Disk Magic

Optimize Current and Future Disk Subsystem Investments

Understanding Disk Subsystem performance becomes more complex every year. Today, a storage specialist has to take into consideration how technologies such as high capacity disks, high capacity logical volumes, RAID schemes, Fibre Channels, Synchronous and Asynchronous Copy Services solutions, cache size options, and more will affect service levels for their various workloads.

Disk Magic is a powerful and versatile Disk Subsystem performance analysis and planning product.

Using Disk Magic will provide you with more knowledge about how performance for your specific workloads will change under various growth and/or hardware configuration scenarios.

Disk Magic shows current and expected response times, component utilization levels, and throughput limits for your I/O load and server configurations so you can always know how close you are to overloading any part of your configuration.

When planning an upgrade, Disk Magic enables you to select the most cost-effective configuration options with confidence without being dependent only on vendor supplied information and projections.

Disk Magic has been used by vendors at thousands of sites around the world to analyze and predict disk subsystem performance since 1994. It is now also used by data centers themselves to evaluate growth and acquisition scenarios for their specific I/O workloads. Disk Magic supports all popular disk subsystem configurations from EMC, HDS, HP and IBM, attached to z/OS, i/OS, TPF, UNIX, Linux and Windows hosts.

Our customers use Disk Magic to:

▶ evaluate the effect on response times of moving workloads to different tiers of storage

▶ understand and track the utilization levels of Disk Subsystem processors, channels, host adapters, and RAID ranks

▶ assess the performance impact of moving from Fibre to FATA disk drives

▶ compare bandwidth requirements and response time impact of various copy services solutions

▶ assess the result of consolidating multiple older Disk Subsystems in one new Disk Subsystem

▶ analyze if critical applications run better on alternative configurations, for example RAID-10 or RAID-5

▶ predict the performance benefit gained from increasing cache size, adding channels, etc.

▶ assess whether energy efficient high capacity drives will support service levels demanded by business needs

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Disk Magic Applications

▶ **Disk Subsystem Health Check**
When doing a health check of your Disk Subsystems, Disk Magic shows the utilization level of internal components such as internal data buses and processors, information that is critical in determining the safety margins at which you are operating.

▶ **Storage Capacity Planning**
When making investment decisions, you need to know whether the current Disk Subsystems will be able to absorb the expected load increase. With Disk Magic you can explore the space left for growth. Disk Magic will tell you which Disk Subsystem component is going to be the bottleneck. This allows you to explore the feasibility of a partial upgrade, workload redistribution, or complete Disk Subsystem replacement.

▶ **Evaluate the Effect of New Technology**
Use Disk Magic to explore to what degree your business could benefit from new technology options. For instance, do you need to use 15k RPM Fibre disk drives for your specific I/O load, or could you benefit from more economical FATA technology?

▶ **Assess the Impact of Copy Services**
Disk Magic allows you to plan and monitor what effect copy services have on response times and on the utilization of the Disk Subsystem. It also calculates what the inter-site bandwidth requirements are.

▶ **Monitor and Model z/OS Storage**
For z/OS workloads, Disk Magic offers a cross-sysplex view of current performance at Disk Subsystem, Logical Subsystem or Logical Volume level. Volume level presentation makes it easy for you to identify volumes with unusual or unwanted performance. Configuration changes can be modeled to explore possible improvements.
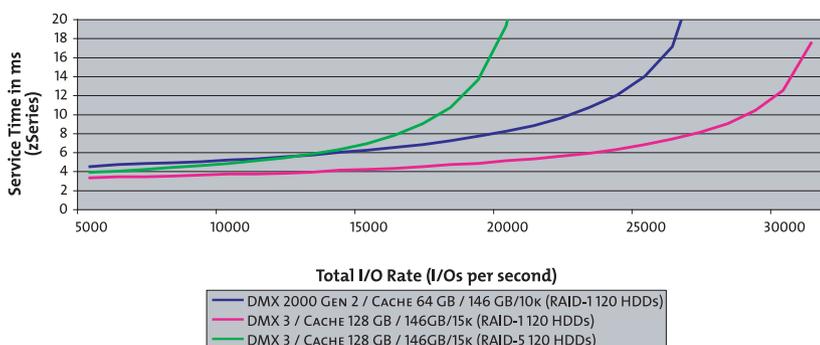
▶ **Monitor and Model non-mainframe Storage**
In a consolidated disk configuration many servers may be attached to the same Disk Subsystem. Disk Magic shows I/O load and response time predictions for the whole Disk Subsystem, or by server. For i/OS, Disk Magic can also show data at the level of Auxiliary Storage Pools. This allows you to predict what would happen if certain ASPs would be moved to a different disk type, while retaining the other workload on the current disks.

