

Scalable near-line storage for small to mid-range computing environments



IBM TotalStorage FAStT100 Storage Server



Highlights

- **Well-suited for small to medium-sized enterprises that need affordable, entry-level near-line storage for seldom-accessed data**
- **Supports storage expansion of up to 56 SATA disk drives with IBM® TotalStorage® EXP100 enclosure**
- **Designed to allow upgrade to higher capacity IBM TotalStorage FAStT servers while avoiding data loss or interruption**
- **Offers high-availability features that are designed to avoid single points of failure**
- **Provides four 2Gb Fibre Channel host ports designed to economically support multipath failover for direct-attach clustered servers**
- **Includes powerful, intuitive management tools, such as the FAStT Storage Manager, that help centrally manage all FAStT storage subsystems**

Most businesses today must retain a growing volume of valuable data that is rarely accessed—if at all—but needs to be online and stored for long periods of time. This near-line application storage must keep up with demand; however, for small and medium-sized enterprises, predicting storage needs and controlling costs can be especially challenging as business grows.

The IBM TotalStorage FAStT100 Storage Server is designed to give cost-conscious enterprises an entry-level server that can help meet storage consolidation and near-line application storage needs without undo expense, while leaving them room to grow. With up to 14TB of Serial ATA (SATA) physical disk storage—and 14 internal 250GB disk drives inside the controller—the FAStT100 is designed to provide ample yet scalable storage without the cost of extra expansion units. This storage server also is designed to help consolidate direct-attach storage into a centrally managed, shared or

storage area network (SAN) environment. And with four Fibre Channel ports to attach to servers, the need for additional switches can be reduced or eliminated to help provide additional cost savings.

The FAST100 is designed to interoperate with IBM **@server**[®] pSeries[®] and xSeries[®] servers as well as with other Intel[®] processor-based and UNIX[®]-based servers. To help make integration easy, IBM tests the FAST100 for interoperability with IBM servers, as well as with many other brands of servers and switches.

The FAST100 also includes management tools and automation features designed to help lower administration costs. And the cost benefits that come with the FAST100 are not at the expense of reliability—the SATA-based FAST100 Storage Server helps support increased reliability and performance compared to many older, nonredundant designed parallel ATA products.

Scalability and reliability as storage needs grow

Enterprises can expand FAST100 capacity—up to 56 SATA disk drives—with the EXP100 SATA disk

drive storage unit, which helps address the requirements of various fixed-content and retention-managed data applications that require large amounts of storage capacity.

Another scalability feature of the FAST100 is Dynamic Capacity Expansion, which also is designed to provide the ability to add EXP100 enclosures to an existing FAST100 Storage Server while avoiding interruption to operations. By adding these enclosures, the FAST100 is designed to help bring unused storage online for a new host group or an existing volume to provide additional capacity on demand. The FAST100 includes many of the same redundant hardware design features as other FAST products to help protect and keep data online as storage server arrays evolve.

As part of a family of storage servers, the FAST100 is designed to enable capacity and version upgrades to other FAST servers and uses common storage management software and expansion enclosures. By using the FAST Storage Manager version 8.42, you can combine multiple FAST100 servers to help

address additional capacity requirements—helping further enhance your ability to respond on demand. These capabilities are designed to enable small to medium-size enterprises to move up to higher capacity servers as their needs change while helping manage expenditures, keep valuable data intact and minimize downtime.

Centralized and low-cost administration

Along with providing affordable, scalable storage, the FAST100 is designed to help reduce system administration costs through server consolidation, direct-attach storage capabilities and management tools such as the FAST Storage Manager.

The FAST Storage Manager is designed to support centralized management of all local and networked FAST storage systems. For efficiency, it helps allow administrators to quickly configure and monitor storage from a Java[™]-based Web browser interface. The Storage Manager also is designed to help administrators customize and change settings as well as configure new volumes, define mappings, handle routine maintenance and dynamically add new enclosures and capacity to existing volumes—while avoiding interruption to user access to data.

