IBM TotalStorage SAN Starter Kit

A complete and cost-effective storage solution that is easy to install and manage

**Highlights**

- Provides cost savings opportunities offered by networked storage environments where IBM® xSeries® and storage can grow independently of each other

- Helps ease time, effort and risk of moving to a networked storage environment

- Can help clients simplify their storage management and backup needs by consolidating storage to a single management point

- Price starts at under USD $16,500

Small businesses find their storage growing as fast as or faster than other businesses. Usually, the small servers typically found in these environments grow with direct attached storage until storage manageability becomes a problem. Some servers are out of space while others have ample room. Some servers demand high disk performance, revving some disks hard and increasing the likelihood of failure while others can have light performance needs. Backup and disaster protection can only be applied on a server-by-server basis, multiplying the backup chore times the number of servers.

The solution to this challenge is to consolidate storage into a single network accessible and sharable by all the servers in the business. To do that—a reliable, high-performance storage server is needed along with a network to connect the storage to the servers. Most importantly, this new centralized information must be protected—an easier task when all the storage is in one place. Redundant controllers in the disk system help protect that information.

With an IBM TotalStorage® SAN Starter Kit, companies can make their first move onto consolidated IBM storage quickly and easily.

**Simplified and protected networked storage with IBM TotalStorage SAN Starter Kit**

With easily manageable and integrated storage components, the SAN Starter Kit is an excellent solution for small businesses looking for storage that they
can easily install and operate themselves with little training. It has two main components—an active/active dual-controller IBM TotalStorage DS400 Express for disk storage and an IBM TotalStorage L10 Switch for networking. The SAN Starter Kit DS400 comes preloaded with four 146GB SCSI HDDs and the necessary components for redundant connections to two xSeries servers, including four host bus adapters (HBAs), twelve Fibre Channel SFP transceivers and eight Fibre Channel cables. It supports the Windows® operating system and with the included and easy-to-use IBM ServeRAID™ Manager, common management software tasks can be accomplished quickly.

A wide variety of applications can be improved with networked storage, from simple file and print sharing to more demanding data-intensive applications for eCommerce and databases.

**Ready for your business’ growth**

The SAN Starter Kit is expandable with features to meet your business’ needs as it grows. And it starts with impressive expansion capabilities for growing beyond connecting an initial pair of servers out of the box. For example, the switch included with SAN Starter Kit is capable of connecting nine servers (more than can be attached with 8-port switches offered by other vendors since at least one port is always needed to connect to the storage array). Adding additional equipment such as host bus adapters and cables can allow more servers or storage devices to be added to the SAN Starter Kit environment. The SAN Starter Kit offers multipathing and can be further enhanced with the addition of a second L10 switch, DS400 Express storage enclosure, or both for additional protection. Designed for standalone or rack-mount, the SAN Starter Kit can be expanded to hold up to 12TB of physical storage when utilizing EXP400 expansion units and 300GB SCSI HDDs.

**Quick and easy installation**

The SAN Starter Kit comes in a simple configuration for easy-set up and quick installation. The SAN Starter Kit’s install guide has all the information needed to install the disk and fabric, connect your servers, and connect to the DS400 via the included ServeRAID application. If your business seeks a design suited for even higher availability, a high-availability server clustering solution can be created with redundant switches. The server clustering solution can scale to higher numbers of servers and share two DS400 storage arrays, each with dual Fibre Channel (FC) adapters, cross-connected to the separate cascaded switches.

An entry data protection solution consists of up to eight servers, one disk storage array and a library with one tape drive. An expanded data protection solution can be created by cascading a second switch with two ISLs (Inter-switch Links), a second disk storage array and a second tape drive to support up to twelve servers.
For configurations with a need for higher capacity, more servers, more tape drives or more storage arrays, consider the IBM TotalStorage portfolio, which has a wide range of software, disk, tape, and switch offerings to help meet your business needs. The IBM TotalStorage DS4100 is the next step up in IBM's comprehensive disk storage portfolio.

**Part of IBM TotalStorage portfolio**

IBM continues to offer a broad portfolio in the storage marketplace and stands ready to meet clients’ needs. For high-performance and high-capacity storage requirements, IBM offers numerous disk storage and storage fabric offerings that offer logical growth paths beyond the SAN Starter Kit.