◀ **Plan for Growth**
Use the Graph function to determine the growth potential for different configurations. This chart shows how the service time will develop for growing I/O load.

Comparing Configurations with different HDD and RAID types

Service Time in ms (zSeries) vs Total I/O Rate (I/Os per second)

— DMX 2000 Gen 2 / Cache 64 GB / 146 GB/10k (RAID-1 120 HDDs)
— DMX 3 / Cache 128 GB / 146GB/15k (RAID-1 120 HDDs)
— DMX 3 / Cache 128 GB / 146GB/15k (RAID-5 120 HDDs)

Disk Magic Features

▶ Supports all major vendors

Disk Magic supports Disk Subsystems from all major vendors, whether they are attached to Open Systems servers, zSeries, iSeries, or a combination thereof. Even TPF is supported. Disk Magic analyses data for Disk Subsystems from EMC, HP, HDS, IBM and SUN/STK.

▶ Automated Input

Disk Magic features automated procedures to enter I/O workload data, using reports created by standard products like iostat for UNIX and LINUX, Perfmon for Windows and Performance Tools Reports for iSeries.

For zSeries, IntelliMagic's product RMF Magic can create automated input files based on RMF or CMF data. RMF or CMF data can also be entered manually.

▼ Utilization of Disk Subsystem Components

Disk Magic shows the current and expected utilization levels of various components of the Disk Subsystems

▶ Data Presentation

Disk Magic runs on a Microsoft® Windows PC. No connection to the actual Disk Subsystem is needed to perform any of the functions of Disk Magic. Results are presented in the Graphical User Interface and in text reports or charts.

▶ Modeling Scenarios

After data input, Disk Magic interprets the data to create a validated model: a mathematical representation of the current environment.

Once this starting point has been set, it is very easy to model the effects of changes: increased I/O load, replacement of ESCON with FICON, moving workloads to other Disk Subsystem technology, the performance of RAID 10 versus RAID 5, and many more of these types of scenarios.

▶ Storage Virtualization

You can use Disk Magic to plan and monitor IBM SAN Volume Controller configurations including the backend Disk Subsystems. You can use Disk Magic's standard I/O load profiles or you can enter current workload measurements and predict what will happen if you add a SAN Volume Controller to your configuration.
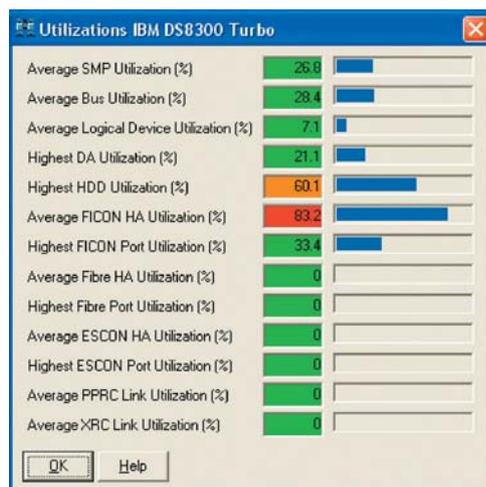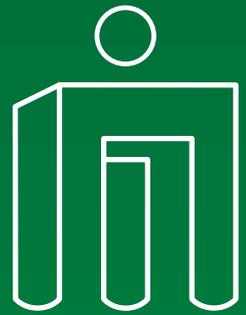
▶ Tutorial and Extensive Online Help

The Disk Magic distribution package includes a Learning Guide, which has proven to be a very effective tutorial for training new Disk Magic users. The product also includes online help with a number of "How-to" chapters that guide the user through the capabilities of the product.

About IntelliMagic

IntelliMagic is known for its expertise in I/O performance measurement and management. Our products give clear insight in storage subsystem performance and capacity planning.

IntelliMagic enables you to use your hardware efficiently, save cost and increase end-user satisfaction.

IntelliMagic's products use advanced algorithms for data analysis and performance prediction, in combination with an effective, flexible and intuitive user interface. Users are guided safely through valid problem solution scenarios. It is this powerful combination that justifies the 'Magic' suffix in the name of each of our products.

Our goal is complete customer satisfaction. Responsiveness to customer questions and a customer-first mentality are very important to us.

We strive towards long-term relationships with our employees, customers, and suppliers.

Other products from IntelliMagic are:

▶ **RMF Magic**

RMF Magic is a superior performance analysis product for z/OS Disk Subsystems which includes a dashboard for a daily health check.

▶ **Capacity Magic**

Capacity Magic offers a graphical interface that computes the usable capacity for any disk and RAID type combination on a Disk Subsystem.

▶ **Batch Magic**

Batch Magic is a powerful application for tape and batch window tuning and capacity planning. It enables you to understand all aspects of your z/OS tape workloads.

Contact us ▼

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