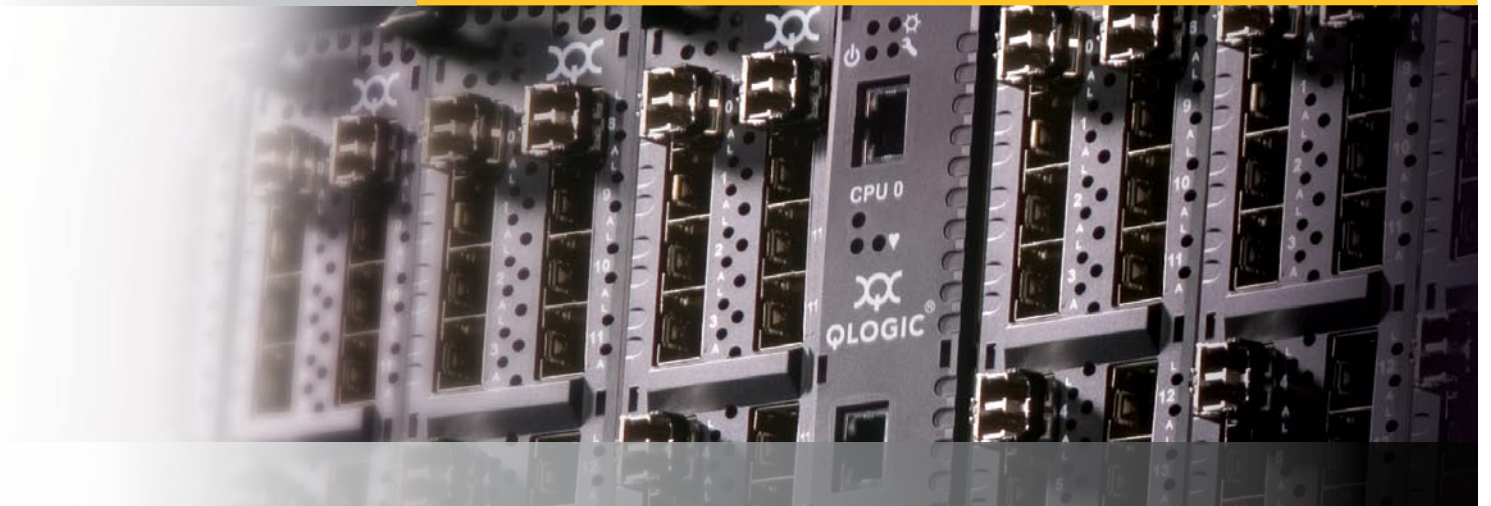*HBAs*
Switches
Routers
Storage Virtualization

End-to-End SAN Infrastructure

QLOGIC

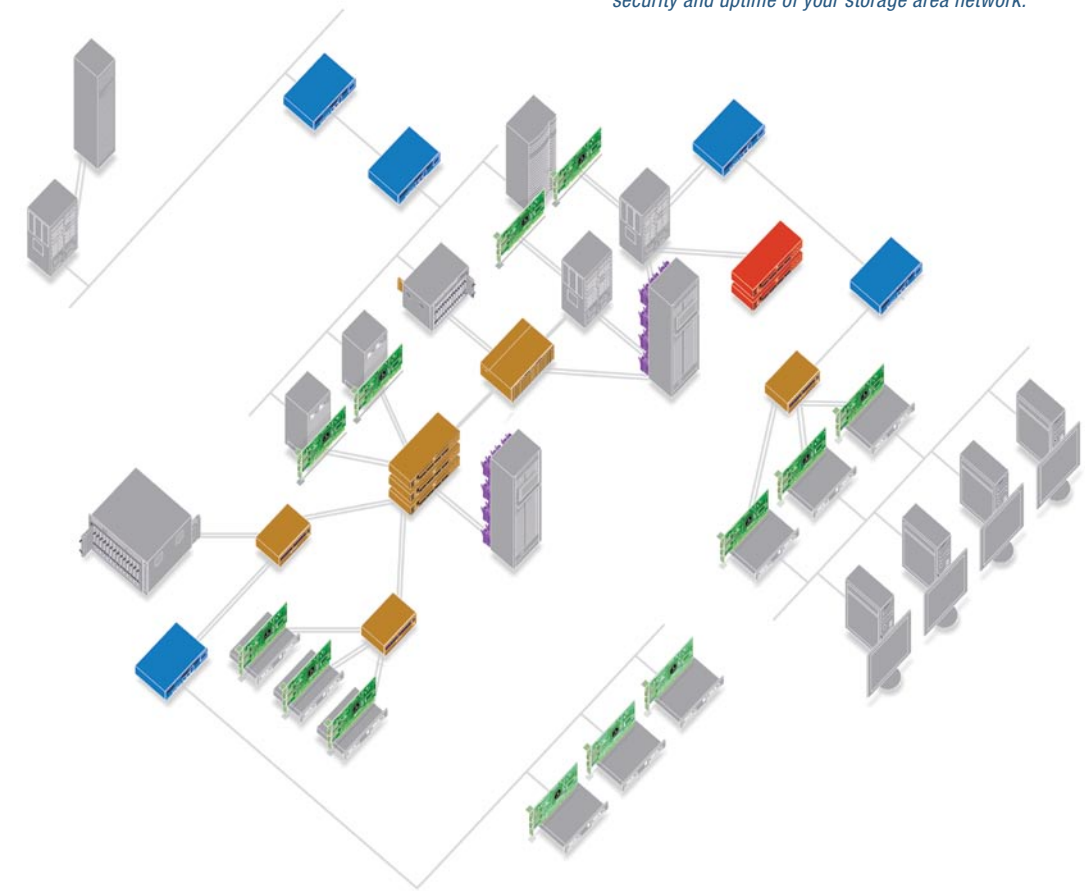## QLogic. The Only Provider of End-to-End SAN Infrastructure.

