Put data to work with IBM Power servers and new DS8880 data systems

Unparalleled integration with IBM DS8880 storage for open innovation

Highlights

- Enable your data center for systems of insight and cloud environments with unparalleled integration with IBM® Power® servers

- Boost performance up to two times for faster transaction processing and real-time analytics with new architecture and flash configurations

- Deliver 24x7 operations with a solution designed for seven-nines availability

- Streamline operations and reduce cost with next-generation data systems in a wide range of capabilities

- Optimize performance and reduce infrastructure costs with sophisticated flash configurations

Deploying enterprise servers without fully integrated storage data systems can result in a piece-parts approach that falls short of what a truly integrated solution can provide. A better approach utilizes storage designed from the ground up to leverage—and extend—the mission-critical performance, uncompromising availability and security capabilities built into today's high-end servers.

IBM DS8880 is a family of world-class, hybrid data systems designed to support the most demanding enterprise workloads with the critical performance, extreme reliability and highest levels of security you have come to expect from IBM.

What sets the DS8880 family apart from other enterprise storage systems is the special integration with IBM Power servers, for a solution that can deliver extraordinary value through integration and synergy—not just simple interoperability.

Mission-critical performance for the most demanding applications

Designed to support the critical applications that run your business, DS8880 offers tremendous performance for transaction processing and real-time analytics. DS8880 offers sophisticated flash configurations to

accommodate your advanced performance needs. Additionally, this new family of systems supports a variety of self-tuning features—such as intelligent caching algorithms, automated quality-of-service (QoS) management and advanced storage tiering that can even coordinate optimal data placement between itself and the Power servers attached to it. These self-optimizing performance capabilities help organizations gain the efficiencies of consolidating workloads on a single storage system while increasing performance, QoS and high availability of separate systems.

Automated tiering for flash optimization

DS8880 increases and optimizes performance using several generations of IBM Easy Tier® that maximize the value of higher-cost flash storage by relocating only the most frequently accessed data to flash drives. In addition to automatically migrating data between storage tiers, Easy Tier optimizes performance within each tier—reducing hotspots or perfor-mance skewing for single-tier configurations. By automating data placement across the system to meet performance objec-tives, Easy Tier also helps manage costs by identifying and moving less frequently accessed data to the most economical drive tier without sacrificing the performance of your critical applications. The latest generation of Easy Tier adds several capabilities, including Easy Tier Application for application-driven data placement. This capability delivers an application programming interface (API) that software developers can use to have their applications advise Easy Tier on where to place data on the storage system. The benefit is more effective data placement to meet performance and cost objectives.
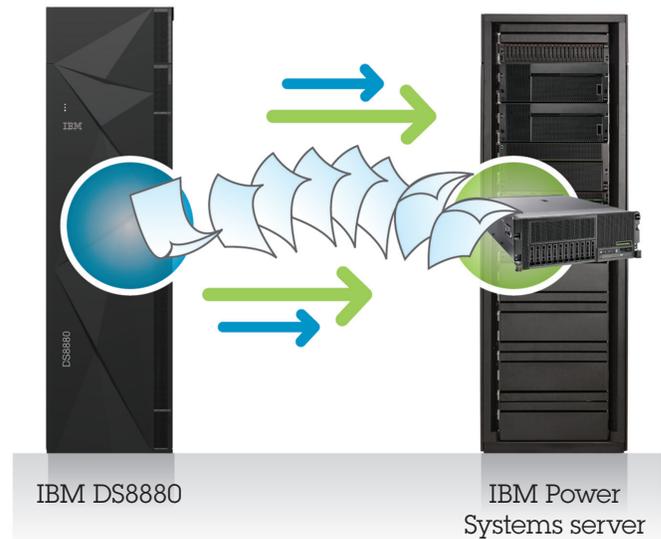
I/O Priority Manager for improved QoS

Additionally, the DS8880 family of systems delivers automated QoS management with I/O Priority Manager—a function that constantly monitors I/O performance and prioritizes access to DS8880 resources to meet administrator-defined QoS levels for the various applications supported by the system.

I/O Priority Manager can automatically determine when more important applications should be given priority over other applications that may be competing for the same storage resources—helping meet performance targets—again without requiring operator intervention.

Accelerated workloads with IBM Easy Tier

IBM DS8880

IBM Power Systems server

Providing uncompromising availability for critical Power environments

DS8880 is designed to help address the needs of dynamic enterprise environments requiring the highest levels of reliability. It is designed to support dynamic system changes such as online system microcode updates and online hardware upgrades, as well as redundant, hot-swappable components and sophisticated data integrity features to help support continuous operations.

In addition to its exceptionally resilient architecture, DS8880 offers an array of world-class functions for data backup, remote mirroring and disaster recovery. IBM FlashCopy® addresses a key requirement for continuous data availability by quickly and efficiently creating point-in-time copies without impeding the application response time. Special integration with IBM Spectrum Protect™ Snapshot software provides fast application-aware backups and restores through DS8880 FlashCopy. And while IBM Spectrum Protect Snapshot supports Power servers running IBM AIX® and other distributed server platforms, users deploying Power servers running the IBM i operating system can use the Full System FlashCopy Toolkit to simplify the FlashCopy process in IBM i environments.

