

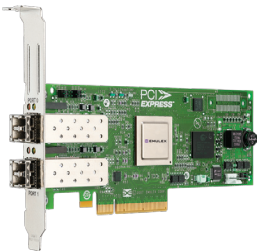


Emulex LPe12002 vs. QLogic QLE2562

At a Glance

Emulex Advantages

- Lower operating temperature, greater reliability
- Best dual-channel performance
- CPU-efficient for consolidation and cost savings
- Fast deployments
- No reboot on firmware upgrades

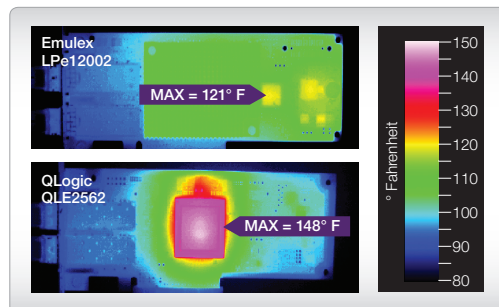


With over 7 million ports installed, Emulex HBAs and Universal Converged Network Adapters (UCNAs) are well-known as the premier connectivity solution for data centers. Superior reliability, interoperability, performance and the most scalable hardware and software architecture in both standard and virtual server deployments are why data centers worldwide choose Emulex.

Emulex Advantages

Operating Temperature, Greater Reliability

The Emulex LPe12002 Host Bus Adapter (HBA) operates 27° F cooler than the QLogic QLE2562 HBA, providing 166% greater adapter reliability and server availability. The figure below shows thermal “hot spots” on the QLogic QLE2562 HBA where higher temperatures were detected. More importantly, the LPe12002’s I/O controller also operates cooler, resulting in greater reliability measured in Mean Time between Failures (MTBF).



LPe12002 operates 27° F cooler than QLE2562.

The Emulex LPe12000 family of HBAs use passive cooling, ensuring greater HBA operational reliability in a broad range of server environments, helping to improve SAN availability while lowering data center support and administrative costs.

Best Dual-channel Performance

Emulex 8Gb/s HBAs deliver the best dual-channel performance in a broad range of application environments.

In comparison tests, the Emulex dual-channel LPe12002 outperformed the QLogic dual-channel QLE2562 as follows:

- 127% greater IOPS for second channel
- 37% greater total IOPS for both channels
- 33% more effective CPU utilization

- 15% greater transaction performance
- 115 MB/s more bandwidth

In virtualized environments, I/O traffic is consolidated from multiple virtual machines (VMs) through a single HBA, requiring greater per-port performance. Emulex’s dual-channel HBAs scale better and provide more bandwidth to support more VMs per server than QLogic HBAs.

Unlike QLogic HBAs, Emulex HBAs provide optimum throughput on both channels, to shorten back-up windows and speed up data replication migration, as well as significantly improve the performance of data warehousing applications. With only one channel working at optimum levels, the QLogic dual-channel HBA cripples the performance of the server. In contrast, Emulex HBAs provide maximum throughput on both channels, requiring less server resources, which helps to reduce acquisition and operational costs.

CPU Efficiency for Consolidation and Cost Savings

I/O performance is a significant requirement for business-critical applications. Emulex HBAs off-load I/O-related processing, increasing CPU efficiency and making more cycles available for business applications.

Emulex benchmarks showed significantly better CPU usage when testing the Emulex LPe12002 and QLogic QLE2562 HBAs. LPe12002 had 33% greater CPU efficiency (512 byte read/write).

What does CPU efficiency mean to a data center?

- More server CPU cycles available for application processing
- Fewer servers required to do the same amount of work
- Servers can run more VMs per CPU

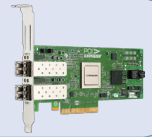
All of this helps with asset utilization which reduces capital expense (CapEx) costs for equipment and operational expense (OpEx) costs for system management.



Emulex LPe12002 vs. QLogic QLE2562

8Gb/s Fibre Channel PCI Express HBA

- Industry-leading performance and reliability
- Available for all leading environments



Emulex Advantages

Faster Deployment

Data centers can optimize SAN performance using management tools that streamline operations, speed deployments and facilitate reconfigurations.

