

iSCSI Low-cost SANs

INTRODUCTION

Storage Area Networks (SANs) offer popular benefits including easy-to-manage, reliable, server-independent, external storage pools that respond quickly to changing IT needs. These storage pools eliminate both the underutilization and overflows of storage capacity commonly associated with internal storage or storage islands attached to each server.

Fibre channel SANs permit servers and storage to be repaired and maintained while applications continue running. Redundant components and RAID data protection allow virtually continuous 24x7x365 operation. Everything about this type of SAN is good – except often the price. Fibre channel SANs require expensive host bus adapters and switches. While costs of these interconnecting devices have come down from their initial high levels, it costs thousands of dollars per server for redundant connections to each server. This price for “plumbing” often far exceeds the cost of the server attached and the storage being shared – thus reducing the overall value of the solution substantially. Further, fibre channel is often a new networking technology for many small to medium businesses and does not leverage existing networking skills and infrastructure already in place.

FlexSAN from Winchester Systems is an IP-based SAN with enterprise level capabilities but at an entry-level price. It offers fibre channel SAN functionality using familiar and low-cost IP technology. FlexSAN offers four iSCSI ports and connects directly to the network using standard Ethernet cables. This is the quintessential essence of “plug-and-play” installation. There is no easier way to create a SAN than to install a FlexSAN disk array onto an existing IP network. Servers require only inexpensive gigabit Ethernet network interface cards that are generally standard in most servers.

FlexSAN lowers costs further by using SATA and enterprise SATA disk drives which are far lower cost than fibre channel drives used in high end enterprise applications. FlexSAN is not a replacement for enterprise SANs for the organization’s top 20% most critical applications. Rather, it offers the ideal combination of SAN functionality, reliability, performance and cost-effectiveness that is

appropriate for the remaining 80% of the organization’s applications.

To integrate into the remaining fibre channel infrastructure found in many larger organizations and to avoid creating an isolated island of storage, FlexSAN offers up to four fibre channel ports. Thus, FlexSAN can be directly connected to the enterprise SAN via fibre channel. FlexSAN provides IT managers with the functionality, performance, reliability and price of an IP-based SAN while preserving the ability to connect to the enterprise SAN simultaneously – providing the best of both worlds.

Enterprise-class storage services offered by FlexSAN include snapshot backup, volume virtualization and on-line array expansion. These valuable storage services are normally associated only with expensive fibre channel SANs and generally available as extra cost options but they are included at no extra cost with FlexSAN.

WHY iSCSI SANs

- Simplicity and ease of management
- Reduce hardware & software costs
- Reduce annual maintenance costs
- Uses existing people & infrastructure

REQUIREMENTS

- Gigabit Ethernet infrastructure
- Optional fibre channel infrastructure

TYPICAL ENVIRONMENTS

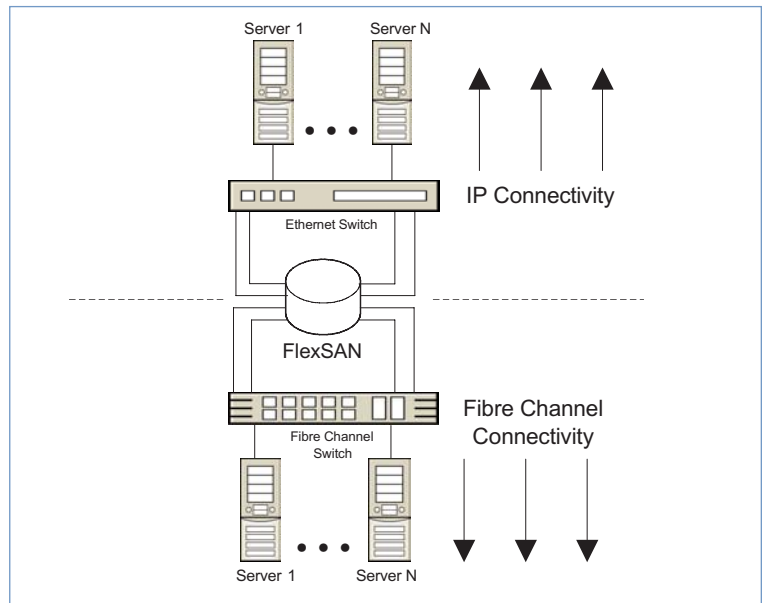
- Small and medium businesses
- Department of larger organizations

BENEFITS

- Quick and easy installation
- Low cost storage pool
- Efficient capacity utilization
- Easy to manage

HOW IT WORKS

FlexSAN is installed by simply plugging it into an Ethernet network and setting up the array from any web browser. The exceptionally simple menu offers six steps: (1) network setup, (2) disk setup, (3) host setup, (4) system initialization, (5) virtual disk setup and (6) presenting the virtual disks to the hosts. Any system administrator familiar with IP networks and standard server deployment can complete these easy-to-follow menus in minutes. Once installed, the virtual disk volumes emulate ordinary SCSI disks at the host and are addressed as any standard volume by the native operating system. Data passes over the gigabit Ethernet network, which can handle most traffic with sufficient speed. For the few applications that require higher speed, four Fibre Channel ports are available.



The diagram shows a FlexSAN storage pool installed on a gigabit Ethernet connected to several industry standard servers using up to four IP ports. It also shows how the storage is connected using up to four optional fibre channel ports to the organizations enterprise SAN.