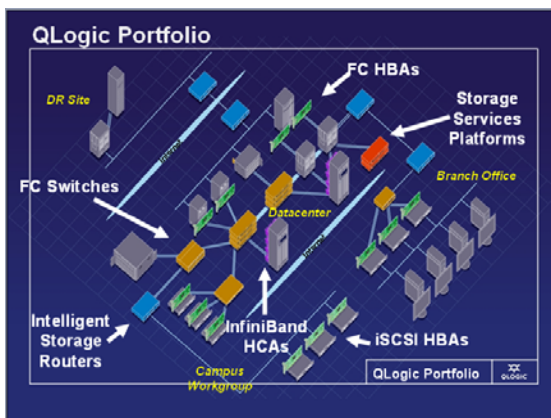


# Reducing TCO with SAN Consolidation

## SAN consolidation lowers storage Total Cost of Ownership through QLogic's economy of scale

### Executive Summary



Most IT organizations now rely on Storage Area Network (SAN) solutions to provide business accessibility to their critical data. The complexity and scope of these solutions grow to meet ever-increasing storage capacity needs.

As a result, the following criteria become essential when choosing SAN architecture and vendor:

- How fault-tolerant is the solution?
- Is the solution manageable and easy to use?
- How quickly and easily can the solution be scaled? Is it cost effective?
- How easily can the solution migrate to new capabilities?

SAN architects will understand how the QLogic solution enables the following benefits:

- Simplified life cycle
- Economy of scale
- SAN consolidation
- **Reduced Total Cost of Ownership (TCO)**

### Key Points

QLogic's SAN consolidation simplifies the life cycle of SAN solutions to **reduce overall TCO** through the following key features:

- Disaster recovery/high availability
- Fault tolerance
- Ease of use
- Cost-effective scalability
- Migration/investment protection

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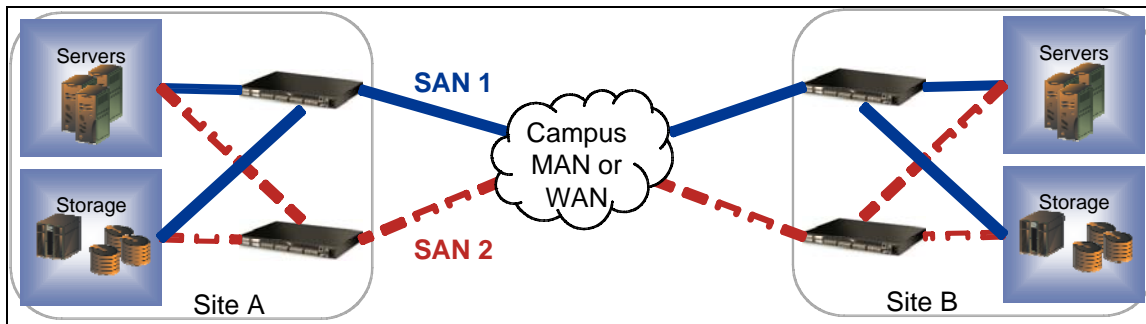
### SAN Consolidation with QLogic Switches

SAN consolidation with QLogic switches reduces the TCO of SAN solutions by providing the following important benefits:

- Disaster recovery/high availability
- Ease of use
- Cost-effective scalability
- Simplified migration/investment protection

### Disaster Recovery/High Availability

The increasing complexity of storage solutions drives the need to consolidate SAN islands and create a plan for disaster recovery. Consolidation is typically achieved by implementing a SAN Extension between remote sites to protect against loss of a site and a high availability SAN to protect against component failure, as in the following drawing.



The following key features of QLogic Fibre Channel switches simplify this implementation:

- **Extended distance wizard:** Optimizes the performance of SAN switch links over Metro or Wide Area networks.
- **High-availability switches:** Dual, redundant power supplies and cooling fans guarantee the operation of the Fibre Channel switch in the event of a failed component or power source.
- **Remote backup support:** QLogic switches are qualified with most popular remote backup software applications to ensure interoperability and to simplify the installation.

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#### Ease of Use

To simplify the consolidation and management of growing SANs, QLogic Fibre Channel switches provide a complete toolset of hardware and software features, with Multi-Fabric Management, Configuration Wizard, and Stack Management, as follows:

- **Multi-Fabric Management** manages multiple fabrics using a single software tool. This has the following benefits:
  - It reduces TCO by implementing a single point of control.
  - It avoids the cost and support of multiple tools.
- **Configuration Wizard** simplifies switch deployment with a software tool that automatically detects, configures, clones, and restores switches.
- **Stack Management:** Stacking and managing switches, like the SANbox 5602, as a single entity provides the following benefits:
  - It ensures configuration consistency across multiple switches
  - It lowers overall TCO by eliminating costly fabric issues due to misconfiguration and repetitive management tasks.

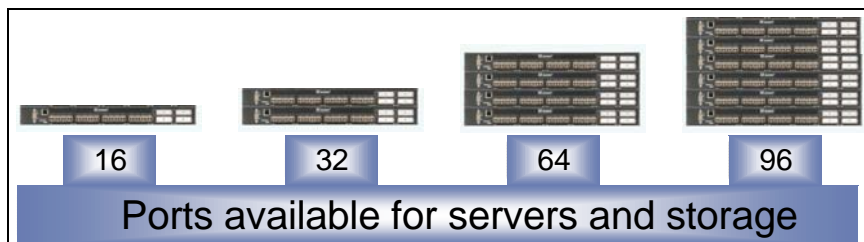
#### Cost-Effective Scalability

Effective SAN consolidation requires the ability to scale the capacity of the solution, but in a cost-effective and manageable manner. Its stackable architecture and adaptive trunking give QLogic scalability significant advantages.