The FASiT family: A variety of options to help meet diverse storage needs

Product	Performance requirements	Max physical capacity	Max drives	Redundant drive channels	Applications	Environment	Bottom line
FAST100	Minimal	14.0TB	56 SATA	Two 2Gbps	File storage and cache online storage for quicker backups to tape	Workgroup	Affordable storage for near-line applications and quick access compared to
FAST200	Minimal	9.7TB	60 SL/HH	Two 1Gbps	Specialized file storage	Workgroup	Cost-effective functionality with limited performance require-
FAST600 Single	Minimal	2.0TB	14 FC	One 2Gbps	Specialized file storage	Workgroup	Affordable performance and bandwidth, and upgradeable to dual and turbo
FAST600 Dual	Minimal	8.2TB	56 FC/112 SATA	Two 2Gbps	Specialized file storage	Workgroup	High IOPS performance for value (small-scale configura-
FAST600 Turbo	Consistent	16.4TB	112 FC/112 SATA	Two 2Gbps Copy Services Options	Specialized file storage	Departmental	High IOPS performance for value (medium-scale configura-
FAST700	Varying	32.9TB	224	Four 2Gbps	"Tier 2" specialized file storage	Departmental	Excellent price-conscious IOPS performance and high availability for mid-range
FAST900	Varying	32.9TB	224	Four 2Gbps	Production, OLTP and replication	Enterprise	Highest throughput performance of FAST family and high IOPS performance for large configura-

Failover drivers, performance-tuning routines and cluster support are also standard features of the FAStT Storage Manager designed to help improve availability. The FAStT100 also supports many nondisruptive, automatic controller firmware upgrades to help make it easy to add functionality. By providing these features and an intuitive user interface, the FAStT Storage Manager is designed to help reduce the complexity of storage management and the amount of time spent managing storage.

Improved data management and protection

The IBM TotalStorage FAStT100 Storage Server has several features designed to help improve data management. Using the FAStT Storage Manager software, administrators can partition the FAStT100 Storage Server into as many as 16 virtual servers. This capability allows IT organizations to strategically allocate storage capacity, helping to optimize the utilization of storage space and reduce hardware and storage management costs.

Instead of purchasing multiple RAID controllers with their own dedicated disks and management, organizations can attach multiple servers to one central system—the FAStT100—which is designed to help provide hardware failover with dual controllers and common management.

Other FAStT100 features designed to help enhance data management and protection include IBM FlashCopy®, Dynamic Volume Expansion, Dynamic Capacity Expansion, Dynamic RAID Expansion and Dynamic Segment Size.

- *IBM FlashCopy is designed to create point-in-time copies of logical volumes, which may be used for file restoration, backups, application testing or data mining.*
- *Dynamic Volume Expansion is designed to allow administrators to resize logical volumes while avoiding disruption to users. This feature can work well for applications with rapidly growing data requirements, such as Lotus Notes® and Microsoft® Exchange applications.*

- *Dynamic Capacity Expansion is designed to allow administrators to add new disk drives to a RAID array to help increase array capacity, while the system remains operational. The need for storage space grows constantly in today's IT environment, so it is essential to have a capacity expansion process designed to be nondisruptive and avoid downtime.*
- *Dynamic RAID Expansion is designed to allow administrators to change the RAID level of an array while avoiding disruption. IT administrators can use Dynamic RAID Expansion when storage requirements change over time, when existing RAID levels are no longer optimal for a particular environment or when the performance-tuning process has indicated that a different RAID level would be more appropriate than the existing one.*
- *Dynamic Segment Sizing is designed to allow the block size or data stripe to be changed while avoiding downtime. RAID controllers read and write data to and from the disk drives in fixed-sized segments or blocks of data. Choosing the right segment size is important for optimal performance.*

Intuitive tools that help manage storage

The FAST100 Storage Server is supported by a variety of IBM Tivoli® software products, including Tivoli Storage Manager and Tivoli Storage Resource Manager, as well as many third-party hardware and software products. These applications can add to the capabilities of the FAST100 by enabling backup and storage reporting.

