IBM System Storage DS6800

Highlights

- ***Designed to deliver enterprise-class functionality, with open systems and a mainframe host attachment in a modular, scalable package***
- ***Provides low total cost of ownership by offering tiered pricing on software and a 24x7 IBM onsite repair warranty that covers both hardware and software***
- ***Designed to offer a highly available, robust storage solution for medium and large enterprises***
- ***Supports advanced copy services, which are interoperable with IBM System Storage™ DS8000™ series and IBM TotalStorage® Enterprise Storage Server®***
- ***Designed to provide over 1600 MBps performance for high throughput applications***
- ***Includes 8 host ports supporting Fibre Channel and IBM FICON® connectivity***
- ***Supports Fibre Channel and Fibre Channel ATA (FATA) disk drives for tiered storage in a single system***
- ***Includes DS6000 storage manager software that supports a Web-based intuitive interface and Express Configuration Wizards for simplified system configuration and management***

Flexible, high-performance storage for medium and large enterprises

The IBM System Storage DS6000™ series is designed to provide high availability and high performance in a small, modular package. This series, along with the DS8000 series, offers an enterprise-class continuum of storage systems with shared replication services and common management interfaces. The DS6000 series systems are well suited to help you simplify your storage infrastructure, support business continuity, and optimize information lifecycle management.

As part of the IBM System Storage DS Family, the DS6800 is designed to provide medium and large businesses with a low-cost, enterprise-class storage solution to help simplify data management and to provide comprehensive data protection and recovery capabilities and easy scalability for both mainframe and open system storage needs.

Enterprise-class Reliability, Availability and Serviceability (RAS)

The DS6800 is designed to provide enterprise-class reliability, availability and serviceability by orchestrating its

operations dynamically to improve performance, identify problems before they occur, and take preemptive, corrective action without administrative intervention.

The DS6000 series includes multipathing software designed to provide enhanced data availability through automatic path failover and improved performance through dynamic I/O load balancing across multiple paths.

The DS6800 complements the multipathing software by leveraging the system's four data paths with the system's dynamic data-path operations. The DS6800 uses sophisticated algorithms that monitor existing data traffic to select an optimal path to store and retrieve data from the system. The preferred path operations of the DS6800 can automatically re-route a read or write request from one path to another while the data is in-flight.

The DS6800 enterprise-class storage system has proven reliability and is designed to deliver both high data availability and resiliency. The system's hardware architecture of four data paths to each disk drive can provide data availability and resiliency against single, double and triple failures.

Performance, storage capacity in a compact enclosure

The DS6800 measures 5.25" high and 19" wide, and it weighs approximately 135 lbs. with up to 8TB of storage. Through IBM innovation, the DS6800 system is designed to provide the performance and resiliency previously found in monolithic storage systems that weigh over 2000 lbs and are the size of double-wide refrigerators.

The DS6800 offers impressive performance with over 1600 MBps throughput and over 330,000 IOPS in a space-efficient design. Excelling in throughput and I/O processing, the DS6800 is a good fit for high rate transaction-oriented and bandwidth-intensive applications and can satisfy the needs of performance hungry workloads.

The eight-drive connections of the DS6800 support up to 128 disk drives with the attachment of seven DS6000 disk expansion units, making it well suited to heterogeneous server environments with performance-oriented or capacity-oriented storage needs. By supporting both Fibre Channel and Fibre Channel ATA (FATA) disk drives, a single DS6800 system can address both tier 1–primary, and tier 2–near-line storage requirements.

The system houses up to 16 drives in each model 522 controller or model EX2 storage expansion unit. Each unit is only 5-1/4 inches high—3U of rack space—making the system extremely compact. Additionally, the DS6000 series pricing is intended to match its compact size, offering businesses a low-cost entrance to the powerful DS Family of enterprise-class storage.

Consolidated storage infrastructure

The DS6800 can help you simplify your IT infrastructure by supporting a wide range of servers, both mainframe and open systems, including IBM System z™, System i™, System p™, System x™ and non-IBM platforms running UNIX®, Linux®, and Windows® operating systems.

