IBM SYSTEM STORAGE DCS3860

Gain fast, efficient and scalable storage for high-performance computing environments

Highlights

- Expand performance, flexibility and operational efficiency with scalable, high-density (HD) storage systems

- Simplify data protection management and automate recovery tasks with Dynamic Disk Pooling (DDP)

- Help ensure data integrity with support for the T10 Protection Information (T10-PI) standard

Every day, massive volumes of data are created around the world. This data comes from everywhere: sensors used to gather climate information, posts to social media sites, digital pictures and videos, purchase transaction records and cell phone GPS signals, to name a few. To effectively leverage this big data, organisations need fast, easy access to applications – backed by high-performance storage architectures. At the same time, they need ways to improve operational efficiency while maintaining the same data centre (DC) footprint, quality of service (QoS) and high availability (HA).

The IBM® System Storage DCS3860 storage system delivers the performance and scalability organisations need to succeed in this new era of big data. Designed for high-performance computing applications, the DCS3860 system supports up to 60 drives in just 4U of rack space – and it can scale up to 360 drives with the attachment of five expansion units. This HD system also helps make the most of today's IT budgets by increasing capacity while reducing the storage footprint, power consumption and related operational costs.

The DCS3860 system provides a versatile, easy-to-use solution for storage area network (SAN) deployments. It works as a cost-effective, fully integrated complement to IBM Power Systems servers for a wide variety of intensive computing environments.

Increases availability with a next-generation performance controller

The DCS3860 storage system includes a next-generation performance controller to deliver outstanding system performance. The DCS3860 system is well suited for use in both general-purpose and high-performance computing (HPC) environments.

The DCS3860 storage system is built on a powerful hardware platform that features two 2.2 Gigahertz (Ghz), 6-core Ivy Bridge Intel processors for up to 24 gigabytes (GBs) cache memory, as well as two host interface cards (HICs) with four 12 gigabits per second (Gbps) serial attached SCSI (SAS) ports HICs, four 10 Gbps Internet small computer system interface (iSCSI) ports HICs or four 16 Gbps Fibre Channel (FC) ports HICs. Drive density increases with two 6 Gbps SAS ports per expansion unit.

Provides intuitive storage management without sacrificing control

IBM System Storage DS Storage Manager software combines robustness with ease-of-use – two attributes not commonly found together in entry to midrange storage systems. With its extraordinary dynamic capabilities and intuitive graphical user interface (GUI), System Storage DS Storage Manager supports on-the-fly reconfigurations without interrupting storage system input/output (I/O).

In addition, System Storage DS Storage Manager has fully integrated features that allow administrators to choose the data protection method that best meets their organisational requirements:

• For highly secure implementations, administrators can use new password settings to designate users who can monitor the system, but are unauthorised to make any changes
• There is support for up to 512 partitions at no additional cost, which enables effective storage consolidation and virtualisation.

The DCS3860 system helps to reduce operational costs as your storage requirements grow. With up to 60 SAS drives in just 4U of rack space, improving storage density for capacity-intensive applications has never been easier.

Supports distributed, enterprise-wide and file-based storage

When combined with IBM Spectrum Scale, the DCS3860 system becomes a holistic, policy-driven, shared-disk file management solution that can provide faster, more reliable access to a common set of file-based data. IBM Spectrum Scale is designed for advanced business analytics, big data or technical computing applications that require application access to very large data files or very large numbers of data files.

Enables continuous uptime

The DCS3860 storage system ensures not only high-speed data access, but continuous access to data, as well. It carries on the IBM legacy of HA system design with redundant components, automated path failover and extensive online administration capabilities that maximise computational efficiency and productivity, helping to ensure there is virtually no single point of failure. This design helps keep these environments universally productive. DDP technology plays an important role in ensuring availability because it virtually eliminates maintenance worries by self-tuning, rebalancing data and maintaining consistent performance even during drive failures.