The DS4000, DS6000, and DS8000 series offer a set of capabilities, capacities, and performance levels to meet the needs of a wide variety of businesses and applications. Members of the IBM TotalStorage disk portfolio include high performance disk and less expensive serial ATA options. Benchmark results for many are available, highlighting IBM’s commitment to both openness and demonstrated performance by visiting [www.storage-performance.org](http://www.storage-performance.org).

In addition to the industry’s widest disk portfolio, IBM offers a range of offerings covering tape, software, and services for all your business’ storage needs. To take best advantage and fully protect your new SAN storage, IBM recommends the use of Tivoli® Storage Manager for more efficient backup and recovery that can be automated and operated without requiring extensive time and effort. The additional options of backing up that data to an auto-loading tape system, such as IBM TotalStorage 3581 Tape Autoloader, rounds out an excellent backup solution for your business’ data. IBM Business Partners and IBM Global Services offer a wide range of support offerings, including data migration into for new SAN users which may be the most efficient and cost effective way to get started and take advantage of the benefits offered by SAN Storage.

IBM TotalStorage SAN solutions provide integrated SMB and enterprise solutions with multi-protocol local, campus, metropolitan and global storage networking. Besides the L10 switch that comes with the SAN Starter Kit, IBM provides choices from all the major storage fabric vendors. IBM SAN solutions can be purchased with worldwide service and end-to-end support by IBM Business Partners and IBM Global Services.

IBM can meet your storage needs as you grow from your first SAN to wherever your success takes you.
### IBM TotalStorage SAN Starter Kit at a glance

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<th>Feature</th>
<th>Benefit</th>
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| **Easy-to-install storage fabric** | • Comes with step-by-step installation guide for storage and switch configuration  
                                    • 10-port switch fabric supports expansion by simply adding another 10-port switch  
                                    • Space-efficient design of the L10 Switch offers 10-port connectivity in 1U width rack at half-height |
| **Robust design**            | • High-end performance and throughput at entry-level prices  
                                    • Compatible with high-availability fabric and storage design (requires additional hardware)  
                                    • Dual redundant controllers, fans and power supplies |
| **Open**                     | • Compatible with IBM @server xSeries servers running Windows  
                                    • Expandable with EXP400 expansion units to 12TB physical storage with 300GB SCSI HDDs |
| **OS support**               | • Windows 2000 Server Editions  
                                    • Windows 2003 Server Editions  
                                    • Microsoft® Clustering  
                                    (See [ibm.com](http://ibm.com)/pc/compat/xseries/storage/fcmatrix.html for latest interoperability Matrix for Fiber Channel) |

### IBM TotalStorage DS400 Express
- Includes 4 146GB hard disk drives
- Scalable to 12TB of physical storage (40 - 300GB drives w/ 2 EXP400)
- Includes 4 HBAs for host connection

### IBM TotalStorage Switch L10
- Up to ten ports, with industry-standards-based 1 or 2 Gbps Fibre Channel Arbitrated Loop operation.
- Housed in a 1/2-rack width 1U-high chassis, with zoning functionality and inter-switch trunking support between two L10 units (with additional L10).
- With additional L10 switch, two L10 units can occupy 1U rack space when using the rack mount kit option

### Cables
- Total of 8 5m cables to connect host to switch or server to switch included with SAN Starter Kit

### Additional parts
- Total of 12 SFPs (optical transceivers) for connecting components to cables included with SAN Starter Kit

### Install Guide
- Downloadable Install Guide written by IBM includes instructions on installation, connections and configuration via ServeRAID

### Support
- Optional Business Partner services and migration offerings

### Financing
- Optional IGF financing available

### Warranty
- 1-year warranty
- Warranty extensions available for additional charge

### Technical support
- Additional support available for additional charge
For more information
To learn more about the IBM TotalStorage SAN Starter Kit, contact your IBM marketing representative, IBM Business Partner or visit: ibm.com/storage/san/starterkit.html

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MB, GB and TB equal 1,000,000, 1,000,000,000 and 1,000,000,000,000 bytes, respectively, where referring to storage capacity. Actual storage capacity will vary based upon many factors and may be less than stated. Some numbers given for storage capacities give capacity in native mode followed by capacity using data compression technology.