)
▪ Weight:	97.5 lbs. (44.2kg)

Regulatory Compliance Pending

▪ Safety	UL/cUL 60950 Safety for Information Technology Equipment E179737 EN/IEC 60950 Safety for Information Technology Equipment CB Report Scheme CB Certificate and Report
▪ Emissions Test Regulations	FCC, CFR 47, Part 15, Class B EN 55022 CISPR 22 GR-1089-CORE Sections 2 and 3 EN 55022 Class B Radiated EN 55022 Power Line Conducted Emissions EN 61000-3-2 Power Line Harmonic Emissions EN 61000-3-3 Power Line Fluctuation and Flicker EN 61000 4-2 Electro-Static Discharge (ESD) EN 61000 4-3 Radiated Susceptibility EN 61000 4-4 Electrical Fast Transient Burst EN 61000 4-5 Power Line Surge EN 61000 4-6 Frequency Magnetic Fields EN 61000 4-11 Voltage Dips, Variations, & Short Interruptions

Ordering Information

The Intel® NetStructure™ ZT 5085 12U Redundant Host Packet Switched Platform includes the enclosure, PICMG 2.16-compliant midplane, eight power supplies, two chassis management modules, and three fan trays.

ZT 5085AC: Includes AC power input panel

ZT 5085DC: Includes DC power input panel

The ZT 5085 is designed to interoperate with the following Intel NetStructure building blocks (please see individual product briefs for details):

Processor and I/O Boards

ZT 5504B-1A: 1GHz Intel® Pentium® III processor – Low Power, 512 MB ECC SDRAM, EIDE hard drive, and SVGA

ZT 5504B-1B: 1GHz Intel Pentium III processor – Low Power, 1 GB ECC SDRAM, EIDE hard drive, and SVGA

ZT 5504B-1C: 1GHz Intel Pentium III processor – Low Power, 1 GB ECC SDRAM, EIDE hard drive, SVGA, and CD-ROM mezzanine card

ZT 5524A-1A: Dual 933MHz Intel Pentium III processors – Low Power, SDRAM DIMM socket, single slot

ZT 5524A-1B: Single 933MHz Intel Pentium III processor – Low Power, SDRAM DIMM socket, single slot

ZT 4807: Rear-Panel Transition Board

ZT 4901A: I/O Mezzanine Expansion Card

Ethernet Switch

ZT 8101: 10/100 24-port Ethernet managed Layer 2/3 Switch with 2Gbps uplinks

ZT 8102: 16 port Layer 2/3 Gigabit Ethernet Switch

ZT 8102HA: 16 port Layer 2/3 Gigabit Ethernet Switch with high availability management software

Management

ZT 7102: IPMI-based chassis management module

Power Supplies

ZT 6303: 250W AC power supply

ZT 6313: 250W DC power supply

Fan Tray

ZT 5061: Fan tray with blowers

Intel Access

Developer's Site:	developer.intel.com
Networking and Communications Building Blocks:	developer.intel.com/design/network
Other Intel Support:	Intel Literature Center developer.intel.com/design/litcentr/ (800) 548-4725 7 a.m. to 7 p.m. CST (U.S. and Canada) International locations please contact your local sales office.
General Information Hotline:	(800) 628-8686 or (916) 356-3104 5 a.m. to 5 p.m. PST

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