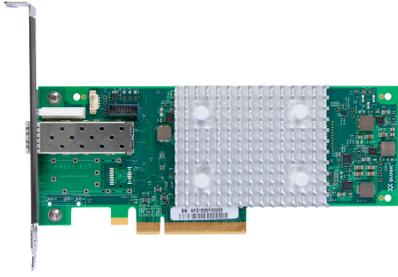# QLogic Adapters Boost SAN Reliability, Server Deployment, and Virtual Performance

QLogic 2690 Series Enhanced 16GFC/ Fibre Channel Adapters

KEY BENEFITS

QLogic® 2690 Series Enhanced 16GFC Adapters from Marvell integrate with Brocade® (16GFC) fabric switches, enabling administrators to quickly diagnose enterprise SAN fabrics, accelerate the deployment of servers and storage, and ensure that virtual workloads run at optimal performance.

- QLogic adapters deliver superior SAN value and performance compared to Emulex® Light-Pulse® LPe16000/16002B Adapters.

- Quickly diagnose large scale SAN fabrics and servers in a single step using Brocade ClearLink™ (D_Port) with a single management interface.

- Deploy servers and storage more efficiently and quickly with fabric assigned provisioning (FA-WWN and F-BLD).

- Ensure that critical virtual machine workloads receive the highest priority for optimized performance.

QLogic adapters from Marvell deliver more value to large scale SANs vs. Emulex LPe16000/16002B adapters from Broadcom

EXECUTIVE SUMMARY

Enterprise organizations rely on their Fibre Channel (FC) storage area network (SAN) for fast, reliable access to critical applications and data. To keep up with growing business demands and exponential data growth, IT administrators may deploy the latest servers, solid-state storage devices, and network components to meet performance and service level agreement objectives.

QLogic Enhanced 16GFC (Fibre Channel) adapters from Marvell include advanced capabilities that are enabled when deployed with supported Brocade Gen 5 switches and systems. By implementing these industry-leading solutions together, administrators can take advantage of enhanced features that improve reliability, accelerate deployment, and increase virtual workload performance.

QLOGIC ADAPTERS BOOST ENTERPRISE SAN PERFORMANCE

Enhanced Reliability and Diagnostics for Large Scale SANs

While adding components to the fabric, administrators typically verify the integrity of the new connections before placing them into a production SAN environment. Ongoing diagnostics occur over time in order to maintain peak network performance, trouble-shoot, and expand the infrastructure.

QLogic's support for Brocade ClearLink diagnostics improves reliability across high-performance, large-scale enterprise fabrics. Using the ClearLink diagnostic port (D_Port), administrators can quickly run a battery of automated diagnostic tests across multiple QLogic 2690 Series Enhanced 16GFC Adapters and fabric components to assess connectivity.

By deploying QLogic 2690 Series Enhanced 16GFC adapters, administrators can leverage advanced capabilities that are not available with Emulex LPe16000/16002B Series Adapters from Broadcom Limited. For example, Marvell's QLogic solution is integrated with the Brocade Fabric OS (FOS) switch management software, enabling administrators to easily run ClearLink (D_Port) in a single step across multiple servers simultaneously via the FOS user interface. As a result, SAN administrators can quickly diagnose large-scale SAN fabrics and enhance overall network reliability. This enables organizations to save a significant number of man-hours per year by eliminating time-consuming manual diagnostic processes across the enterprise environment.

- Eliminate time-consuming, expensive manual processes.
- Simple, single-pane-of-glass management with Marvell's QConvergeConsole® and integration with Brocade Network Advisor.
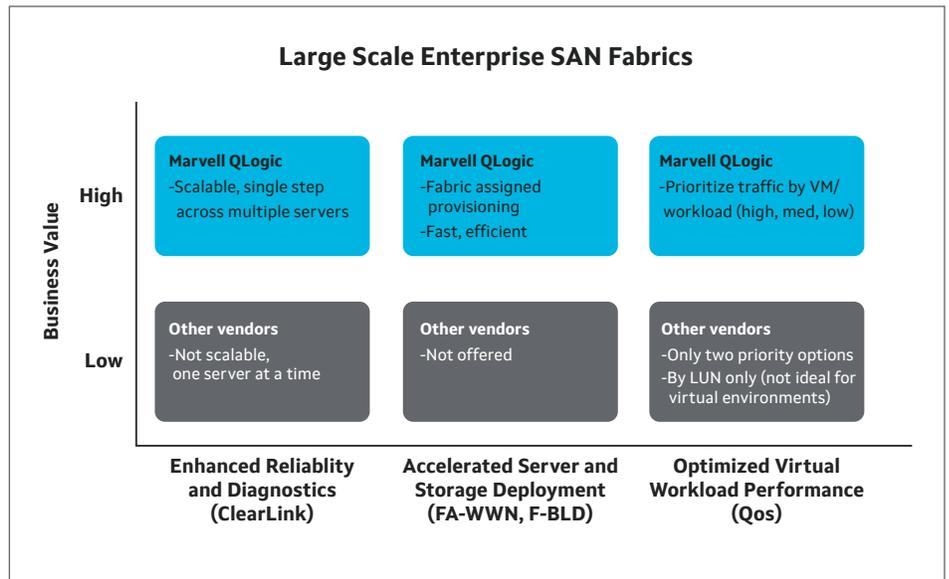
However, organizations that deploy Broadcom's Emulex adapters can only implement ClearLink via the proprietary Emulex management console, since it does not integrate with Brocade FOS. Administrators can only run diagnostics for individual host servers, one at a time. The result is a very slow, tedious process that is difficult to manage and not acceptable for large scale SAN fabrics.