For IBM System i5™ servers, implementing external storage is made easier with boot from SAN capabilities. The DS6800 can provide external Load Source Unit (LSU), Auxiliary Storage Pool (ASP), and Independent Auxiliary Storage Pool (IASP) connectivity for System i5 servers and its LPARs.

The DS6800 offers performance and scalability capabilities for storage consolidation and clustering applications. Its modular architecture and advanced features are designed to support

on demand environments by helping to enable mainframe and open systems storage to grow as demands increase.

The DS6800 is designed to help consolidate server storage into a centrally managed, shared or storage area network (SAN) environment. With its modular design, the DS6800 system can scale from 292GB up to 64TB of physical storage capacity by adding storage expansion enclosures, each of which can contain up to 16 hard disk drives (HDD). Non-disruptive storage capacity expansion helps businesses maintain high data availability while accommodating rapid data growth.

The DS6800 offers both high-performance, heavy duty-cycle Fibre Channel disk drives in 73, 146 and 300GB sizes and a high-capacity 500GB FATA disk drive for near-line storage applications. By supporting an intermix of drive size, speed and type within a single system, organizations can match their application and usage needs to the disk technology. This capability enables organizations to use a single storage system for implementing a tiered storage strategy.

Support for data integrity and protection

The IBM System Storage DS6000 series offers the latest innovations from IBM in storage infrastructure performance and management, helping enable storage environments to deliver unprecedented data availability. High availability and reliability with a choice of RAID levels, redundant, hot-swappable components, and resiliency features of the DS6800 helps to maintain data availability at enterprise-class levels.

Resiliency features of the DS6800 are designed to deliver powerful, dynamic capabilities to help protect data and prevent failure, not just respond and recover. By using multiple, end-to-end data checking and verification processes during both read and write operations, the DS6800 helps to protect data integrity as data moves through the storage system. IBM Predictive Failure Analysis® and autonomic functions of the DS6800 enable the system to proactively take corrective actions before component failure.

Support for business continuity

The DS6800 features enterprise-class data backup and disaster recovery capabilities. IBM FlashCopy® can create point-in-time copies of data that allow users to have nearly instantaneous access to information on both the source and target volumes. Metro and Global Mirror services can generate and maintain data-consistent copies of data on separate storage systems installed either locally or at a geographically dispersed location. These services are designed to help protect data and to provide failover and failback capabilities to support business continuance strategies and operations.

A company can leverage the interoperability of the DS6000 series copy services with existing DS8000 and/or Enterprise Storage Server installations. The DS6800 can be the source or target storage system of a DS8000 series or Enterprise Storage Server system. As a result, organizations have the capability of implementing a multi-tiered approach for mirroring and backup functions and/or implementing a lower-cost secondary site storage system alternative for disaster recovery.

Support for information lifecycle management (ILM)

Information is the lifeblood of an on demand business. The IBM System Storage DS Family is designed to help organizations construct a multi-tiered storage environment to achieve low storage costs. The DS Family can store frequently accessed or high-value data on higher performance storage volumes and store less frequently accessed data or lower-value data on less costly near-line volumes. In addition, a cost-effective tiered storage environment for DS8000 series or Enterprise Storage Server installations can benefit from the DS6800 system's interoperable copy services that are designed to copy or migrate data from one storage tier to another. Creating test environments is easily accomplished using FlashCopy, Metro or Global Mirror to copy data while avoiding disruption of the production environment.

Centralized storage management

The IBM DS6000 Storage Manager software included with the DS6800 provides an intuitive Web-based GUI for easy configuration and management. The DS6000 Storage Manager software allows administrators to perform system configuration, copy service management and other maintenance functions.

The DS6000 Storage Manager software allows storage administrators to change system settings as well as configure new volumes, define mappings, handle routine maintenance and dynamically add new enclosures and capacity to a system while avoiding interrupting data access.

The DS6000 Storage Manager supplies easy-to-use Express Configuration Wizards to help storage administrators configure and manage storage functions quickly and easily.

In addition, the DS Storage Manager software's management interfaces and commands are common with the DS8000 series and Enterprise Storage Server, so businesses can leverage existing IT administration skills.

