

BROCADE PERFORMANCE MANAGEMENT SOLUTIONS



SOLUTIONS

Managing and Optimizing the Performance of Mainframe Storage Environments

HIGHLIGHTS

- Manage and optimize mainframe storage performance, while gaining insight into disk subsystem health and performance issues
- Predict the performance impact of changes to the storage environment
- Optimize current and future disk subsystem investments
- Gain the ability to evaluate the benefits of FICON® migration and other technology investments
- Receive best-practice recommendations for improving the performance of mainframe storage infrastructures and SANs
- Simplify the complexity of accessing, protecting, migrating, and storing data on mainframe systems

IT organizations responsible for maintaining business-critical mainframe infrastructures need the right tools, experience, and expertise to keep their enterprises running smoothly. Unfortunately, these organizations sometimes lack the detailed information needed to maintain optimal performance in their mainframe storage infrastructures.

Without sufficient information, it is difficult to conduct capacity planning or predict the impact of FICON® migration and other changes. Organizations therefore need additional performance data to better manage and analyze their storage environments—from identifying performance bottlenecks to tracking the utilization levels of disk subsystem processors, channels, host adapters, and RAID ranks.

Brocade® can help organizations overcome these and other challenges as they optimize their mainframe storage environments. Leveraging experience gained from more than 25 years of mainframe storage networking implementations, Brocade Services professionals can design comprehensive solutions uniquely tailored to specific requirements and performance management goals.

Using the IntelliMagic suite of software tools, Brocade Services can provide the data and insight that organizations need to more effectively manage mainframe storage

performance, as well as optimize disk subsystem investments and fine-tune z/OS tape workloads. Each IntelliMagic product offers innovative functionality designed to solve specific performance management challenges:

- **RMF Magic:** For greater visibility into z/OS environments, including storage, replication, and FICON performance
- **Disk Magic:** For disk subsystem performance analysis and for evaluating upgrade scenarios
- **Batch Magic:** For tape and batch window tuning and capacity planning

Brocade Services helps organizations select, install, and configure the IntelliMagic solution that best meets their needs. In addition, Brocade Services offers three services designed to help organizations better understand their data center fabric environments and improve performance through best-practice recommendations:

- Brocade Mainframe Storage I/O HealthCheck Services
- Brocade Assessment Services
- Brocade Implementation and Management Services

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BROCADE SERVICES FOR INTELLIMAGIC

Brocade Services helps organizations get the most from IntelliMagic products and meet their storage performance management goals. As part of the Brocade Performance Management Solutions, Brocade provides the following services:

- Brocade Mainframe Storage I/O HealthCheck Services
- Brocade Assessment Services
- Brocade Implementation and Management Services

Brocade Mainframe Storage I/O HealthCheck Services

Brocade Mainframe Storage I/O HealthCheck Services are designed to provide organizations with the detailed information they need to build and maintain an optimally performing mainframe storage infrastructure. Leveraging experience gained from more than 25 years of mainframe storage networking implementations, Brocade mainframe experts analyze current challenges and strategic objectives, collect information from systems and personnel, perform a detailed analysis of the data, and present their findings.

Brocade experts use IntelliMagic software tools to collect detailed performance statistics from disk and/or tape devices. After analyzing this data, they create a comprehensive report that provides quantifiable data and best-practice recommendations to address specific challenges.

Brocade also offers a more focused FICON Implementation Service designed to connect mainframe systems through FICON. As part of this service, Brocade experts review the storage infrastructure, the replication capabilities, and the hosts that need to be attached. Brocade can then design, implement, and validate the solution—migrating direct-attached FICON links to Brocade switches, configuring the FICON hardware and software, and establishing functional FICON links between the Brocade switches and attached devices.

Brocade Assessment Services

Brocade Assessment Services focus on diagnosing the performance, reliability, manageability, and scalability of data center environments. Brocade Services experts identify problem areas, evaluate their potential impact, and provide recommendations for improvements. Assessment services provide baseline information to accurately scope work, determine risks, and establish an engagement plan within particular technical constraints.

Brocade Implementation and Management Services

Brocade Implementation and Management Services help organizations install, connect, and manage their data center environments. All of the services are designed to minimize the time, cost, and risk of deployment, optimization, and management. Brocade Services experts assess the current environment by detailing the project scope and prerequisites, operational impact, resource utilization, and risk/mitigation plan, and then document the new environment.

RMF MAGIC

Managing and understanding mainframe storage performance is critical. Yet many organizations have discovered that their existing performance management tools are no match against an increasingly complex storage environment. As a result, they cannot generate the types of metrics needed to assess, let alone manage, mainframe storage performance.

RMF Magic is a software tool that provides visibility into storage, replication, and FICON performance. It processes Common Message Format (CMF) or Resource Measurement Facility (RMF) data to generate the metrics organizations need to understand and optimize workload performance, even inside disk subsystems. RMF Magic also provides deep insight into System z storage performance.

Because it requires no programming, RMF Magic enables organizations to focus on analysis rather than coding. In addition, it creates new information from existing data and generates graphical views of performance data. Organizations can use RMF Magic to:

- Run disk subsystem health checks for early warnings about I/O performance degradation, streamlining diagnosis and root-cause analysis
- Analyze performance from data set to disk subsystem over a period of time in order to optimize workload distribution across resources
- Determine whether tuning I/O load distribution will yield additional capacity
- Evaluate FICON health

A Holistic View of Disk Subsystem Activity

RMF Magic processes RMF data originating from one or more z/OS servers to extract and consolidate configuration and I/O load data by physical disk subsystem. Organizations receive a disk-centric view of disk subsystem I/O load and performance, regardless of the number of servers or Parallel Sysplexes to which they are attached. As a result, they gain detailed insight into subsystem performance and areas that require more focus.