ACCELERATED SERVER AND STORAGE DEPLOYMENT

Marvell's support for fabric pre-provisioning enables administrators to quickly deploy, replace, and move servers and storage across the SAN. By leveraging Brocade's fabric-assigned port world-wide name (FA-WWN) and fabric based boot LUN discovery (F-BLD) capabilities, administrators can complete the creation of zones, LUNs, and other services before the servers arrive on site.

Only QLogic 2690 Series Enhanced 16GFC Fibre Channel Adapters from Marvell provide advanced fabric assigned provisioning to eliminate expensive, time-consuming manual tasks that typically delay deployment. As a result, servers and storage can be quickly deployed, saving time, money, and resources. Integration with Brocade FOS further simplifies management.

However, organizations that deploy Emulex adapters are unable to take advantage of fabric-assigned port world-wide name and fabric-based boot LUN discovery capabilities, since they are not supported. As a result, those organizations must perform time consuming, manual tasks including basic server/SAN setup, fabric zoning, and LUN mapping that often delay deployment. Again, Broadcom's Emulex solution is not acceptable for large scale SAN fabrics.

Large Scale Enterprise SAN Fabrics

Business Value	Enhanced Reliablity and Diagnostics (ClearLink)	Accelerated Server and Storage Deployment (FA-WWN, F-BLD)	Optimized Virtual Workload Performance (Qos)
High	**Marvell QLogic** -Scalable, single step across multiple servers	**Marvell QLogic** -Fabric assigned provisioning -Fast, efficient	**Marvell QLogic** -Prioritize traffic by VM/ workload (high, med, low)
Low	**Other vendors** -Not scalable, one server at a time	**Other vendors** -Not offered	**Other vendors** -Only two priority options -By LUN only (not ideal for virtual environments)

OPTIMIZED PERFORMANCE FOR VIRTUAL WORKLOADS

To meet the needs of high-performance virtual, physical, and cloud environments, SAN administrators seek to reduce or eliminate network bottlenecks. Marvell's QLogic solution can dramatically improve network performance by using industry standard QoS Class-Specific Control (CS_CTL) based frame prioritization, which alleviates network congestion by prioritizing the use of bandwidth from the fabric to the host. When Marvell's QLogic 2690 Series Enhanced 16GFC Adapter is connected to supported Brocade Gen 5 FC switches, traffic is classified as it arrives at the switch (as high, medium, low) and then processed on the basis of configured priorities. Traffic can also be prioritized for delivery or subjected to limited delivery options.

Marvell's QLogic solution also supports N_Port ID Virtualization (NPIV) technology, which allows a single Fibre Channel HBA port to provide multiple virtual ports that can be assigned to individual virtual machines and applications, increasing network scalability and flexibility. Working in conjunction with NPIV, support for QoS (CS_CTL) allows administrators to prioritize storage traffic to meet the needs of critical virtual machines and their workloads. As a result, the QLogic adapter also enables the assigned QoS priority to move with the virtual machines and their workloads across LUNs and servers to meet enterprise service level agreements.

However, organizations that deploy Broadcom's Emulex adapters are unable to obtain the full range of benefits that are enabled by Marvell's QLogic adapter. For example, with Broadcom's Emulex ExpressLane™ QoS (CS_CTL) the functionality is disabled by default and requires a server reboot to enable, which is time consuming. Broadcom's Emulex adapters only offer two levels of traffic priority (normal or ExpressLane) and the priority level can only be applied to specific LUNs. When deploying Emulex adapters, administrators cannot prioritize storage traffic for specific virtual machines and workloads. Instead, they must map individual LUN priorities to virtual machines, which is prone to errors and increases management costs. In addition, with Broadcom's Emulex solution, changing the LUNs to accommodate application growth and increased VM density, could require frequent LUN to priority remapping. A complicated QoS solution from Emulex adapters that does not have the ability to directly map priorities to virtual machines lacks on multiple counts of performance, control, and flexibility as compared to Marvell's QLogic adapters.

And the Emulex ExpressLane implementation is not consistent across environments, since QoS for LUNs exposed via physical and virtual ports are supported in Windows, but in VMware ESXi environments QoS for virtual port LUNs are not supported. However, when deploying QLogic adapters from Marvell, administrators enjoy consistent virtual port QoS management across Windows and VMware environments, along with more granular and flexible performance levels to meet the needs of enterprise workloads.

LEARN MORE

- Enhanced Reliability and Diagnostics for QLogic Enhanced 16Gb/32Gb/64Gb Fibre Channel Adapters
- Automating and Simplifying SAN Provisioning for QLogic Enhanced 16Gb/32Gb/64Gb Fibre Channel Adapters
- Improved Performance and QoS for QLogic Enhanced16Gb/32Gb/64Gb Fibre Channel Adapters

TRUSTED SOLUTIONS

Marvell is a global leader and technology innovator in high-performance server and storage networking connectivity and application acceleration solutions. The company's leadership in QLogic product design and maturity of software stack make it the top choice of leading OEMs, including Cisco®, Dell/EMC, Hitachi Data Systems, HPE®, IBM®, Lenovo®, NetApp®, and Oracle®, as well as channel partners worldwide for their virtualized, converged, and cloud environment solutions.

Learn more about the market leading Marvell's/QLogic solutions on
https://www.marvell.com

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