FCoE vs. FC. vs. iSCSI

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Ever feel confused by all the protocols or emerging technologies around, and the plethora of devices available at your disposal? How do you decide which technology to bet on for the long run?

Contemporary Data Center network infrastructure consists of Local Area Network (LAN), Storage Area Network (SAN) and High-Performance Computing (HPC) to provide required resources and computing power.

With Ethernet, Fiber Channel (FC) and Infiniband in the Data Center, meeting high- availability requirements results in a multitude of cables going out of the servers. Management is difficult, and expenses soar.

What's the answer? Put everything on a single link, two for redundancy. Ethernet seems a very tempting candidate—ubiquitous, and already hosting multiple protocols such as Internetwork Packet Exchange (IPX), AppleTalk, TCP/IP, etc.

Storage Area Networks are no exception; large-scale SANs are using FC protocol, which provides the required reliability and latency. iSCSI is typically embraced in smaller corporate environments, thanks to its lower

costs. And a new protocol has come to town: Fiber Channel over Ethernet (FCoE) [link: www.fcoe.com, www.t11.org/fcoe].

At first, there will definitely be implementations combining FC and Ethernet, with FCoE being the transport protocol for Ethernet-attached servers, and FC being a transport protocol for storage systems.

Looking back to the days when Fiber Distributed Data Interface (FDDI), Token Ring and Ethernet were competitors, with Ethernet as the winner, you might guess that FCoE will definitely prevail. But this isn't a done deal; we've yet to see the outcome of this competition.

Smaller corporate environments have already embraced iSCSI en masse, expanding the penetration of consolidated storage concepts beyond anything Fiber Channel could ever accomplish.

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