- A unified network platform for server connectivity, switched fabrics, network services and storage services

- Avoid complex and costly integration projects and single-point management

- Higher performance, pervasive interoperability and simpler installation and management

Building an end-to-end SAN requires you to cope with server connectivity, the switched fabric connecting servers to storage, the network services that run on the SAN and the storage services hosted on the SAN. That's why deploying end-to-end SAN infrastructure from a single vendor is the intelligent approach. Only QLogic delivers this end-to-end SAN infrastructure. Only QLogic provides everything you need to install, configure and operate a world-class SAN, from host bus adapters (HBAs) to switches to intelligent storage routers to storage services platforms. Of course, if you enjoy rolling up your sleeves and wading into complex, costly integration projects, then choosing separate SAN switch, HBA and router vendors may be your cup of tea. But if you have better things to do with your time and money, QLogic is for you.
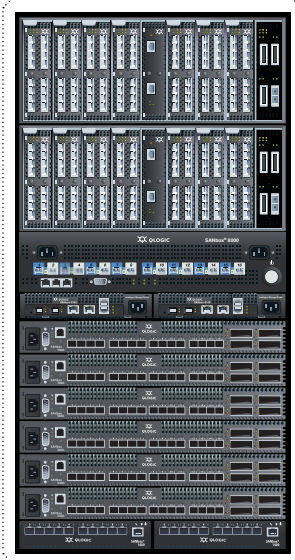
end-to-end

End-to-end SAN infrastructure from QLogic. SANblade® Host Bus Adapters (HBAs) provide server connectivity throughout the SAN. SANbox® switches provide the switched fabric that connects servers to storage. SANbox Intelligent Storage Routers connect low-cost servers to SAN storage and allow you to replicate data across a WAN. The SANbox® Storage Services Platform provides network-based storage virtualization to form a pool of easy-to-manage storage. And QLogic network services provide command and control over performance, security and uptime of your storage area network.

From the heart of the datacenter to the workgroup to the edge of the enterprise — and even in the increasingly sophisticated networks of small-to-medium businesses — QLogic does more for dynamic businesses and organizations. We're first in Fibre Channel stackable switches. We're the unchallenged leader in blade server switches. We're number one in SMB SAN switches. And no one sells more Fibre Channel and iSCSI HBAs than QLogic. Regardless of environment, platform, operating system, server brand or storage vendor, QLogic has the solution that's right for you. At a price that's right for your budget, too.

SANbox®

Switches, Intelligent Storage Routers and Storage Services Platforms

The new look for powerful, easy-to-manage fabrics.

SANbox 9000 Stackable Chassis Switch

SANbox 8000 Storage Services Platform

SANbox 6000 Intelligent Storage Router
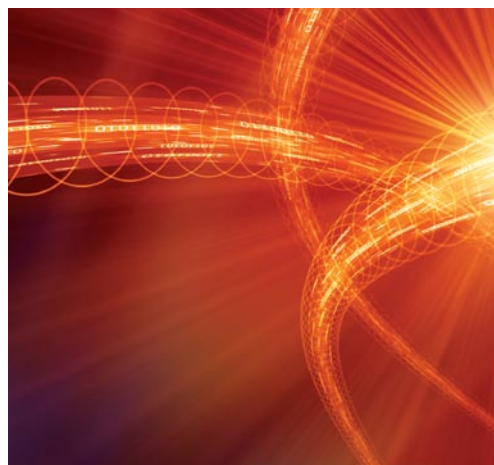
SANbox 5000 Stackable FC Switch
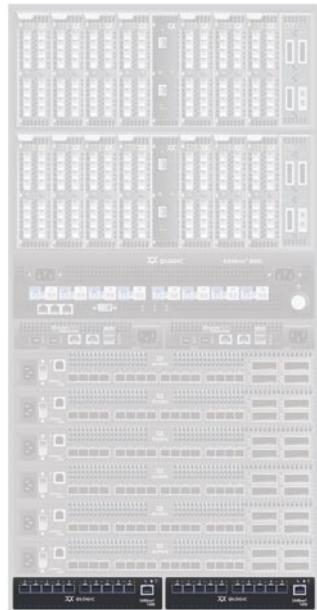
SANbox 1000 Fixed-Port FC Switch

As individual components, QLogic SANbox products provide best-in-class advantages. Working together as a system, they not only look better, they make your SAN perform better, too. That's why the entire QLogic SANbox line won the Windows IT Pro Readers Choice Award. For your switched fabric, you can count on QLogic for exactly the right switch... from the core to the distribution layer to the edge. For server and inter-SAN connectivity, QLogic's Intelligent Storage Routers boost utilization while driving down cost and complexity. And for the holy grail of virtualization, the QLogic Storage Services Platform offers network-based command and control. By virtualizing servers, storage and the network from within the fabric, you greatly simplify management. More importantly, you ensure an open environment that can accommodate multiple vendors, new solutions and future flexibility.

READERS CHOICE 2006

1000 · · · · · · · · · 9000

SANbox® 1000 Series

Fixed-Port Fibre Channel Switch

- Plug-and-play installation
- Lowest cost / entry level
- Smallest footprint possible

They may be small in size, but SANbox 1000 Series switches deliver big-time capabilities. With ten ports and 2Gb or 4Gb throughput, the entry-level SANbox Express 1000 Series allows the smallest business to enjoy the high performance and consolidation benefits of storage networking. Wizards guide you through installation and configuration, so you don't need to hire a SAN expert. Extensive interoperability testing means it works in virtually any environment, including yours. If all that doesn't get you, the price will. These are the most affordable SAN switches you can buy.

1000

Ideal for small businesses who want the performance advantages of storage area networking, but without cost or complexity
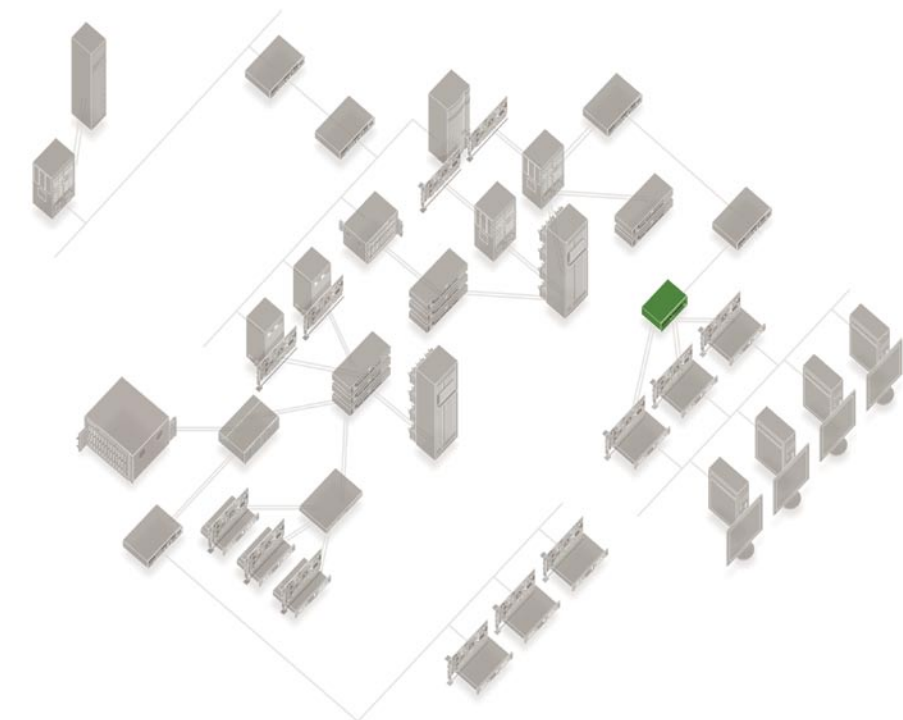
Two units fit side by side in 1U of rack space

