

# SCI StorInt™ Dispatch – Brocade080122

## Announcing Brocade new DCX Backbone

This Silverton Consulting (SCI) Storage Intelligence (StorInt™) Dispatch provides a summary of Brocade's recent introduction of their DCX backbone, a new combined 8Gb/s FC – 10Gb Ethernet data center switch.

### DCX Summary

Brocade is the first to introduce to market a new 8Gb/s FC and 10 GbE backbone called the DCX. DCX provides a central core switch for all the multiple, isolated server, SAN, and Ethernet networks in the data center.

DCX is a multi-protocol switch supporting FICON, 8Gb/s FC, GigE, and 10 GbE. What's missing from the DCX is Infiniband. Brocade's main competitor, Cisco is taking a different approach to network convergence with their Vframe a new data center management framework that uses Infiniband to support FC, GigE and 10 GbE. The problem with Cisco's Vframe network convergence is the need for all new Infiniband HBAs, Infiniband gateways, and a new proprietary management framework. Brocade believes the DCX, building on current FC and Ethernet hardware, better preserves current data center investments in switch/HBA hardware and current management frameworks while also advancing technology to the next level.

### DCX architecture

DCX is configured as a one or two backplane system with power and slots for switch blades. Brocades FC switch blade supports 48-8Gb/s FC ports. DCX has an aggregate IO bandwidth of 7.6Tb/s, significantly more than their closest competition. The two versions of DCX support either up to 384- or 896-8Gb/s FC ports. The larger system consists of two of the smaller systems connected by 4-inter chassis links each consisting of 64-8Gb/s trunked links for an aggregate 1Tb connection between each chassis. In addition, DCX supports 10 GbE which will ultimately provide support for DCE, FCoE, HPC, iSCSI and FCIP. Many of these protocols are still being defined in standards committees and will not be available at release but Brocade believes that some may be available as soon as the end of 2008.

One example of an emerging standard is RDMA over Ethernet. Brocade believes RDMA over Ethernet will emerge as a better choice than Infiniband. Today RDMA, a server-to-server networking protocol is only implemented over Infiniband however a new standard is being defined for RDMA over Ethernet. Brocade contends when this new standard is adopted the need for Infiniband will be lessened.

The DCX is very power efficient using much less power than other offerings. In fact, DCX consumes about 0.5 watts per Gb of bandwidth (maximum bandwidth configuration with two power supplies).

In addition, DCX interoperates with current B- and M-series directors and switches. It is the only product out there that interoperates with both of these products which together own the majority of FC ports in the enterprise.

Brocade products in this class provide high reliability, non-disruptive blade and technology upgrades, allowing the DCX to be your data center's network backbone for a long time to come. DCX is protocol agnostic and as new protocols emerge they can be readily adopted. In our discussions on the lack of Infiniband Brocade said they were watching the technology and if it becomes successful could readily implement an Infiniband blade for DCX.

Regarding the market place, some believed the need for 4Gb/s FC was never going to materialize but the rapid adoption of server virtualization put that discussion to rest. Brocade is starting to see some customers supporting 40-50 virtual machines per physical server, causing the need for even higher bandwidth. Thus, the need for 8Gb/s is evident today and as server virtualization continues will only become more acute.

## Announcement significance

First and foremost the delivery of an 8Gb/s FC backbone is significant. The addition of 10GbE to the FC switch backbone makes a lot of sense if the standards can be approved to support the more QOS protocols like RDMA over Ethernet, FCoE and DCE over 10GbE.

Network infrastructure changeover is a multi-faceted process involving a delicate step-by-step progression of switch, HBA, server, and storage vendors. With this announcement at least one switch vendor is ready to support 8Gb/s FC. It's now up to rest of the industry to follow suit.

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*Silverton Consulting, Inc. is a Storage, Strategy & Systems consulting services company, based in the USA offering products and services to the data storage community*