Simplified Use on z/OS or PCs

To provide greater flexibility, RMF Magic can run as a batch job on z/OS or on a Windows PC. In addition, organizations can use RMF Magic to run interactive data analysis on their PCs. Using dashboard graphs, they can easily see the difference between recurring I/O load peaks and performance anomalies—without having to write technical database queries.

DISK MAGIC

Understanding disk subsystem performance becomes more complex every year as organizations must consider how technologies such as high-capacity disks, high-capacity logical volumes, RAID schemes, Fibre Channels, synchronous and asynchronous copy services solutions, and cache size options will affect service levels for their various workloads.

Disk Magic is a powerful, versatile disk subsystem performance analysis and planning tool that can help IT organizations understand how performance for specific workloads will change under various growth and/or hardware configuration scenarios. It displays current and expected response times, component utilization levels, and throughput limits for I/O loads and server configurations. As a result, organizations can use Disk Magic to confidently select the most cost-effective configuration options.

With Disk Magic, organizations can:

- Predict how moving workloads to different tiers of storage will affect response times and I/O loads
- Run disk subsystem health checks to understand and track utilization levels
- Assess the result of consolidating multiple disk subsystems
- Predict the performance benefit gained from adding cache, channels, or new technologies
- Assess whether energy-efficient, high-capacity drives will support required service levels
- Monitor and model z/OS storage performance to identify poorly performing volumes

Major Vendor Support

Disk Magic supports disk subsystems from all major storage vendors, whether those subsystems are attached to open systems servers, System z, System i, or a combination thereof. It also supports Transaction Processing Facility (TPF).

Automated Input of I/O Workload Data

Disk Magic features automated procedures to enter I/O workload data, using reports created by standard products such as iostat for UNIX and Linux, Perfmon for Windows, and Performance Tools for System i. (For System z, IntelliMagic's RMF Magic can create automated input files based on RMF or CMF data.)

Easy Access to Data

Disk Magic runs on a Windows PC, and no connection to the actual disk subsystem is needed. Organizations can view results via the graphical user interface and in text reports or charts.

Accurate Scenario Modeling

Disk Magic can create a mathematical representation of the current storage environment. Using this as a baseline, organizations can easily model the effects of changes, including increased I/O load, replacement of ESCON with FICON, the movement of workloads to another disk subsystem technology, and the performance of RAID 10 versus RAID 5.

Storage Virtualization Planning

Organizations can use Disk Magic to plan and monitor IBM SAN Volume Controller configurations, including back-end disk subsystems. By using Disk Magic's standard I/O load profiles or entering current workload measurements, they can predict what will happen if a SAN Volume Controller is added to the configuration.

BATCH MAGIC

Tape remains an important medium for storing large amounts of information. Recent innovations in virtualization have made tape storage easier and more economical to use, enabling IT organizations to maintain a secondary copy on a remote site without having to transport tapes. As a result, organizations must ensure that tape hardware investments are well planned and intelligently mapped.

A powerful application designed for z/OS tape and batch window tuning and capacity planning, Batch Magic can help organizations optimize the use of tape libraries, monitor the load on virtual tape systems, and better understand tape workloads.

Batch Magic efficiently consolidates information about tape usage across Logical Partitions (LPARs), even from several Parallel Sysplexes, providing a comprehensive overview of all tape activity. It can analyze weeks of System Management Facility (SMF) records to show tape workload behavior and patterns over time.

Organizations can use Batch Magic to:

- Report on overall tape workload performance
- Tune the tape and batch window by optimizing application scheduling
- Easily monitor tape usage over time and analyze tape performance trends
- Plan for new tape hardware options, such as Remote Copy and FICON
- Evaluate the benefit of upgrading to FICON

Efficient SMF Data Consolidation from All LPARs

Batch Magic provides a consolidated view on all tape-related activity, regardless of the number of LPARs or Parallel Sysplexes to which the tape libraries are attached. It analyzes the tape workload at both the application level and the hardware level.

Simplified Use on Both z/OS and Windows Platforms

Organizations can run Batch Magic as a batch job on z/OS or interactively on a Windows PC. In addition, organizations can view the output as printed reports, or use the Batch Magic Windows application for interactive reporting and graphing on the PC.

Flexible Workload Definitions

Organizations can create their own workload grouping criteria for Batch Magic to report on. They can see the scratch and specific mount counts and rates, the read and write megabytes, volume statistics, and many other metrics for each workload. Sample workload grouping definitions distinguish the major tape applications based on data set names, providing useful reports.

Intuitive Graph and Table Reporting Options

Batch Magic reports are in a tabular format on the mainframe, and are created directly in Excel by the Windows version of Batch Magic. Organizations can select from numerous report options to create a variety of graphs showing aggregate or detail-level data.

**MEETING STORAGE PERFORMANCE
MANAGEMENT GOALS**

By combining mainframe and data center expertise with the power of IntelliMagic tools, Brocade Services delivers solutions that help organizations align their mainframe infrastructure with strategic corporate objectives—now and in the future.

MAXIMIZING INVESTMENTS

Brocade and its partners offer complete data management solutions to meet a wide range of technology and business requirements. These solutions include education and training, services, and support to help optimize data management investments. For more information, contact an authorized Brocade sales partner or visit www.brocade.com.

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