Configuration Wizard software tool makes switch installation and fabric scaling simple so you don't have to be a SAN expert

- Auto-sensing, self-configuring ports
- "No-Wait" routing for guaranteed maximum performance independent of data traffic
- Track configuration changes with Fabric Tracker
- Zoning Wizard for device security
- In-band, out-of-band, Telnet and SNMP management access
- Non-Disruptive Code Load and Activation (NDCLA)
- SAN Express™ support
- RSCN Suppression

SANbox® 5000 Series

Fibre Channel Stackable Switch

- Stack and scale to 96 Ports
- Manage stack as a single switch
- Pay-as-you-grow keeps cost low

Get the simplicity, scalability and money-saving advantages of stackable IP switches, but in a SAN switch. Start at just 8 ports, then stack units until you've got a 96-port stack you manage as a single switch. Simple. Configuration Wizards make installation fast and easy. Just point and click. Why pay six figures for a big Director switch you may or may not eventually grow into? Deploy this pay-as-you grow solution that never gets ahead of your network or your budget.

Buy only the ports you need to start with, then add ports and/or stack 6 units to easily scale up to 96 ports
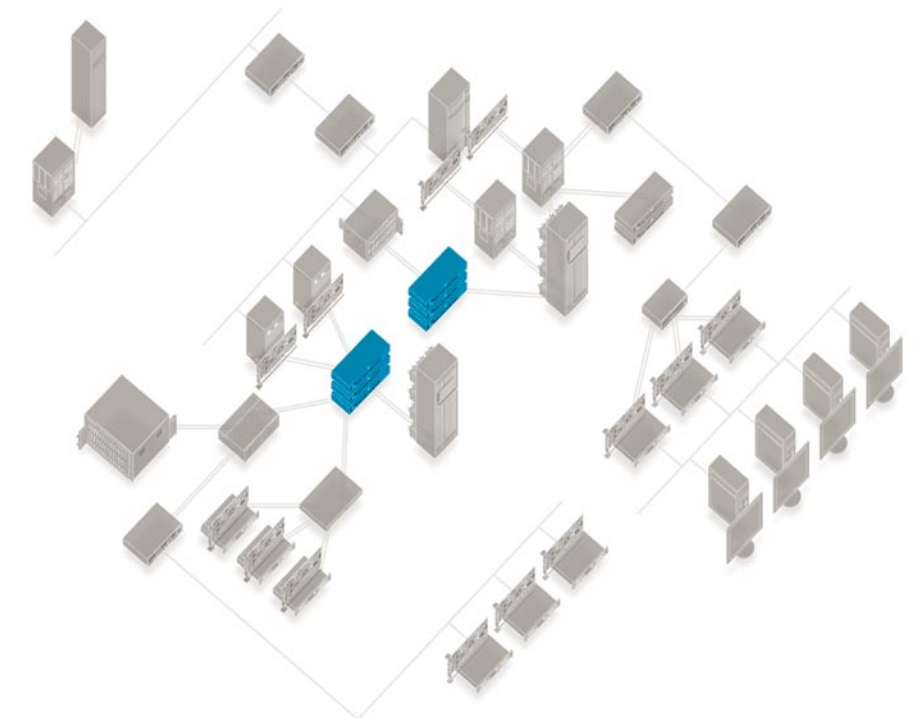
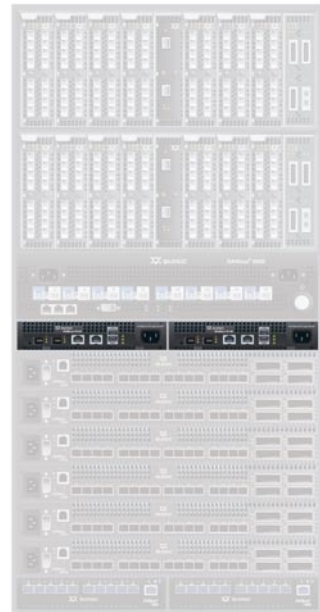Includes Installation and Configuration Wizards for easy installation and administration

High-performance solution—up to 4Gb— that can handle workgroup or enterprise loads with ease

STORAGE AWARDS
THE ★★★★★ II
SANbox 5202 Wins
SAN Product of the Year 2005

READERS CHOICE 2006

5000

- Stack up to 6 units for 96 available user ports
- 8, 12 or 16 auto detecting 4Gb/2Gb/1Gb device ports
- 4 10Gb ISL ports for high-speed stacking links without sacrificing valuable user ports
- 4-port 4Gb/2Gb/1Gb and/or 10Gb field upgrade licenses available
- Non-Disruptive Code Load and Activation (NDCLA)
- Configuration, Zoning and Extended Distance Wizards to simplify switch installation and fabric scaling
- Auto-sensing, self-configuring ports
- Fabric Tracker tool for fabric-wide snapshots and detection of configuration changes
- Non-blocking full-bandwidth architecture
- I/O StreamGuard for RSCN suppression
- "No-Wait" routing – guaranteed maximum performance independent of data traffic
- Industry's lowest latency for maximum performance
- SANsurfer® Switch Manager open management system – designed for seamless operation with higher-level third-party management applications

9

SANbox® 6000 Series

Intelligent Storage Router

- iSCSI to Fibre Channel connectivity
- Designed for storage applications that run across WANs
- Take the next step in consolidation

With the SANbox 6140, you can turn Fibre Channel storage into multi-protocol storage. That means that all those servers on your IP local area network can now access the data stored on your SAN. And for less than $100 per server. Or use the SANbox 6142 to expand, bridge and connect SANs and servers across wide area IP networks. Bottom line? You reduce the cost of SAN connectivity, improve ROI on existing SANs, and capture the benefits of storage area networking for the entire enterprise.

