

# Why 8GFC Fibre Channel?

## Overview

The recent advancements in Internet Protocol Television (IPTV), Video on Demand (VOD), Direct2Drive (D2D) and Server/Storage virtualization have driven dramatic increases in demand for higher data bandwidth in data centers. Additionally, the deployment of “Killer Apps” and “Server Virtualization” is driving the requirements for increased storage area network (SAN) throughput. 4GFC Fibre Channel technology has significantly helped with SAN performance, but the vendors of switches, host bus adapters (HBAs) and other transmission technologies have plans to deliver next-generation 8GFC Fibre Channel storage networking products. According to the Fibre Channel Industry Association’s (FCIA) roadmap, 8GFC Fibre Channel storage networks will be available in 2008 for all the major applications.

## Why 8GFC Fibre Channel?

- 8GFC Fibre Channel is key to the data center and is critical to meet the requirements of increased processing density, faster server I/O buses and operating system (OS) virtualization. Server technologies have improved tremendously with the introduction of quad core processing and PCIe 2.0. With the introduction of these new technologies, a faster external communication storage network is required. 8GFC Fibre Channel doubles the current 4GFC Fibre Channel data rate and bandwidth avoiding the potential bottleneck of next generation SAN applications. OS virtualization technology will improve server efficiency and generate more traffic thereby requiring more bandwidth. 8GFC Fibre Channel provides more bandwidth, addressing the high performance requirements of OS virtualization.
- 8GFC Fibre Channel supports the requirements of high performance data centers which includes multiple OS/Servers and quad core processors to

support the ever changing business demands. The business model and technology adoption for 8GFC Fibre Channel are quite different from the 4GFC Fibre Channel adoption cycle which began with drive technology moving to the storage network. The 8GFC technology proliferation is now starting from the edge of storage area networks supporting the higher bandwidth requirements. The change or the reversal in implementation is due to the high performance core data centers becoming very large, mission critical, performance constrained and the lifeline of the business. The core of the data centers will generate a tremendous amount of traffic which previous storage network speeds will not be able to support. Moving to 8GFC Fibre Channel is the natural choice.

- 8GFC Fibre Channel delivers support for consolidated servers increasing throughput and ensuring that the network does not become the bottleneck for virtual servers supporting multiple virtual machines (VMs). Industry trends are making servers and the infrastructure more reliable, compact and cost effective. With server consolidation being a key initiative for data centers

## BENEFITS

- Able to meet the requirements of increased processing density, faster server I/O buses and OS virtualization
- Delivers support for consolidated servers
- Backwards compatibility to protect existing investment

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trying to contain costs and improve productivity, HBA consolidation is being considered as well; exchanging two 4GFC Fibre Channel HBAs or four 2GFC Fibre Channel HBAs for one 8GFC Fibre Channel HBAs lowers total cost of ownership (TCO). Through HBA consolidation by data centers, the reduced number of 8GFC Fibre Channel HBAs can lower capital expenditures (CAPEX), while decreased power consumption can lower operating expenditures (OPEX).

- 8GFC Fibre Channel provides backward compatibility to protect existing investments yet enables a pathway to higher speeds; in other words customers may not need it now, but will use it in the future. Customers can preserve their 2GFC and 4GFC Fibre Channel infrastructure investments and avoid a costly “fork lift” replacement. The “auto-negotiation” feature of Fibre Channel enables 8GFC Fibre Channel products to automatically sense and adapt to the data rate capability of connected lower speed Fibre Channel products without user intervention.

## Summary

8GFC Fibre Channel is critical and key to data centers. 8GFC Fibre Channel will meet the requirements of increased processing density, faster server I/O buses and OS virtualization. 8GFC Fibre Channel supports high performance data centers that are changing and moving to multiple OS/server virtualization and quad core processors supporting an ever changing business. 8GFC Fibre Channel delivers support for consolidated servers that have increased throughput and ensures the network does not become the bottleneck with multiple VMs. Finally, 8GFC Fibre Channel provides backward compatibility to protect existing investments while making an investment in higher speed technology.