The IBM TotalStorage Proven™ program is designed to identify and test products for interoperability with the FAST100 and other IBM disk products. Products in this program have been tested to help reduce or eliminate time-consuming installation and support problems. For more information, please visit ibm.com/totalstorage/proven

Reliable service and support

FAST Storage Servers are backed by a hardware warranty. Additional services for hardware installation, FAST Storage Manager configuration and

advanced storage management are also available from IBM Global Services (IGS). IBM SupportLine services can assist with using the FAST Storage Manager, helping customers to maintain their FAST Storage Server.

The optional FAST Service Alert feature is designed to enable the FAST100 to quickly notify the IBM Support Center of problems when they occur, helping to reduce or eliminate the need for customers to place service calls. This feature can forward error alert messages via e-mail from FAST Storage Manager to IBM to help expedite diagnosis and repair of failed hardware and software problems.

Competitive financing options from IBM Global Financing

IBM Global Financing offers some of the industry's most competitive rates for a wide range of IBM products and services, including the FAST100 Storage Server, for the duration of the financing term. For more information, please visit ibm.com/financing

High-performance storage for the on demand world

The features of the FAST100 Storage Server further enhance the functionality, flexibility and scalability of the IBM FAST product family. As a near-line, SATA storage server, the FAST100 is designed for applications that require faster access than offline storage offers but do not require the continuous, instantaneous access provided by online storage. FAST100 can also be used to cache online storage for quicker backup to tape.

The performance, capacity and data management and protection capabilities of the FAST100 not only can help address the storage needs of today, but also can provide a base for continued growth to help businesses meet future storage requirements. By combining these capabilities with a design focused on SATA solutions, manageability and affordability, the FAST100 Storage Server can offer a cost-effective storage system for small to medium-size enterprises.

IBM FASt100 Storage Server at a glance

Characteristics

Model	1724-100
RAID controller	Dual active 2GB RAID controllers
Cache memory	512MB total, battery-backed
Host interface	4 Fibre Channel (FC) Switched and FC Arbitrated Loop (FC-AL) standard
Drive interface	2Gbps FC-AL
Supported drives	250GB 7,200 rpm
RAID levels	0, 1, 3, 5, 10
Storage partitioning	1, upgradeable to 4, 8 or 16
Maximum drives supported	56 Serial ATA drives (using three EXP100 Expansion Units)
Fans and power supplies	Redundant, hot-swappable
Rack support	19-inch, industry-standard rack
Management software	IBM FASt Storage Manager version 8.42
SAN support	Supported IBM FC switches and directors (product numbers 2109, 3534, 2031, 2032, 2042 and 2062)
Optional copy services	FlashCopy, VolumeCopy
Warranty	1-year parts and labor warranty with 24x7 support 4-hour response

Physical characteristics

Dimensions	132.3 mm H x 482 mm W x 597 mm D (5.2 in x 19 in x 24 in)
Weight	30 kg (66 lbs)

Supported systems¹

For a list of currently supported servers, operating systems, host bus adapters, clustering applications and SAN switches and directors, refer to the FASt100 Interoperability Matrix available at ibm.com/storage/fast100. For availability dates, configuration options and attachment capabilities, refer to ibm.com/storage/fast100.
The FASt100 Storage Server is supported only in rack installations. With optional features, up to three FASt EXP100 Expansion Units can be attached to the FASt100 Storage Server enclosure for a maximum of 56 drives.

For more information

For more information, contact your IBM representative or IBM Business Partner. In the United States or Canada, you also can call IBM Direct: 1-800-IBM-CALL (1-800-426-2255). Or visit **ibm.com**

For more product information and country-specific phone numbers for those outside the U.S. and Canada, please visit **ibm.com**

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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.

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¹ For specific details and configuration availability, please visit

ibm.com/storage/fast100.