6140
Two units fit side by side in 1U of rack space

6140
Connect up to 512 low-cost servers to Fibre Channel SAN storage

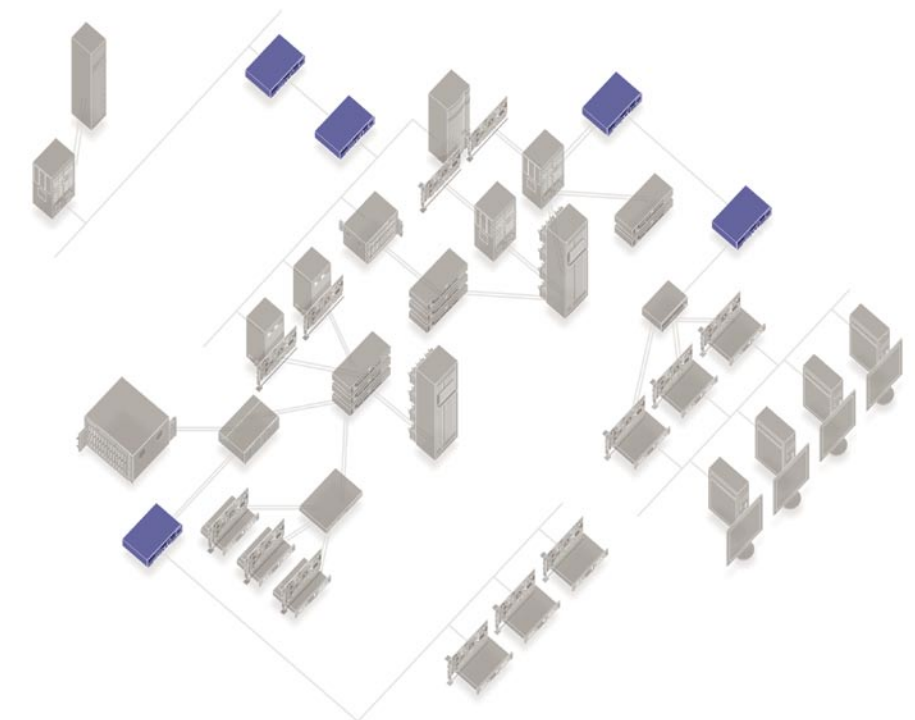**6142**
Ideal for replicating data across a WAN

6000

SANbox 6140

- Easy SAN connectivity for all servers via iSCSI-to-FC routing
- Low cost connectivity under $100 per server
- Manage storage on the SAN, not on multiple servers
- Migrate easily from DAS to SAN
- Turns FC storage into multi-protocol storage

SANbox 6142

- SmartWrite™ - 60% faster write performance
- Wizards simplify installation and configuration
- Support for 62 direct SAN connections over the WAN
- N & NL FC Ports – Bridge multi-vendor SAN Fabrics
- CHAP Security and Authentication

SANbox® 8000 Series

Storage Services Platform

- Vendor-neutral, network-based storage virtualization
- Platform for partner applications
- Simplify management of heterogeneous storage

Many organizations are virtualizing storage to simplify storage services like data migration, mirroring and data replication. The SANbox 8000 Series is a Storage Services Platform that hosts network-based storage applications from partners like StoreAge and Revivio. Add the QLogic SANbox 8000 Series to any Fibre Channel-based SAN and suddenly life gets a lot easier. No matter how many different types of storage or servers you have, the QLogic SANbox 8000 series providesone centralized console to control storage services...all within the fabric.

QLogic's network-based storage virtualization provides a vendor-neutral platform for combining heterogeneous storage into one easy-to-manage pool

Turbo-charge application performance: ReadyPath™ and SPAID technology support over 1,000,000 IOPS

Reduce complexity of managing and protecting data resources by centralizing storage services within the network

- Network-based, vendor-independent storage virtualization for simple, centralized control of storage services like VTL, CDP, D2D, synchronous replication, data migration, mirroring, snapshot, and volume virtualization
- SANbox 8000 SAN Acceleration Services
  - Synchronous Replication Engine
  - Volume Provisioning
  - Data Migration and Compression
  - Space-Optimized Snapshots
  - Journaling
  - SAN Application Hosting (StoreAge, Revivio)
- ReadyPath™ performance with over 1,000,000 IOPs
- 4- /8/16 4Gb FC FlexPorts
- High Availability design: dual, hot swap power and cooling
- Multiple management options

8000

SANbox® 9000 Series

Stackable Chassis Switch

- New class of core switch
- Performance, intelligence and
  availability of a Director
- New stackable architecture, compact
  form factor and lowest cost of entry

Finally, there's a new class of core switch that represents a sane alternative to quarter million dollar Director switches. The SANbox 9000 Series is ideal for cost-sensitive, business-critical, open system environments that require a high-density, high-availability switch platform for their data center core. The SANbox 9000 Series pioneers a number of industry firsts: stackable for simple, cost-effective scalability, 4U chassis for smaller footprint and management tools included at no charge. Best of all, pricing starts at under $100K.

New class of high-density, high-performance, high-availability core switch for business-critical applications
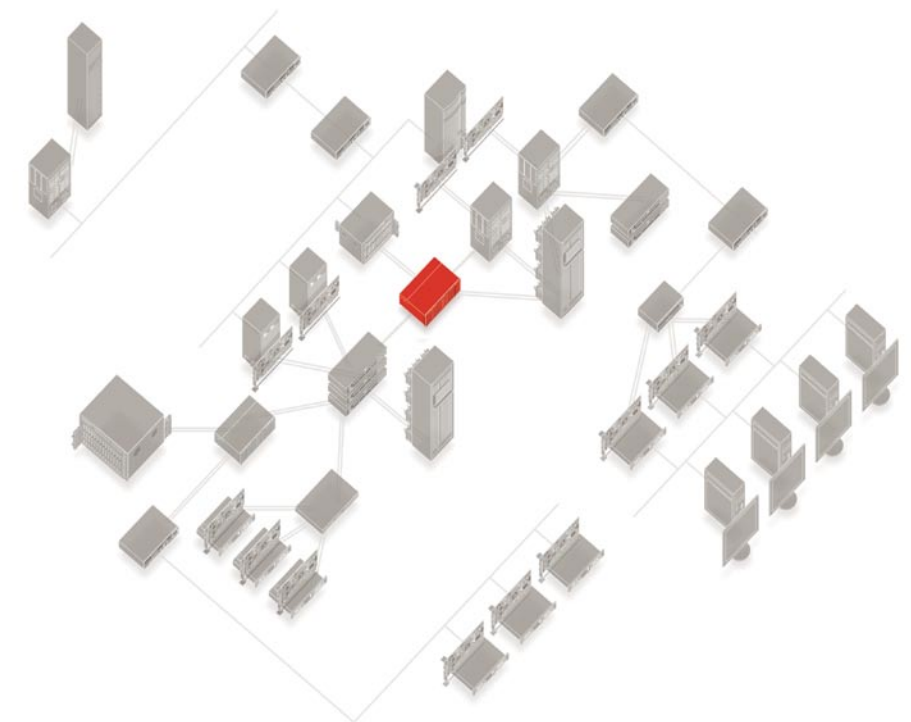
Intelligent storage routing and storage virtualization to pool heterogeneous storage and replicate data across WANs

