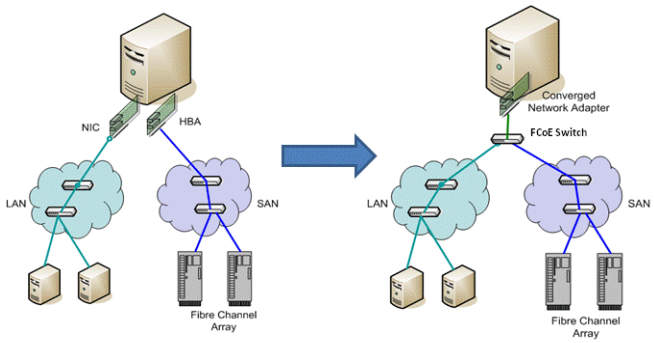
QLOGIC
The Ultimate in Performance

EMC² SELECT

QLogic Fibre Channel over Ethernet

The First Step Towards Converged Networks in EMC Environments



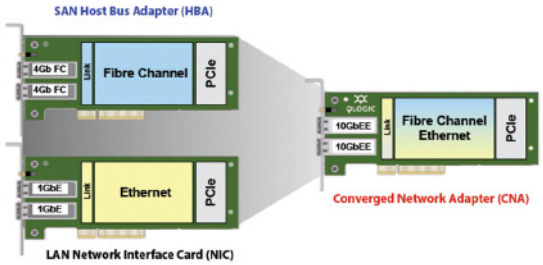
Introduction

Today's businesses need high-density, high-speed, low-latency, consolidated networks that enable data center scalability and improve manageability. Controlling the costs associated with network upgrades is of prime importance.

Data centers typically run multiple separate networks. These networks include an Ethernet network for client-to-server and server-to-server communications, as well as a Fibre Channel storage area network (SAN). To support all the network protocols, data centers use separate, redundant interface modules for each network: Ethernet network interface cards (NICs) and Fibre Channel interfaces in the servers, and redundant pairs of switches at each layer in the network architecture.

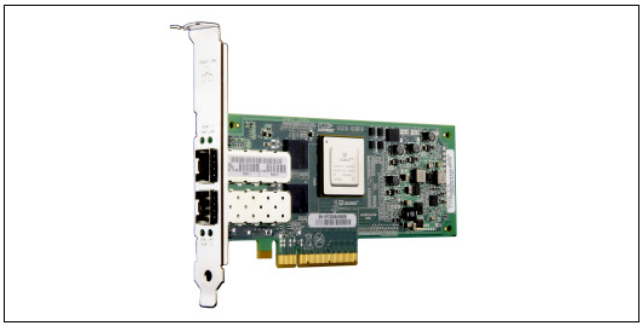
FCoE Game Changer

Fibre Channel over Ethernet (FCoE) consolidates the data center by allowing Fibre Channel SAN traffic and Ethernet LAN traffic to share the same 10Gb Ethernet (10GbE) link. This consolidation results in lower total cost of ownership (TCO) due to reduced server adapter, cabling, switch, power, cooling, and management costs, all while preserving existing investments in Fibre Channel and Ethernet infrastructure. FCoE technology has created a new class of server adapter: the Converged Network Adapter, which operates as a fully featured Ethernet NIC and a Fibre Channel adapter.



QLogic's Second-Generation 8100 Series Converged Network Adapter

In March of 2009, QLogic announced their second generation of Converged Network Adapters: the QLogic 8100 Series. This new family of adapters represents the world's first single-chip Converged Network Adapter based on state-of-the-art 10GbE FCoE technology. Compared to first-generation Converged Network Adapters, the 8100 Series improves FCoE performance by 150 percent and lowers power consumption by 66 percent.



The QLogic CNA Advantage

As depicted in the previous illustration, the 8100 Series design uses a single, fully integrated, low-power, QLogic-developed ASIC, requiring roughly 7.4 watts. This compact design is ideal for space-constrained 1U and blade server designs.

QLogic's 8100 Series adapters are *virtualization optimized*, featuring full hardware offload for FCoE protocol processing, which significantly reduces server CPU utilization. By freeing up CPU cycles to do other work, the server can support more virtual machines (VMs) and applications, thereby improving performance and providing a significant advantage over common 10GbE NICs. These NICs use FCoE software initiators, which rely on the server CPU and system software to create FCoE frames passed to the NIC for transmission, and manage session and error recovery activities. Using 10GbE NICs means that there are fewer CPU cycles available to support VMs or run applications.

QLogic 8100 Series adapters leverage QLogic's bullet-proof Fibre Channel driver stack, which has been deployed and battle-hardened in over 7 million Fibre Channel adapter ports worldwide. This driver stack includes drivers for every major operating system (OS), including VMware® ESX™ 4.0, and has been qualified by every major server and storage vendor. These qualifications make the QLogic Converged Network Adapter driver stack the most reliable in the industry. In contrast, 10GbE NIC vendors must rely on newly created and largely untested FCoE software initiators.

QLogic Converged Network Adapters Available Through EMC® Select

Copper Interface Adapters	
QLE8150-CU-E-SP	Single-Port, 10Gb Ethernet to PCIe Converged Network Adapter with FCoE technology
QLE8152-CU-E-SP	Dual-Port, 10Gb Ethernet to PCIe Converged Network Adapter with FCoE technology
Both adapters ship with an SFP+ cage that supports either passive or active twinax copper cables.	

Optical Interface Adapters	
QLE8140-SR-E-SP	Single-Port, 10Gb Ethernet to PCIe Converged Network Adapter with FCoE technology
QLE8142-SR-E-SP	Dual-Port, 10Gb Ethernet to PCIe Converged Network Adapter with FCoE technology
Both adapters ship with pre-configured optics.	

Conclusion

Using FCoE is the best way to consolidate I/O in the data center. By deploying QLogic's 8100 Series adapters with FCoE technology, data center administrators can begin consolidating infrastructure to achieve economic benefits, run more efficient operations, and realize performance enhancements as the unified fabric becomes reality.

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