More advanced local and long-distance mirroring solutions are available with the Metro Mirror and Global Mirror family of offerings that are designed to ensure critical applications are available during planned and unplanned outages. Metro Mirror is designed to provide a no-data-loss remote mirroring solution for distances up to 300 kilometers (186 miles); Global Mirror can reduce data loss at the recovery site to as low as three seconds or less at virtually any distance. The Metro/Global Mirror option combines these two capabilities to support various multi-site configurations for added protection. And with Multiple Target Peer-to-Peer Remote Copy (MT-PPRC), organizations can have two secondary mirror systems with different configuration options for industry-leading disaster recovery and seven-nines[1] availability.

Storage and server synergy

IBM Power Systems server

IBM DS8880

World-class data systems for IBM Power environments

Mission-critical
performance

Uncompromising
reliability

IBM DS8880

Unique integration
and synergy

Efficiency and
optimization

Business-critical applications are often configured into a cluster to help provide load balancing and protection in case of a server outage. IBM PowerHA® SystemMirror® is a clustering solution for Power servers that also has the ability to automate the management of DS8880 mirroring functions. This integrated business continuity solution combines storage-based data replication and server-based clustering to protect applications against potential disruptions, including site failures.

HyperSwap integration for seven-nines availability
Special integration with the IBM PowerHA HyperSwap® solution also enables nonstop availability for critical applications running in the server cluster by protecting them from outages.

If the storage goes offline, for example, the server establishes an immediate connection to a mirrored DS8880 to minimize disruption to the application. This unparalleled integration provides a superior level of business continuity for mission-critical applications and is designed to provide the same level of seven-nines availability delivered with IBM z Systems™ HyperSwap integration. Open HyperSwap is another method of doing this, but it leverages the management capabilities of IBM Copy Services Manager (a new tool built into TotalStorage Productivity Center for Replication).

Protecting against threats with advanced security

DS8880 provides extensive security capabilities to fully protect the data at the heart of your Power environment. With features such as advanced role-based administration, tamper-proof audit logging, local and remote authentication support, government-grade Internet security, and multi-tenancy management, the system provides the levels of protection necessary to guard against increasingly sophisticated—and increasingly severe—threats to the organization and its data. Features such as the T10 standard data integrity field (DIF) have been offered by DS8000® systems for many years, and now it is supported by DS8880 systems to enable end-to-end data integrity protection from the application or host bus adapter.

IBM Full Disk Encryption drives are standard, and each drive includes its own encryption engine, enabling full encryption with no performance degradation even as storage capacity is added. The solution includes the standards-based IBM Security Key Lifecycle Manager software to help simplify management with full support for communication between third-party key managers across the enterprise.

Simplifying management to support large Power environments

DS8880 includes powerful management capabilities that can help IT administrators more effectively control their storage environments as capacity grows. The IBM DS8880 Manager interface was inspired by the acclaimed IBM XIV® system graphical user interface (GUI) and includes intuitive navigation, streamlined configuration processes and helpful links to video tutorials with pages that load in less than a second. In addition, the GUI provides dynamic and customizable views, as well as interactive menus, tabs and charts, helping make administrators more productive. DS8880 also supports a command-line interface (CLI) and a Storage Management Initiative Specification-conformant (SMI-S) API.

Easy Tier and other self-tuning features simplify management further and accommodate real-time workload fluctuations, enabling administrators to easily add and delete storage capacity, dynamically expand and shrink volumes to address sudden spikes in demand and react to other environmental changes. DS8880 thin provisioning also helps significantly reduce the time administrators spend provisioning new storage while keeping applications online—a key requirement for mission-critical environments.

Why IBM?

DS8880 is an ideal choice for consolidating your IBM enterprise server environments. Powerful self-optimizing features, such as Easy Tier and I/O Priority Manager, combined with performance and extreme availability features that are integrated with IBM Power server clustering capabilities, can help you get the most out of your Power server environment. With proven high-end functionality, the flexibility to support an extensive variety of workload types, storage consolidation and performance optimization can now be a reality. DS8880 delivers the systems integration and synergy that can drive storage to new levels of performance, uncompromising availability and high business value.

For more information

To learn more about IBM DS8880, contact your IBM representative or IBM Business Partner, or visit: **ibm.com**/DS8000

Additionally, IBM Global Financing can help you acquire the IT solutions that your business needs in the most cost-effective and strategic way possible. For credit-qualified clients we can customize an IT financing solution to suit your business requirements, enable effective cash management, and improve your total cost of ownership. IBM Global Financing is your smartest choice to fund critical IT investments and propel your business forward. For more information, visit: **ibm.com**/financing