Industry's first stackable chassis switch for unprecedented, modular scalablity

Designed to the Core™

READERS CHOICE 2006

9000

- Industry's only core switch with a compact, 4U chassis
- HyperStack™ technology brings stackable scalablitity to core switches
- Up to 256 ports in a dual, stacked chassis configuration
- 8 slots for SANbox 9000 blades:
    - 4Gb FC I/O blades for maximum port density
    - 10Gb FC I/O blades for high-performance trunks
    - iSCSI Intelligent Storage Router blades for iSCSI-FC connectivity
    - FCIP Intelligent Storage Router blades for data replication over WANs
    - Storage Services Platform blades for network-based storage virtualization
    - Or any combination that fits your requirements
- Included with every switch is a comprehensive suite of enterprise-class management tools that others charge for
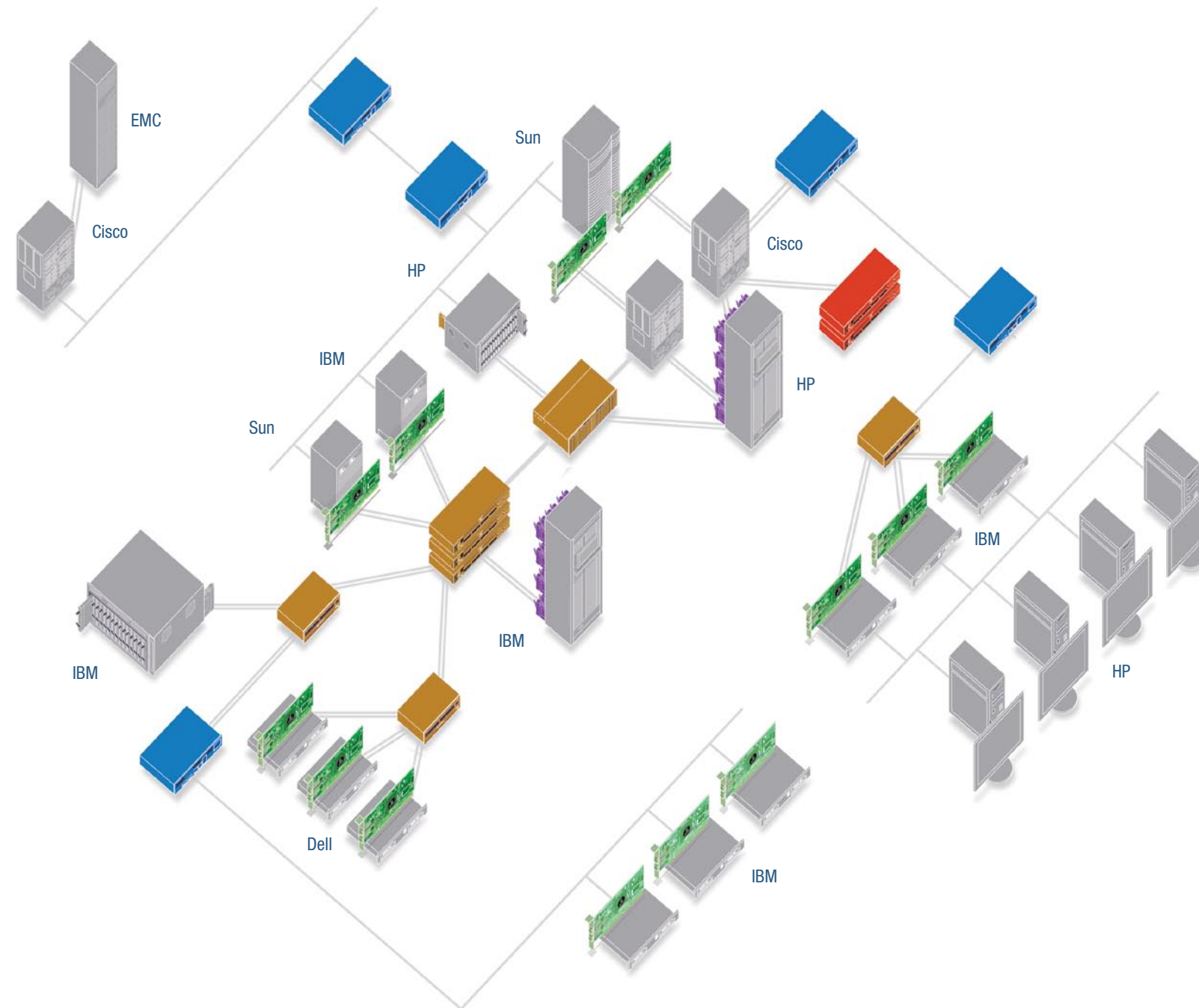
Interoperability.

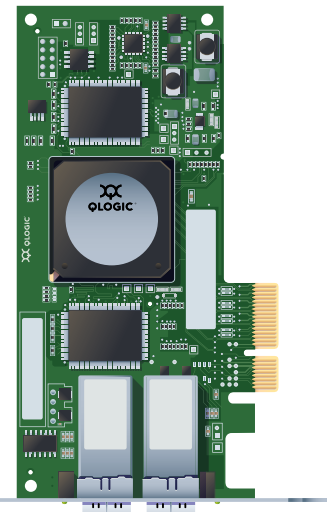## QLogic has more types of SAN solutions validated by more OEMs.