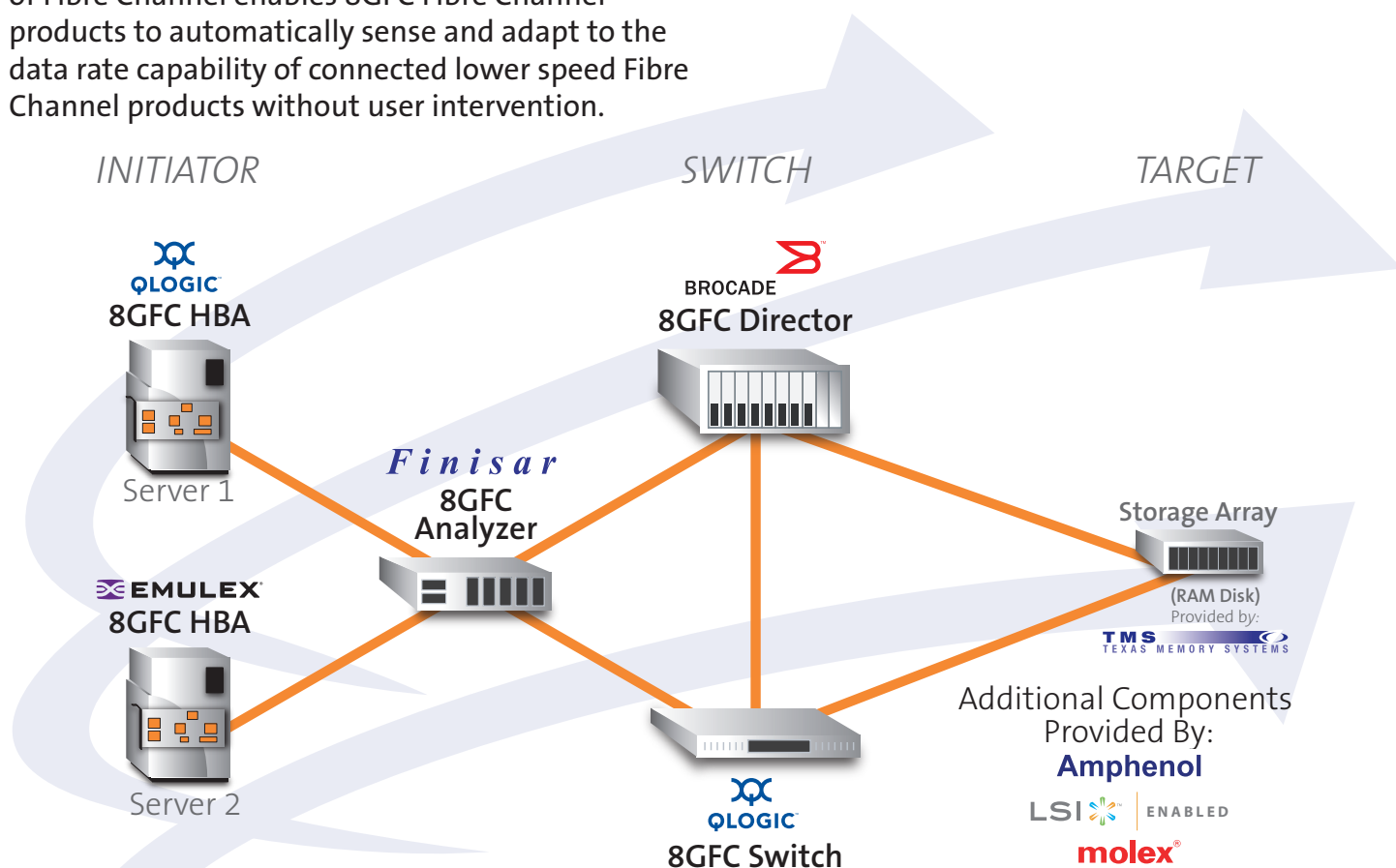


Figure 1: 8GFC Fibre Channel Configuration