Disk Magic is a powerful and versatile performance analysis and planning product for IBM Midrange and Enterprise Disk Subsystems. The product has benefited from continuous development since 1994, when IBM first began to use it to analyze and predict the performance of customer workloads.

Understanding Disk Subsystem performance becomes more complex every year. Today, a storage specialist has to take into consideration technologies such as high capacity physical disks, high capacity logical volumes, RAID schemes, Fibre Channels, Synchronous and Asynchronous Copy Services solutions, cache size options, Parallel Access Volumes, and many more.

Disk Magic can help. It provides you with a thorough understanding of your current Disk Subsystem performance and enables you to make better purchase and configuration decisions.

Disk Magic offers complete and up-to-date support for IBM Disk Subsystems such as the Enterprise Storage Server, DS4000, DS6000 and DS8000 and for IBM’s virtualization engine, the SAN Volume Controller.

Disk Magic shows current and expected response times, utilization levels and throughput limits for your own installation’s I/O load and server configuration.

When you plan for an upgrade, Disk Magic enables you to select the most cost-effective configuration options with confidence. You can model changes to the disk drive technology, the cache size, the number of Fibre or FICON channels, and more.

Use Disk Magic to:

- Assess the performance impact of moving from 73 GB to 146 GB disk drives
- Identify the component that will need upgrading first at a 30% annual growth percentage
- Show the current utilization levels of the Processors, Channels, Host Adapters, and RAID ranks
- Compare bandwidth requirements and response time impact of the various Copy Services solutions in your environment
- Decide whether to invest in 15k RPM disk drives, or whether 10k RPM disk drives will suffice
- Chart current and predicted response times when considering the move of a specific iSeries ASP to another disk type
- Show what the result would be of consolidating four ESS F20s to one DS8300
- Analyze whether your most critical application would run better on RAID 10 than on RAID 5
- Predict the performance benefit that will be gained from increasing the cache size
Disk Magic Applications

- **Health Check**
  When doing a health check of your Disk Subsystems, Disk Magic gives access to information that is not available otherwise: it 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.

- **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 and you will know 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.

- **Monitoring zSeries Logical Volumes**
  For z/OS workloads, Disk Magic offers a cross-sysplex view of current performance at the Disk Subsystem, Logical Subsystem, or Logical Volume level. Volume level presentation makes it surprisingly easy for the performance analyst to identify volumes with unusual or unwanted performance characteristics, and to explore possible improvements by modeling configuration changes.

- **iSeries and Open Systems**
  In a consolidated disk configuration many servers may be attached to the same Disk Subsystem. For such a configuration, 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.

- **Deploying 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, 73GB disk drives for your specific I/O load, or could you benefit from more economical 300GB technology?

- **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. Disk Magic supports all IBM’s Copy Services schemes such as Metro Mirror (PPRC), Global Copy (Asynchronous PPRC), and Global Mirror for zSeries (XRC).

- **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.
Disk Magic Features

- **IBM Disk Subsystems**
  Disk Magic supports the full range of IBM Disk Subsystems, whether they are attached to Open Systems servers, zSeries, iSeries, or a combination thereof. Even TPF is supported. Among the supported Disk Subsystems are all models of the Enterprise Storage Server (ESS), and the DS4000, DS6000 and DS8000 series.

- **Storage Virtualization**
  You can use Disk Magic to plan and monitor IBM SAN Volume Controller configurations. Use the Wizard to model a complete SAN Volume controller configuration including the back-end Disk Subsystems. You can use Disk Magic’s standard I/O load profiles to represent your Open I/O workload, or you can enter current workload measurements and predict what would happen if you added a SAN Volume Controller to your configuration.

- **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.

  Disk Magic interfaces to Microsoft® Excel or Lotus 123 to create graphical output automatically. This includes the ability to create ‘growth’ charts that show the effects of a steadily growing I/O load.

- **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 and Performance Tools Reports for iSeries. Data entry can be done manually too. This allows you to specify an expected future workload, or an existing workload for which it is hard to obtain measurements.

  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.

- **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 from DS4000 to DS6000, the performance of RAID 10 versus RAID 5, and many more of these types of scenarios.

- **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 offers advanced and high quality software for storage performance analysis and configuration planning.

IntelliMagic products incorporate advanced algorithms for data reduction and performance prediction, in combination with an effective, flexible and intuitive user interface. Users are guided safely through valid 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:

- **Capacity Magic**
  Capacity Magic offers a graphical interface that computes the usable capacity for any disk and RAID type combination on an IBM ESS, DS6000 or DS8000 Series Disk Subsystem.

- **RMF Magic**
  RMF Magic is used for Disk Subsystem performance studies in z/OS environments. RMF Magic can also create automated input files to be used for modeling zSeries workloads with Disk Magic.

- **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.