



IntelliMagic

Storage Intelligence

The IntelliMagic Class on: z/OS Disk Subsystem Architecture and Performance Analysis

This class provides a thorough understanding of z/OS disk subsystem architecture and performance management. It offers practical guidelines to enterprise storage managers and performance analysts who need to monitor and manage I/O service levels.

The class was developed to give you insight into one of the most critical components of the overall performance of zSeries based applications: disk I/O.

When the first disk subsystems came on the market, there was a close match between the MVS view and the physical setup of the disk subsystems. One logical volume was equal to one physical disk, and the MVS instrumentation provided a clear view of disk performance. However, in the current disk subsystem architecture there are so many layers of virtualization between the z/OS host view and the hard disk drives that the old ways of monitoring and balancing I/O are no longer adequate.

This class provides the knowledge needed to effectively monitor, diagnose and avoid performance issues with today's advanced disk subsystems. You will learn which metrics can be used in today's environment and what new methods can be used to assess and manage the performance and utilization levels of your disk subsystem hardware for your specific workloads. This enables you to create a better balance of your I/O workloads so that you can reduce performance problems and improve the ROI of your disk hardware.

After attending this class you will have the background needed to get the best performance out of your disk subsystems.

Class Topics include:

- ▶ Current I/O subsystem architecture for z/OS attached Disk Subsystems
- ▶ Overview of Disk Subsystem implementations from EMC, HDS, HP, IBM and Sun StorageTek
- ▶ Hard disk drive technologies and RAID schemes and how to evaluate the options for your own installation to make the right investments
- ▶ A closer look at caching for z/OS: read cache, write cache, sizing cache memory
- ▶ FICON channel performance and MIDAWs
- ▶ How do dynamic PAV and HyperPAV allow you to exploit 3390-54s and EAVs
- ▶ A comprehensive discussion of synchronous and asynchronous Copy Services, both local and remote, with implementation details for the individual vendors
- ▶ Storage Management with DFSMS for optimal performance with minimal work
- ▶ How to interpret Disk Performance Measurements from RMF and SMF
- ▶ How to configure your disk subsystems to best exploit their capabilities for your workload

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Class Essentials

► Audience

This class is designed for Enterprise Storage Professionals, Storage Architects, Storage Performance Analysts, Capacity Planning Professionals, and Systems Programmers. Professionals relatively new to the field of storage performance will benefit from the comprehensive overview this class provides, while experienced people will deepen their knowledge and skill through the advanced topics that are taught throughout the class.

► Prerequisites

Familiarity with zSeries I/O configurations is assumed. No knowledge of any specific tool is required, although some experience with RMF or CMF reports is advantageous.

► Class Materials

Attendees will receive a binder with over 450 detailed color slides that contain the up to date content for the entire course. The class materials will also be provided in PDF format so you can easily use the reference links that are listed after every section.

► Performance Analysis during the Class

All participants are invited to send a week's worth of RMF data to IntelliMagic before the class. IntelliMagic's experts will analyze the data and it will be used in the class as a case study to show how to analyze disk performance. Extended one-on-one consultations about the data can also be arranged. Please ask about this when registering for the class.

► The Instructors

This class was first given in 2005 and is continuously updated to address the latest architectural developments. The class content was created by Dr. Gilbert Houtekamer and Andries de Jong in cooperation with John Baker and John Tivic. The class will be taught by one or two instructors.



Dr. Gilbert Houtekamer holds a Ph.D. from the Delft University of Technology and is one of the founders of IntelliMagic. He has over 20 years of experience in I/O performance analysis, and has numerous publications on I/O performance on his name, including "MVS I/O Subsystems", a book written in cooperation with Dr. Pat Artis. Gilbert is a frequent speaker at industry events such as CMG and Share.

Andries de Jong is Principal Consultant at IntelliMagic. Prior to joining IntelliMagic, Andries worked for IBM from 1968 to 1995, specializing in mainframe storage solutions. He was a member of the GDPS development team from 1996 to 2002, and was active in the IBM EMEA advanced technical support team. In his role at IntelliMagic, Andries works with customers around the world and is a regular speaker at zSeries storage events.



