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### Trend

## 4Gbps to the fore

*The next generation of SAN switches doubles Fibre Channel performance for almost the same price as existing equipment, says Venkatesh Ganesh*



Fibre Channel (FC) continues to evolve. In the early days of SAN, FC switches provided a lowly 25 Mbps of throughput. This gave way to 1 Gbps (Gigabit per second) FC, which, after a few years, was superseded by 2 Gbps. Today, vendors such as Brocade and Cisco have launched 4 Gbps FC switches. As 4 Gbps FC products are backward compatible with the installed base of 1 Gbps and 2 Gbps SAN equipment, it should be easy for customers to integrate high performance applications with their existing SANs. To encourage the adoption of this technology, vendors are offering 4 Gbps SAN switches at nearly the same price as that

commanded by 2 Gbps equipment.

### Evolution

Unlike the 10 Gbps FC standard that is not backward compatible, 4 Gbps products can work with 2 Gbps and 1 Gbps products. 4 Gbps products can sense whether they are connecting with 2 Gbps or 1 Gbps products and adjust their speed accordingly. While few companies today need a 4 Gbps product, vendors are hoping that by pricing products at a level comparable to 2 Gbps products, they can encourage IT managers to buy into this new technology.

Reminisces Shankar Subramaniam, Regional Manager, Asia Pacific, Brocade Systems, "The 2 Gbps standard came up in 2001 and now we see almost 90 percent of companies using this technology. As the bar of storage performance continues to rise, 4 Gbps products will play an important role in the enterprise."

Agrees Neepa Vaidya, SAN Project Manager, eInfochips, "The transition from 1 to 2 Gbps FC is almost complete. 4 Gbps products will gain traction now."

Using technology from Brocade and integrating it with their offering, IBM has announced the TotalStorage SAN Switch, a 4 Gbps 32-port Fibre Channel switch. Says Shailesh Agarwal, GM, Storage Systems, IBM, "We introduced this switch to support port density and enhance performance. We see it as investment protection for the switch infrastructure, as it is independent of storage."

### The force of four

While enterprises have just finished adopting 2 Gbps, here comes another standard. So, does it make sense to adopt 4 Gbps, while companies are just getting a feel for its predecessor? Agarwal of IBM reasons, "It makes sense to adopt 4 Gbps for many reasons. Firstly, speed doubles for almost the same price. Secondly, it is backward compatible, so it can interface with 2 Gbps and this seamless compatibility protects a company's [existing] investments."

With the same infrastructure, enterprises gain a better RoI even though the technology is still expensive. Another possible use of 4 Gbps products can be for consolidating storage. With 4

Gbps products, it is possible to consolidate hundreds of connections at the FC port level. The usage of 4 Gbps products can alleviate the need to purchase additional ports and switches. Further, the FCIA (Fibre Channel Industry Association) has made it mandatory for vendors to provide solutions that are interoperable and backward compatible with existing installations.

### Adoption and usage

Performance is the foundation upon which 4 Gbps is built. Says Subramaniam, "Although 1 and 2 Gbps SAN switching infrastructure has provided sufficient bandwidth, devices such as high-speed tapes demand additional network bandwidth. These devices can use [the 4 Gbps] architecture enabling backup and restore operations at higher speeds." Scalability is an obvious advantage. Explains Subramaniam, "The SilkWorm 4100 provides ports on-demand scalability. This helps organisations scale in 8 port increments from 16 to 24 to 32 ports. The user only needs to purchase an additional licence key." Companies pay for the ports that they actually use. Once a company's needs scale up, a licence key is all that is required for activating new ports. Subramaniam sees a huge potential in the SMB space for this offering. He says, "As 70 percent of Indian companies fall in the SMB category, they typically look at 8 to 16 port switches and this fits neatly into their scheme of things."

However, Sanjay Kharade, Principal Consultant, Cisco Systems, India and SAARC has a different point of view. Says he, "Currently 4 Gbps products suit enterprises. The telecom sector could be one of the early adopters of this technology."

### Switching ahead

So, are Indian companies ready for 4 Gbps? Many Indian companies are in the process of saturating their 2 Gbps FC links. To expect 4 Gbps to flood the market is a bit far fetched. However, the fact that one can upgrade to 4 Gbps without having to make a substantial investment over and above what would have been required for a 2 Gbps SAN cannot be ignored.

Says Subramaniam, "We suggest that a consumer need not go in for a SAN infrastructure that is purely composed of 4 Gbps equipment. An organisation can deploy 2 Gbps products for applications that have relatively lower data throughput needs and 4 Gbps ones for applications that require higher data transfers for backup or disaster recovery operations." Whether you need 4 Gbps FC switches or not, with vendors providing products at prices comparable to existing 2 Gbps offerings, it may be time to pilot 4 Gbps products.

<b>4 Gbps-what's on offer</b>	
Vendor	4 Gbps SAN switch
Brocade	SilkWorm 4100
Cisco	MDS 9200, MDS 9500
QLogic	SANbox 2-64

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