Do you relish complex, time-consuming integration projects that swallow your days, then keep you up nights trying to resolve tricky device driver conflicts? No? Then QLogic is your choice. Other storage area networking vendors build one or two of the components that make up your overall SAN infrastructure. Integrating these disparate elements into a cohesive system can be ticklish. But QLogic provides everything you need to create a world-class SAN. So every component works seamlessly and flawlessly together, right out of the box.

Virtually every storage and network vendor on the face of the planet validates QLogic for their solutions. If you use hardware, software, platforms, OS's and/or systems from the list below, you can be confident QLogic solutions will work flawlessly in your environment:

- ADIC
- Brocade
- Cisco
- Computer Associates
- Dell
- EMC
- Emulex
- HDS
- HP

- IBM
- LSI
- McData
- Microsoft
- Quantum
- StorageTek
- Sun
- VERITAS
- And many others

EMC

Cisco

Sun

HP

Cisco

IBM

HP

Sun

IBM

IBM

IBM

Dell

IBM

HP

interop

SANblade 4000 Series
1Gb iSCSI Host Bus Adapter

SANblade 2400 Series
4Gb Fibre Channel Host Bus Adapter

SANblade 2300 Series
2Gb Fibre Channel Host Bus Adapter

When it comes to best-in-class interoperability, performance, reliability and ease-of use, the top storage area networking companies in the world rely on QLogic host bus adapters. If they trust QLogic to power their SAN solutions, shouldn't you? QLogic HBAs consistently win top honors and industry awards year after year. They comprise the broadest product portfolio, supporting every major platform, OS, protocol and network environment. And only QLogic backs its HBAs with the industry's best warranty: an unprecedented 5 years on select models. Bottom line? Whatever your environment, QLogic offers the best HBA possible for your exact requirements. Specify the HBAs that Dell, EMC, HP, IBM, Sun and other leaders choose to ship all over the world. Specify QLogic.
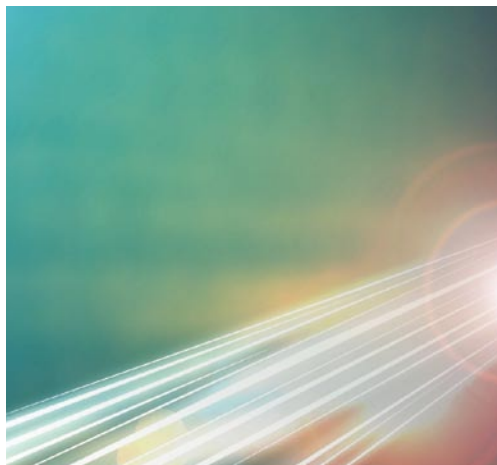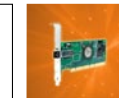
SANblade®

Fibre Channel and iSCSI HBAs

Why settle for anything less than the #1 selling HBAs?
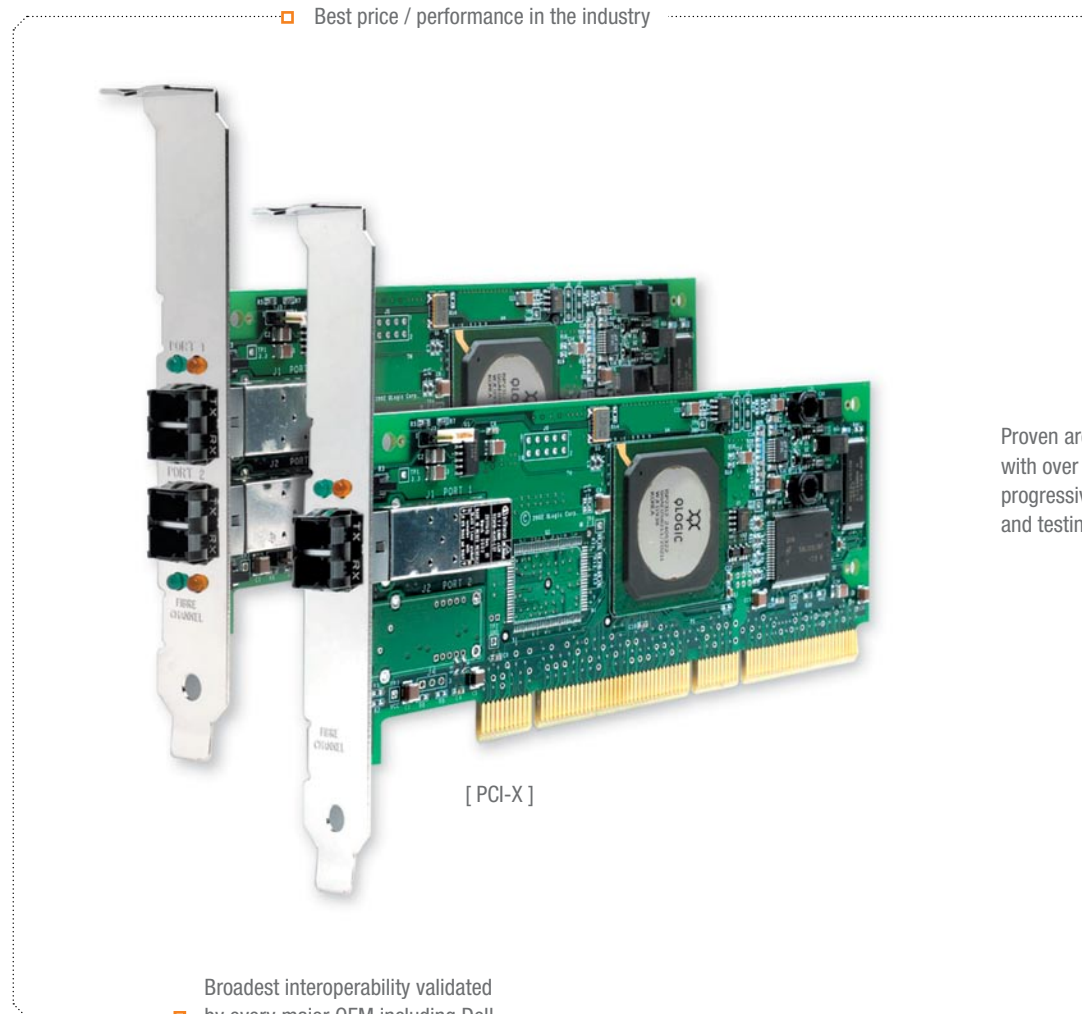
2300 · · · · · · · · · · 4000