Helps ensure data integrity with T10 Protection Information

By enabling T10 PI between the storage controller and its disk drives, administrators can help ensure data integrity at the drive level. T10 PI requires the use of PI-formatted disk drives. The drives are formatted at 520 bytes per sector, with 512 bytes for user data and 8 bytes for integrity metadata. The drives can be used with or without the T10 PI function enabled and can be intermixed within a storage enclosure or across storage systems with non-PI formatted drives. T10 PI can be used with any Redundant Array of Independent Disks (RAID) level. To use the T10 PI function, all drives within the RAID array must be PI-formatted drives.

Lowers your total cost of ownership

The DCS3860 storage system delivers scalable performance in a cost-effective system that provides the best value for your investment and protects your budget over time. Key features that can improve your overall storage efficiency include:

- High capacity at an affordable price – and it can easily scale with expansion units for even more performance at a low cost
- Advanced administration features in System Storage DS Storage Manager, which help reduce storage complexity and save time for administrators, enabling them to focus on more strategic activities
- DDP, the self-healing technology embedded within the DCS3860 system, helps ensure consistent performance in the event of a drive failure, helping to eliminate the potential costs of downtime.

Why IBM?

IBM is committed to helping you achieve measurable business value with the right combination of storage products to meet your needs. A market leader in the storage industry, IBM offers innovative technology, open standards, excellent performance and a broad portfolio of storage-proven software, hardware and solutions offerings. Technology and services from IBM help provide infrastructures to securely manage information and can open the door to new insights and innovation for your business.

IBM System Storage DCS3860 at a glance

Models	DCS3860 storage system (1813-96C)
Expansions	DCS3700 expansion unit (1818-80E) EXP3800 expansion unit (1813-80E)
RAID controller	Dual-active, intelligent controllers
Cache per controller	12 GB
Host interface	12 Gbps SAS, 10 Gbps iSCSi, 16 Gbps FC
Drive interface	6 Gbps SAS
Supported drives	3.5-inch, 6 Gbps SAS drives: 4 terabyte (TB), 6 TB, 8 TB 7.2k rpm nearline HDD
RAID levels	0, 1, 3, 5, 6, 10 and DDP
Storage partitions	512
Maximum drives supported	360
Maximum raw capacity	2.88 petabyte (PB)
Fans and power supplies	Two each per enclosure
Rack support	Slim 4U, 19-inch rack mount enclosure
Management software	System Storage DS Storage Manager
Warranty	One-year warranty. On-site service 24x7, six-hour average and same-day response
Size	Fits in a standard 1,000 mm cabinet
Environment	Operating temperature range: 10°C – 35°C (50°F – 95°F)
Heat output	3,791 BTU/hr.
Supported systems	Power Systems servers
Operating systems supported	Linux, IBM AIX, VIOS, Microsoft Windows

IBM System Storage EXP3800 and DCS3700 expansion units at a glance

Models	EXP3800 expansion unit (1813-80E)	DCS3700 expansion unit (1818-80E)
Drive interface	6 Gbps SAS	6 Gbps SAS
Supported drives	3.5-inch, 6 Gbps SAS drives: 4 TB, 6 TB, 8 TB 7.2k rpm nearline HDD	3.5-inch, 6 Gbps SAS drives: 4 TB, 6 TB, 8 TB 7.2k rpm nearline 2.5-inch, SSD: 400 GB
Maximum drives supported	60 per enclosure	60 per enclosure
Fans and power supplies	Two each per enclosure	Two each per enclosure
Rack support	Slim 4U, 19-inch rack mount enclosure	Slim 4U, 19-inch rack mount enclosure
Management software	N/A	N/A
Warranty	One-year warranty. On-site service 24x7, 4-hour average and same-day response	One-year warranty. On-site service 24x7, 4-hour average and same-day response
Size	Fits in a standard 1,000 mm cabinet	Fits in a standard 1,000 mm cabinet
Environment	Operating temperature range: 10°C – 35°C (50°F – 95°F)	Operating temperature range: 10°C – 35°C (50°F – 95°F)
Heat output	2,736 BTU/hr.	2,736 BTU/hr.

For more information

To learn more about IBM System Storage DCS3860, please contact your IBM representative or IBM Business Partner (BP), or visit: **ibm.com**/systems/storage/disk/dcs3860

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