Emulex automates and streamlines the HBA deployment process by installing the device driver and the management application in a single operation. When compared to QLogic, the Emulex installation requires far fewer mouse clicks, reducing deployment time by 3x, which improves management efficiency and business productivity.

Emulex supports pre-device installation, which enables driver installation without the presence of an adapter in the server. QLogic requires adapters to be installed in a server before the driver can be installed. The Emulex pre-device installation facilitates standardized server deployments using the most currently supported driver.

Powerful automation features of Emulex products, combined with secure, centralized management, reduce management costs, optimize performance and increase operational efficiencies.

Maximizes Availability and Simplifies Management

The Emulex common driver and Service Level Interface (SLI) architecture facilitates the introduction of new HBA features, enables easy adapter upgrades and assures investment protection. The common driver architecture allows one driver to work across multiple generations of Emulex Fibre Channel, iSCSI and Fibre Channel over Ethernet (FCoE) adapters, future-proofing them for new operating system and networking features. The SLI architecture ensures that HBA firmware upgrades can be deployed on one server or throughout the network without a server reboot. New firmware releases translate into new functionality and enhanced performance.

QLogic combines the driver and firmware components into a single package, preventing independent firmware upgrades. QLogic drivers only work across three generations of adapters, and QLogic has dropped support for their 2Gb/s HBAs from their current driver. This disregard for their existing customers introduces version control nightmares and prevents intermixing 2Gb/s HBAs with newer QLogic models.

Emulex firmware can be updated after adapter installation using the Emulex OneCommand™ Manager application (formerly called HBAnyware®). Emulex drivers work across 10 generations of Emulex adapters, including the Emulex OneConnect™ UCNAs. Because a reboot is not required for HBA firmware upgrades, servers using Emulex adapters have higher levels of availability and SAN management is simplified. Data centers also avoid unnecessary driver updates that can introduce instability and impact server functionality and SAN availability.

Emulex Responses

Heat Sink Requirement

QLogic claims that using a heat sink on an HBA signifies poor design and reliability. The fact is that heat sinks are commonly used within enterprise-class server solutions. Their use improves adapter and server reliability, as well as SAN availability, all of which demonstrates an excellent design.

In test results comparing the Emulex LPe12002 HBA (with heat sink) to the QLogic QLE2562 HBA (no heat sink), the Emulex LPe12002 I/O controller operates cooler than the QLogic I/O controller. This lower temperature translates into 166% greater reliability for the I/O controller and greater reliability for the HBA and server, which leads to higher SAN availability and therefore lower administration costs.

The Emulex LPe12000 family of 8Gb/s Fibre Channel HBAs leverage passive cooling to operate more reliably in a broader range of server environments.

Performance

QLogic makes a number of claims regarding the performance of their HBAs with various applications and environments in comparison to the Emulex HBAs. Typically, these QLogic claims use outdated drivers and firmware or convoluted assumptions that can confuse the issue of HBA performance.

In summary, Emulex HBAs:

- Have greater CPU efficiency than QLogic HBAs, which improves asset utilization and reduces data center costs. CPU effectiveness is a key factor in maximizing virtualization ratios for business-critical applications. Evaluations by independent company Demartek confirm that Emulex HBAs deliver best VMware and Hyper-V CPU effectiveness.
- Enable better dual-channel throughput over both channels, which means that the Emulex HBA do not affect the performance of the server and do not waste space, electrical power or cooling capacity
- Offer greater scalability for real-world data block sizes

Since performance is only one factor when selecting an HBA, data centers need to review all factors and competing information before selecting an HBA.

Conclusion

The Emulex LPe12000 family of 8Gb/s Fibre Channel HBAs delivers superior reliability, performance, ease of deployment and operation. When compared to QLogic's QLE2562, the Emulex LPe12002 is clearly the ideal choice for your data center.



www.emulex.com

World Headquarters 3333 Susan Street, Costa Mesa, CA 92626 +1 714 662 5600
Wokingham, UK +44 (0) 118 977 2929 | **Munich, Germany** +49 (0) 89 97007 177
Paris, France +33 (0) 158 580 022 | **Beijing, China** +86 10 68499547
Tokyo, Japan +81 3 5322 1348

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