SANblade® 2300 Series

2Gb Fibre Channel Host Bus Adapter

- Record-breaking performance
- Leading single chip integration
- Supports up to 400 MB/s at full duplex

How did QLogic SANblade 2300 series HBAs get to be so popular? It could be because of their blazing performance. Their industry-leading reliability. The simple installation and configuration with point-and-click Wizards. Or their pervasive interoperability. Or maybe it's because you get all these advantages for the lowest price-per-port. Why not get more from your SAN investment? Specify the #1 selling HBA: QLogic. The choice of every major storage and SAN vendor in the world. (1)

□ Best price / performance in the industry

[PCI-X]

□ Broadest interoperability validated by every major OEM including Dell, EMC, HDS, HP, IBM, and Sun

□ Proven architecture with over 15 years of progressive development and testing
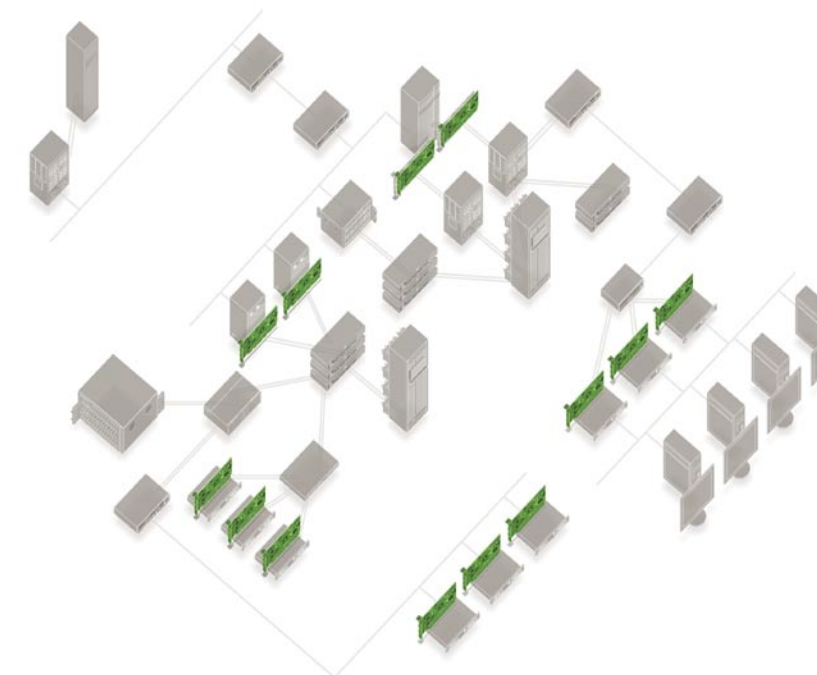
- Autonegotiation of Fibre Channel speed bit rate (1 Gbps or 2 Gbps)
- Automatic topology detection
- Concurrent support for SCSI and IP protocols
- Simultaneous initiator and target mode support
- Easy detection of activities through an LED panel:
  - Power   - Loss of synchronization
  - Online   - Firmware error
  - Signal acquired
- HBA and LUN level failover
- Persistent binding
- LUN masking
- Local and remote management
- Load balancing for optimized performance
- Diagnostics
- Loop back test
- Read/write buffer tests

[cPCI]

[SBus]

SANblade® 2400 Series

4Gb Fibre Channel Host Bus Adapter

- High performance of up to 300,000 IOPS
- Supports virtualization across multiple OS's
- Enhanced reliability

Independent tests prove it: QLogic delivers a better 4Gb HBA. In simulations of real-world Oracle environments, benchmarking with Microsoft Exchange and network tests of Windows SANs, QLogic 4Gb HBAs outperformed the competition in all scenarios. And by significant margins (as much as 246%). What's more, QLogic 4Gb HBAs have the intelligence needed to extend this performance advantage to multiple VSANs, satisfying the high bandwidth requirements of server virtualization, which means no performance penalty.
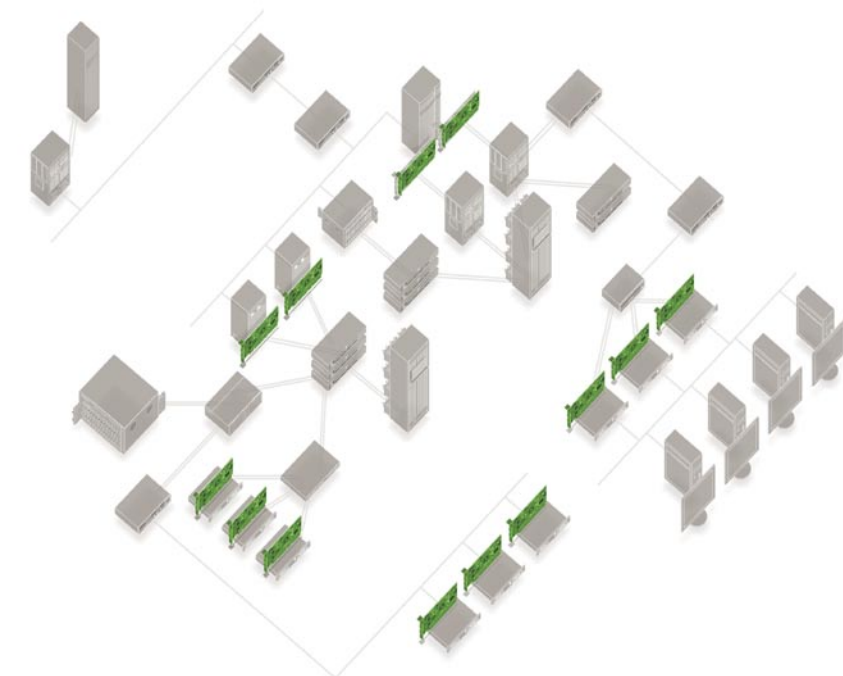
Simple, point-and-click installation and configuration Wizards

Pervasive interoperability with all major OS's and 32/64-bit computing platforms

[PCI Express x4]

Intelligent storage networking features that redefine the enterprise-class HBA, providing increased data protection, advanced frame routing, and enterprise-wide management capabilities

[PCI-X 2.0]