#### Stackable Architecture

Stackable Fibre Channel switches, like the SANbox 5602, feature purpose-built stacking ports with high 10 Gb/sec performance and plug-and-play installation. Unlike traditional fixed port switches, all the switch ports are preserved for attachment to servers and storage as switches are added to the stack. In addition, the stack is maintained as a single entity via the software management tools.

As shown in the following figure, the number of available switch ports increases by 16 each time a switch is added to the stack, since they connect via the stacking ports (shown on the right side of each device).



#### Adaptive Trunking

Trunking is a key method of ensuring maximum redundancy and performance of multiple inter-switch links (ISLs) as SANs scale up. Adaptive trunking from QLogic requires no manual configuration and it automatically optimizes 4Gb and 10Gb trunks across the fabric.

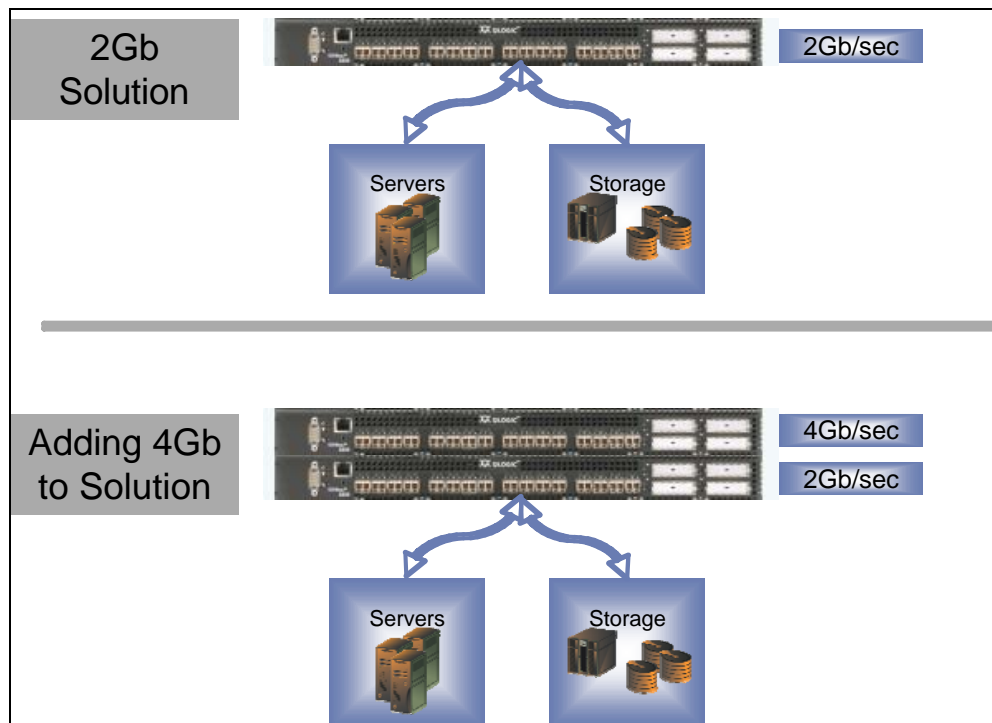
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### Simplified Migration/Investment Protection

The key element in protecting the investment of an existing SAN infrastructure is the cost of migrating to, and incorporating, new capabilities. This cost is one of the largest factors in the TCO of SAN solutions.

The stackable line of QLogic Fibre Channel switches is designed to add future capability in an easy-to-implement and cost-effective manner. By definition, stackable architecture allows customers to mix and match capabilities and manage them as a single entity.

For example, the following figure shows how customers utilizing a 2Gb SANbox stackable switch can easily migrate to 4Gb ability by simply stacking another switch. Unlike traditional fixed-port switches, these need no reconfiguration of the attached server or storage devices and the upgrade is non-disruptive.



This approach protects existing SAN investment for future capabilities. For example, migration to 8Gb/sec capability can be added quickly by a simple, non-disruptive addition to the stack.

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### Benefits of QLogic SAN Consolidation

QLogic's SAN consolidation simplifies the life cycle of SAN solutions to reduce overall TCO. Key aspects of this approach to reducing or avoiding costs include:

- Disaster recovery/high availability
- Fault tolerance
- Ease of use
- Cost-effective scalability
- Migration/investment protection

These cost reductions **and cost avoidances** are achieved as follows:

- **Disaster Recovery/High Availability** – SAN Extension between remote sites protects against loss of a site and a high-availability SAN protects against component failure.
- **Fault Tolerance** – Avoid downtime or loss of data by implementing a disaster-recovery solution with remote backup, extended-distance optimization tool, highly available switches, and redundant fabric support.
- **Ease of Use** – Minimize management costs by simplifying tasks via multi-fabric, configuration wizard, and stack-management tools.
- **Cost-Effective Scalability** – Limit costs of expansion by eliminating the reconfiguration of existing devices, preserving ports for servers and storage, and scaling non-disruptively using stackable switch architecture with adaptive trunking.
- **Migration/Investment Protection** – Maximize existing investment using stackable switches to add new technologies in the future. Mix and match capabilities and manage them as a single entity. No reconfiguration of the attached server or storage devices is needed and the upgrade is non-disruptive.

For more information on QLogic products and reducing TCO with SAN consolidation, visit [www.qlogic.com](http://www.qlogic.com).