

TELECOM

Designing application server blades – Industrial computing solutions for guaranteed availability

By Johni Chan

What is an ideal blade server system?

Industry requirements

A high-availability system should have the following characteristics:

- **Simplicity.** Open architecture and compliance with Federal and Telcordia generic requirements and design quality standards (Telcordia, ITU-T, UL/CSA, NEBS, etc.)
- **Density.** Highest density with smallest form factor
- **Performance.** Maximize the processor utilization and bus speed
- **Reliability.** Lowest MTBF without any single point of failure
- **Serviceability.** Lowest MTTR and ease of service and support

- **Maintainability.** Ease of use and hardware and software product upgrades
- **Scalability.** Support system growth and increasing volumes of traffic
- **Time-to-market.** Quicker
- **Total cost of ownership.** Lower

Figure 1 illustrates an ideal HA blade server system.

A comprehensive design of the overall application-ready industrial computing platform through the use of a from-the-ground-up approach, from concept to commercialization, is a fundamentally important aspect of creating a robust high-performance and high-availability computing system capable of operating across

a wide dynamic range of harsh and unfor-giving environments.

I-Bus Continuum HA solutions

The I-Bus Continuum HA family includes system platforms, boards, system management, and power enabling technologies for computing (see cover for photos of the IBC 0818D, IBC 2801, IBC 2802, IBC 2703, and IBC 2500).

IBC 0818D

The I-Bus Continuum HA family introduces IBC 0818D, a 16 blade system with dual 6U/4HP switch fabric slots. A dual star topology packet, switched backplane compliant to PICMG 2.16 and PICMG 2.9 standards with N+1 redundant -48VDC or 90-250VAC power subsystem

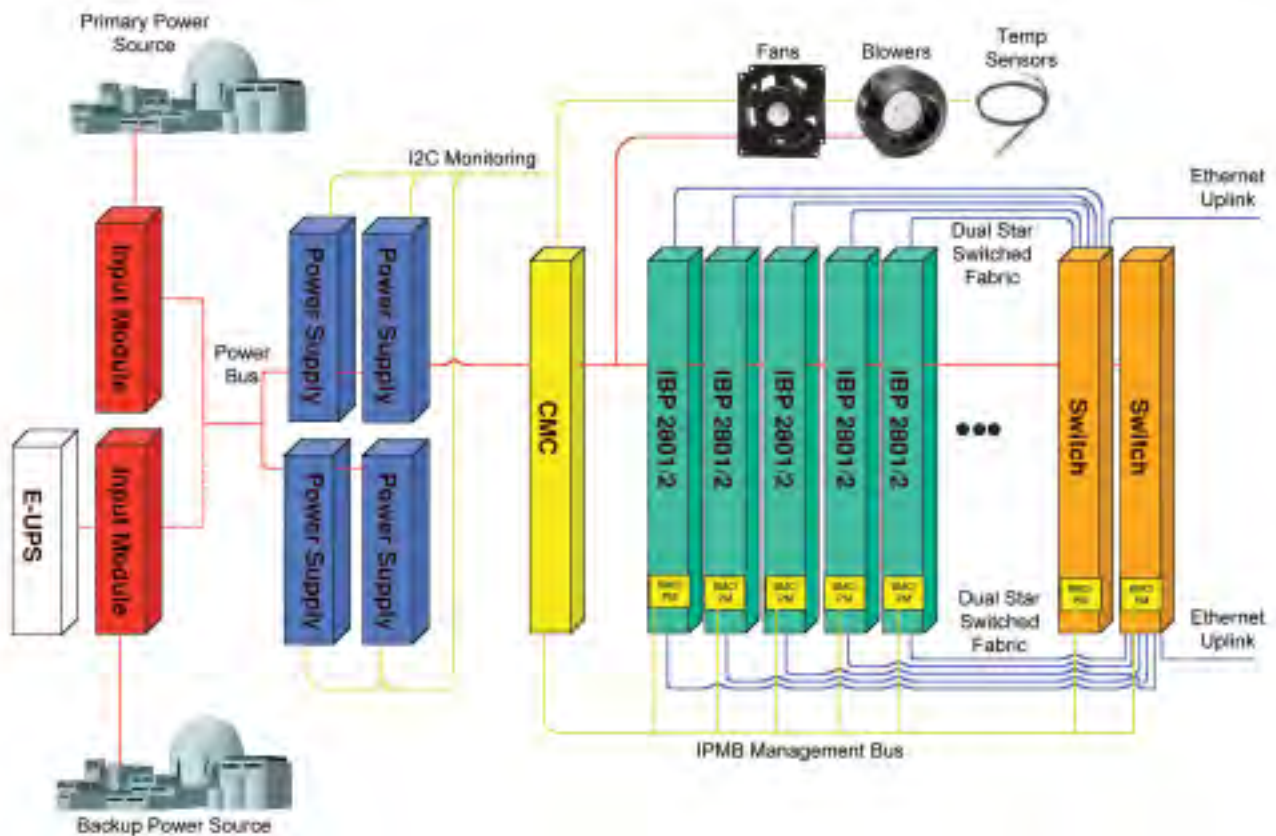


Figure 1

together with a patented dual isolated hot-swap input modules clearly provide a best of class HA solution. The I-Bus Continuum HA family features a FailSafe Opticool thermal management using the I-Bus patented hot-swap redundant "push-mix-pull" cooling architecture. The IBC 0818D also has an optional PICMG 2.9 compliant system management module with SNMP agent support, which may be integrated in the rear to maximize the number of available I/O slots.

IBC 2801

The I-Bus Continuum HA family also introduces the IBC 2801 blade server fully compatible to cPSB PICMG 2.16 to support switch fabric backplane architecture, PICMG 2.1 full hot-swap, and PICMG 2.9 full IPMI system management. The IBC 2801 blade is a powerful, scalable, open architecture building block with dual low voltage Intel PIII processors, operating at 800/933 MHz and up to 2 Gbytes of DDR SDRAM as well as 256+ Mbytes of CompactFlash or 1 Gbyte Microdrive and a 20 Gbyte IDE hard drive on board and/or on the IBC 2703 rear I/O transition module. Additional features include Ultra 160 SCSI with rear I/O, dual 10/100Base-TX Ethernet, 32 bit/33 MHz PMC expansion and on-board AGP Video. The I-Bus 2801 also supports a full set of standard PC peripherals including Ultra ATA100, 1.44 Mbyte floppy, USB, RS-232 serial ports and parallel port, mouse, and keyboard.

IBC 2802

The IBC 2802 blade server is identical to the IBC 2801 features set except for the additional dual Gigabit Ethernet support instead of SCSI.

IBC 2703

The IBC 2703 is a 6U CompactPCI Rear I/O transition module designed to support the rear panel I/O for both the IBC 2801 and IBC 2802 CompactPCI server blades. The IBC 2703 occupies a single 4HP x 80mm rear I/O slot and is designed to support the most common rear panel functions.

IBC 2500

The IBC 2500 Chassis Management Module (CMC) is a rear accessible 6U x 4HP x 80mm CompactPCI rear I/O board which allows the IBC 0818D platform to maximize the number of available I/O slots. The CMC features 6x I2C channels and dry contact relay outputs, it communicates with the IBC 2501, I-Bus Baseboard Management Controller/Peripheral Management (BMC/PM) mezzanine mod-

ule on each IBC 2801/2802 server blade. The IBC 2500 (CMC), together with the IBC 2501 (BMC/PM), allows the chassis to be managed remotely with SNMP agent by system management software application.



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