The DS6000 series also incorporates Light Path diagnostics and controls on system enclosures. This LED visual alert and control system helps storage administrators identify and repair DS6000 series component problems quickly and without having to use the storage management server. Additional autonomic features such as IBM Predictive Failure Analysis can help administrators take preemptive actions to help keep data protected and available without administrative intervention.

Ongoing management of the entire storage environment can further be simplified with the IBM TotalStorage Productivity Center. The TotalStorage Productivity Center for Disk offers a single interface through which administrators can monitor and manage multiple DS Family as well as non-IBM disk arrays.

Enhanced storage management capabilities

The DS6800 is designed to improve data management and storage system performance. Using the DS6000 Storage Manager, administrators can strategically and dynamically allocate storage capacity to help optimize utilization and help reduce hardware and storage management costs. Instead of purchasing RAID controllers for mainframe and System i5 servers and other storage devices for UNIX, Linux and Windows servers, the DS6800 is designed to support heterogeneous server environments. The DS6800 is a powerful, flexible and affordable disk-based system with enterprise-class resiliency and management designed to meet the ever changing storage needs of business.

Additional tools to help manage storage

The DS6800 is supported by a variety of IBM storage software offerings. Available separately, IBM TotalStorage Productivity Center software takes storage management to a new level. This collection of software provides a single administrative interface for the DS6000, DS8000 and many other individual IBM storage systems, and non-IBM disk systems that are also based on open SMI-S interfaces.

The IBM System Storage Proven program is designed to identify and test third-party products for interoperability with the DS6800 and other IBM storage products. Products in this program have been tested to help reduce or eliminate time-consuming installation and support issues. For more information, please visit **ibm.com**/server/storage/proven.

Enterprise-class service and support

The IBM System Storage DS6000 series includes IBM installation and a one year, 24x7, IBM onsite, same-day-response warranty on both hardware and software. Additional services for maintenance, configuration,

data migration and other storage management needs are available to help organizations optimize their storage infrastructure.

The DS6800 provides system status, problem notification and remote service via either telephone modem or a virtual private network (VPN) connection. This call-home capability helps IBM respond quickly and proactively. It also helps reduce or eliminate the need for an organization to place a service call. In addition, this problem notification can expedite diagnosis and repair of failed hardware or 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 DS6800, for the duration of the financing term. IBM provides fast, simple and responsive IT financing with highly competitive rates, flexible terms, predictable costs and fast approval process. For more information please visit **ibm.com**/financing

IBM System Storage DS6800 at a glance

Characteristics	DS6800
Model	1750-522
RAID controller	Dual active
Processor	IBM Power PC® 750GX 1 GHz
Cache	2GB cache per controller 4GB cache per system
Battery backup for cache	72 hours
Host ports	8
Host interface	Fibre Channel / FICON
Storage ports	8
Maximum disk drives supported	128 (with expansion enclosures) 16 disk drives per enclosure, including controller
Disk drive sizes	73GB (15K rpm) 146GB (10K rpm) 146GB (15K rpm) 300GB (10K rpm) 500GB FATA (7.2K rpm)
Maximum physical storage capacity	38.4TB (using all Fibre Channel disk drives) 64TB (using all FATA disk drives)
RAID levels	5, 10
Power supplies and fans	2 per enclosure
Rack support	19" rack mountable
Form factor	3U (5-1/4" high)
Point-in-time copy	FlashCopy—optional software
Mirroring	Metro Mirror, Global Mirror, Global Copy—optional software Interoperable with DS8000 series, ESS 800 and ESS 750
Software for System z	Parallel Access Volumes—optional software
Management software	IBM DS6000 Storage Manager, IBM TotalStorage Productivity Center—Lite—both are no charge, included with system
Multipath software	Subsystem Device Driver—no charge download
Warranty	1 year, 24x7, same day response, parts and labor—includes both hardware and software Optional warranty and maintenance upgrades are available

For more information

Contact your IBM representative or IBM Business Partner or visit

ibm.com/storage/ds6000

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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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