

NextIO and IBM BladeCenter – delivering high density PCI Express capabilities for the Telecom Service Providers



Highlights

- ***NextIO ExpressConnect family provides high-density PCI Express connectivity options for the IBM BladeCenter family***
- ***NextIO ExpressConnect can be deployed as an I/O Consolidation Appliance for the rack or as a high-speed switch module for the IBM BladeCenter H and HT chassis***
- ***IBM BladeCenter family provides a scalable, open standards based platform for next generation network applications***

Telecom service providers are dealing with a growing number of increasingly demanding applications and services.

One of the most demanding and exciting applications today is that of IPTV. Internet Protocol Television is among the most demanding, high bandwidth applications in the telecommunications arena. However, it is only one reason today's telecom's are faced with the ever-increasing requirements for higher bandwidth — and I/O throughput — that integrated data, voice and video applications demand.

Combatting appliance sprawl

As telecom service providers migrate to an all IP-based, Next-Generation Network (NGN) infrastructure, many are moving away from single-function appliances in order to consolidate disparate functions into a single integrated open platform. Simplifying

and consolidating multiple appliances into an integrated platform helps optimize both performance and network resiliency.

IBM BladeCenter solutions are integrated and modular, designed specifically for the demanding requirements of next generation networks. This provides the reliability, flexibility and performance density necessary to support the IP-based, NGN application infrastructure required for integrating voice, data and multimedia.

NextIO's ExpressConnect™ N1400 -PCM High Speed Switch Module and the N2800-ICA (I/O Consolidation Appliance), use PCI Express (PCIe) as a transport medium, are ideal for dense computing applications on the IBM BladeCenter and require no new software or protocols. The ExpressConnect family of I/O Gateway products provide end-to-end connectivity that enable seamless I/O integration and expansion to all standard industry endpoints (or devices) with industry standard drivers.

NextIO has created an 'open' solution that can deliver high-throughput based on the IBM BladeCenter. NextIO's i/oGateway offerings leverage open, ubiquitous PCIe technology, creating pools of compute and I/O resources,

supporting various I/O technologies. This can significantly lower power and cooling requirements, while delivering greater flexibility, manageability and cost-effectiveness when compared to proprietary alternatives.

By using the NextIO solution on the IBM BladeCenter, telecom service providers can leverage the benefits of a world-class infrastructure built around standards-based, commercial-off-the-shelf (COTS) technology. This can significantly lower capital

expenditures and operating expenses, since significantly simplifying the management of solutions can help optimize human resource deployment.

The NextIO technology can pool and virtualize the I/O resources, thereby removing the traditional tie between I/O and physical devices. This enables the I/O to be dynamically allocated to any server or application — in the precise amount it requires, no more and no less.

NextIO Platform Blade and Chassis connectivity options for the IBM BladeCenter

NextIO N1400-PCM supports up to 14 PCIe x4 cards and is specifically optimized for the IBM BladeCenter H and HT

**NextIO ExpressConnect
N1400-PCM
High Speed Switch Module**



**“In Chassis”
integration**

IBM BladeCenter HT



**NextIO ExpressConnect
N2800-ICA
I/O Consolidation Appliance**



**“In Rack”
integration**

NextIO N2800-ICA supports up to 14 PCIe x8 cards in a 3U rack-mount PCIe expansion chassis

Source: NextIO

“Our telecom customers can take advantage of the best from the worlds of IT and telecom. By using the IBM BladeCenter, our customers can take full advantage of the density of blade solutions with standard PCIe I/O cards.”

*— Chris Pettey
CTO and Co-founder
NextIO*

**IBM BladeCenter family —
the IT and network convergence platform**

The IBM BladeCenter T chassis provides hardware redundancy (power supply, I/O modules, management modules, L2 switching, mid-plane, etc.) thereby reducing potential points of failure in the solution.

The IBM BladeCenter is an advanced blade system which integrates servers, storage and networking into a single chassis — yielding significant simplification, improved density and potential TCO savings. A single family of common server blades, storage, I/O, switches and networking modules are fully supported and interchangeable across the family of BladeCenter chassis. The IBM BladeCenter chassis is designed as the ideal solution for data center deployments. The IBM BladeCenter H is for high performance computing platform, while the IBM BladeCenter T chassis is specifically designed for telecom central office deployments.

The new, IBM BladeCenter HT — a new, telecom optimized version of the BladeCenter H — opens new market opportunities with a new and powerful NGN platform ideally suited for telecom equipment and service providers.

The IBM BladeCenter T and BladeCenter HT deliver rich telecommunications features and functionality, including fault-tolerant capabilities, hot-swappable redundant DC or AC power supplies and cooling, and built-in systems management resources in a 20” deep chassis. The rigorous Network Equipment Building System (NEBS) Level 3 and European Telecommunications Standard Institute (ETSI) outline requirements typical of telecom central office environments in the areas of electromagnetic compatibility, thermal robustness, fire resistance, earthquake and office vibration resistance, transportation and handling durability, acoustics and illumination, and airborne contaminant resistance. The IBM BladeCenter T and BladeCenter HT chassis meet the NEBS Level 3 / ETSI requirements¹.

The NextIO N1400-PCM is a PCI Express High Speed I/O Module that is specifically optimized for the IBM BladeCenter H and HT. It has fourteen x4 PCIe connectors, a PCIe cable subsystem and the NextIO nControl management software suite. The NextIO N2800-ICA is a 3U rack-mount PCIe expansion chassis. It has fourteen configurable x8 PCIe slots for both server connectivity and PCIe add-in card support.



NextIO and IBM: a winning combination

The combination of NextIO and the IBM BladeCenter family delivers the performance, reliability and affordability demanded by mission critical telecommunications applications. The IBM BladeCenter is the ideal platform for the deployment of these services providing a single platform to help reduce operating costs and complexity.

For more information

Learn how IBM Systems can help your company achieve more revenue and reduce your costs, while helping you keep your profitable customers.

Have questions? Contact the IBM Telecommunications team today on how we can help you take advantage of our extensive industry expertise. Please visit us on the web at:

ibm.com/telecom/systems

For more information about NextIO, visit:

NextIO.com

© Copyright IBM Corporation 2008

IBM Systems and Technology Group
Department XVXA
3039 Cornwallis Road
Research Triangle Park, NC
U.S.A., 27709

June 2008
All Rights Reserved.

BladeCenter, IBM, and the IBM logo are trademarks of International Business Machines Corporation in the United States, other countries or both.

Intel and Xeon are trademarks of Intel Corporation in the United States, other countries or both.

Linux is a trademark of Linus Torvalds in the United States, other countries, or both.

Other company product and service names may be trademarks or service marks of others.

References in this publication to IBM products or services do not imply that IBM intends to make them available in all countries in which IBM operates.

IBM hardware products are manufactured from new parts, or new and serviceable used parts. Regardless, our warranty terms apply. For a copy of applicable product warranties, write to: Warranty Information, P.O. Box 12195, RTP, NC 27709, Attn: Dept. JDJA/B203.

The information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

[1] For additional details, please refer to Underwriter's Laboratory (UL) certified NEBS Level 3 / ETSI test report.

♻️ Printed in the United States of America on recycled paper containing 10% recovered post-consumer fiber.