- 4/2/1 Gbps (auto-negotiation)
- Persistent binding
- LUN masking
- 2,048 concurrent logins per port
- HBA and target level failover
- Loopback and read/write
- SCSI initiator, target, and initiator/target modes
- HBA information, topology, maps, statistics, and graphs
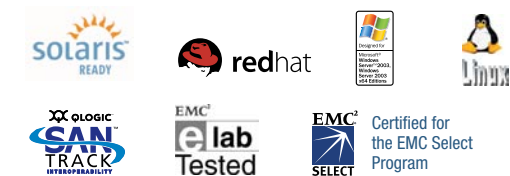- RoHS compliant

2400

SANblade® 4000 Series

1Gb iSCSI Host Bus Adapter

- Complete iSCSI and TCP/IP offload for enhanced performance
- Auto-negotiated 100/1000 Mbps line rate data transfer
- PCI-X 133-MHz backward-compatible

If you're not ready to give up the familiarity of SCSI storage, QLogic iSCSI HBAs are a great way to still bring the performance and consolidation benefits of a SAN to your environment. By offloading the iSCSI and TCP/IP protocol to the HBA, QLogic eliminates the impact on your servers' CPUs. This makes it possible for your iSCSI storage area network to attain the performance standards of direct attach storage (DAS) or a Fibre Channel (FC) SAN, while improving overall server and storage utilization.

The performance and consolidation advantages of SANs without abandoning your SCSI infrastructure

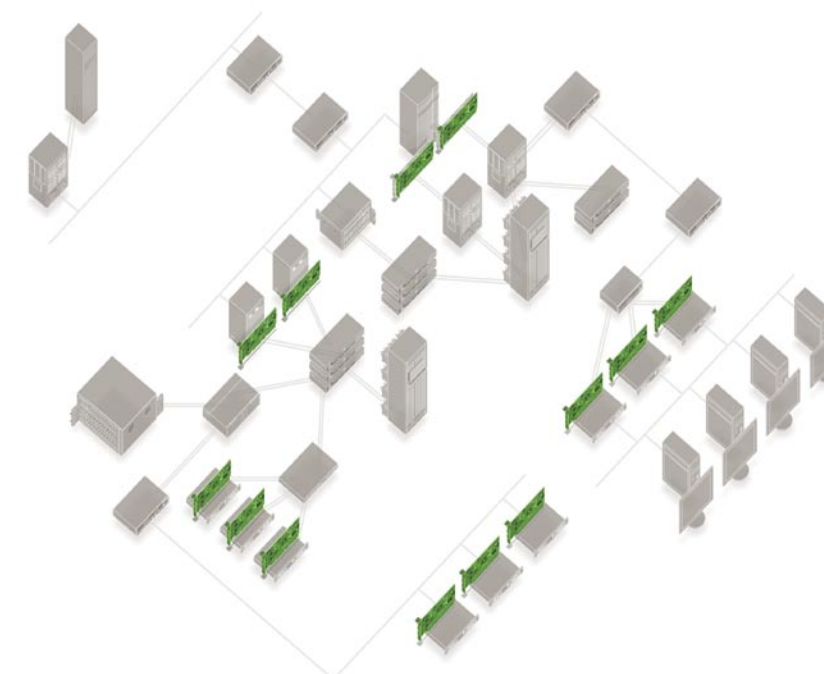Broadest support for all major operating systems, including Windows, Linux and Solaris

[PCI Express x4]

Easy point-and-click installation and configuration wizards take the mystery out of storage networking

[PCI Express x4]

- Networking and storage functionality for iSCSI, network attached storage (NAS), clustering, multimedia, distributed network applications, and web-serving
- Jumbo frames, 802.3x flow control, 802.1p priority service, and 802.1Q VLAN Ethernet networking
- Low-profile PCI form factor
- Universal iSCSI SAN boot for true remote storage boot implementations
- Storage reliability with iSCSI digests, ECC memory, and overlapping data path parity
- JTAG boundary scan, full scan, and memory built-in self-test (BIST)
- Highly integrated, low power design
- Microsoft Windows® management interface (MS WMI) compliant for standards-based management

solaris READY

redhat

Linux

SAN TRACK INTEROPERABILITY

e lab Tested

EMC² SELECT   Certified for the EMC Select Program

4000

QLogic Global Services

Worldwide service/support platform for maximum uptime and business continuity.

- Services and support for the worldwide user community
- Premium global on-site service programs
- Get the most out of your investment in QLogic products

Whether your company is deploying QLogic products in Baltimore, Bombay or Buenos Aires, QLogic Global Services delivers maximum uptime and optimum business continuity. In every global theater, you can speak with a knowledgeable customer support engineer in your time zone and in your language. QLogic Global Services not only delivers peace of mind, but also a variety of world-class training programs to make sure you and your staff get the most out of your investment in our products.

support

■ Support

QLogic is the only storage area networking company that provides access to support engineers with years of experience in HBAs, switches, storage, iSCSI, Fibre Channel storage routers, and storage services technology.

This expert support is available in nine languages during your work day. QLogic's in-region local language support is accessible via telephone, email and from our website, where you can quickly reference contact details for QLogic Global Services support worldwide.

■ Service

Global Services provides five fee-based programs for service levels that best fit your availability requirements and budget parameters:

- Prime Service includes 7x24 call center availability, 4-hour on-site service and advanced hardware replacement.
- Choice Service includes 7x24 call center availability, next business day on-site service and advanced hardware replacement.
- Select Service includes next business day on-site service and advanced hardware replacement.
- Exchange Service includes next business day advanced hardware replacement.
- Preferred Service includes 7x24 call center availability and next business day advanced hardware replacement.

■ Warranty

QLogic Global Services backs every QLogic solution with responsive customer support, which is available 5x8 local time. In addition, you enjoy 7x24 access to our award-winning support web site that includes FAQs, driver and utilities downloads and online service request handling.

■ Training

QLogic Corporation offers the industry's most comprehensive SAN training at our state-of-the-art campuses in Aliso Viejo, California and Eden Prairie, Minnesota. In addition, QLogic offers partner-specific training at regional locations throughout the world. All training courses feature hands-on learning labs incorporating the most current SAN technology powered by QLogic and other vendors, including Apple, Dell, IBM, SUN, Brocade and McData.

More than 60% of the time in courses is devoted to practical lab work. Major topics include SAN concepts, product features and functions, installation, configuration, and practical troubleshooting. Courses culminate in professional certification. Online training is also available in both live and self-paced options. A complete list of our current course offerings is at www.qlogicswitchnet.com/training/training.cfm or contact tech.training@qlogic.com for more information.

QLogic.

End-to-End SAN Infrastructure.