John Tivic joined IntelliMagic as a consultant in 2008. He started as mainframe systems programmer in 1984 and maintained, tuned, and upgraded a large number of MVS-based systems. John has extensive experience in planning and implementing large XRC and GDPS/PPRC installations. Furthermore he developed many STK/SUN VSM performance analysis tools.

John Baker joined IntelliMagic as a consultant in 2007. Previously, John worked for 10 years on the mainframe performance team of a large bank where he was instrumental in a variety of strategic performance projects such as implementing WLM Goal Mode, GDPS/Data Mirroring, and merging acquired workloads.



Class Feedback

► Feedback from our attendees

“Excellent course, one of the best I’ve attended the last years.”

“In addition to the obvious expertise of both instructors I would like to note two things that really stood out as exceptional about the class. The first thing was the high quality of the printed documentation. Secondly, I highly appreciate the detail contained in the material. The fact that nearly every section listed references for future use and understanding will be a great asset to me. It will prove useful long after the class has ended.”

“A really enjoyable course, I learnt a lot and will be recommending IntelliMagic to my company.”

“Congratulations! Both of you have a profound know-how of I/O and both of you are equally able to pass on your know-how. For me this is the best course I have ever taken and it opened many doors to the topic of HW I/O.”

“The presentation was brilliant; it was well planned and delivered. IntelliMagic was very hospitable, which made our stay pleasant.”

“I’m very glad I enrolled in the course. It was a great refresher class for me. It was good to see the class has continued to be updated the past two years. The quality of the material presented, and the ability and knowledge of the instructors is outstanding.”

► Class dates and locations

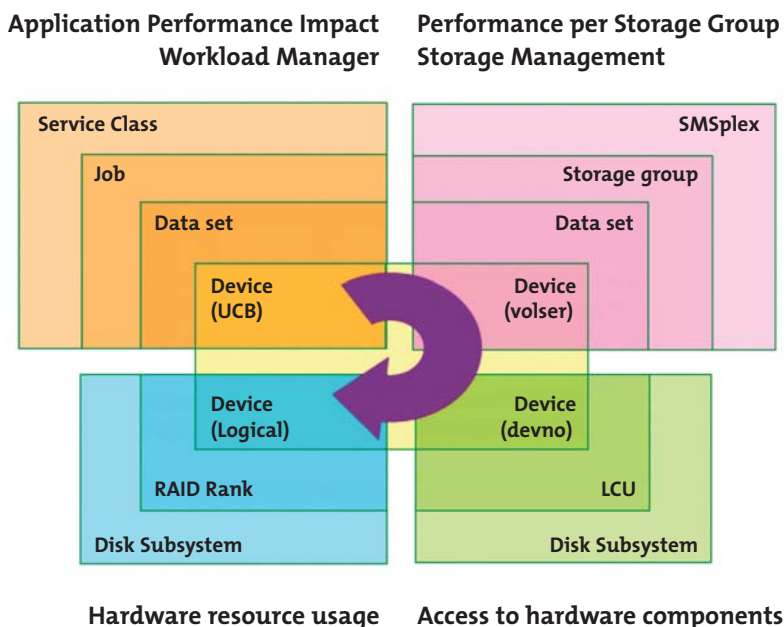
IntelliMagic organizes the class several times a year in the US and Europe. On request we can also teach the class in house at your company.

To allow for the class to be interactive, we restrict the audience to a maximum of 24. Please check the IntelliMagic website for the extensive class curriculum, planned class dates and the registration form:

<http://www.intellimagic.net/classes>

▼ Example of a slide used during the class:

Management of I/O performance is all about placement of data





IntelliMagic

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.

IntelliMagic products 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.

▶ **Disk Magic**

Disk Magic is a Windows-based modeling product that shows current performance and evaluates upgrade scenarios for your Disk Subsystems.

▶ **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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