Designing IBM System Storage Solutions for Microsoft Exchange Server 2010

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sEA01

IBM Storage

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Expect More from Your Storage

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A little about me...

- **Own the technical relationship between IBM System Storage™ & Microsoft. Responsible for:**

  – Driving technical enablement, i.e. feature support (SMI-S, VSS, ODX)

  – Creating technical collateral (ESRP, whitepapers, Redguides)

  – Creating joint solutions such as the Hyper-V Fast Track & SQL Server Data Warehouse reference architectures

  – HW & staffing at the Microsoft campus & the IBM Center for Microsoft Technologies

  – Defining technical goals and areas of collaboration between the companies

- **With IBM since 2004**

- **20+ years hands-on IT from startups to enterprise**

  – Still have nightmares from on call pager duty

What's in a name?

- Unfortunately, not affiliated with:

- But tormented as a kid thanks to:

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I've created some collateral...

Session Objectives

- **At the conclusion of this session, participants should be able to:**

  - Intelligently discuss the key architectural design concepts of Microsoft Exchange Server 2010

  - Understand Exchange performance characteristics and how they affect storage design and underlying hardware

  - Be able to map IBM's System Storage™ solutions to applicable Exchange scalability, performance and availability requirements

  - Adapt best-practices from real-world Exchange deployments that can help to control storage cost and ease management burdens

  - Understand work IBM has done to validate our products with Exchange, and where to go for additional resources

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Question: What was the first official version of Exchange, and when was it released?

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Design Drivers in Exchange Server 2010
Large Mailboxes at Low Cost

- Exchange 2010 supports a range of storage options

  - Direct Attached Storage (DAS), Storage Area Network (SAN)

  - RAID and RAID-less (JBOD)

- Uses storage more efficiently and can lower storage costs

  - Larger, slower, lower-cost disks—SAS/SATA (Tier 2) Disks

- Maintains reliability and performance

  - Built-in Exchange 2010 Mailbox Resiliency features

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Storage Improvements

New options with performance enhancements

Choose from a range of storage technologies that can reduce costs without sacrificing system availability
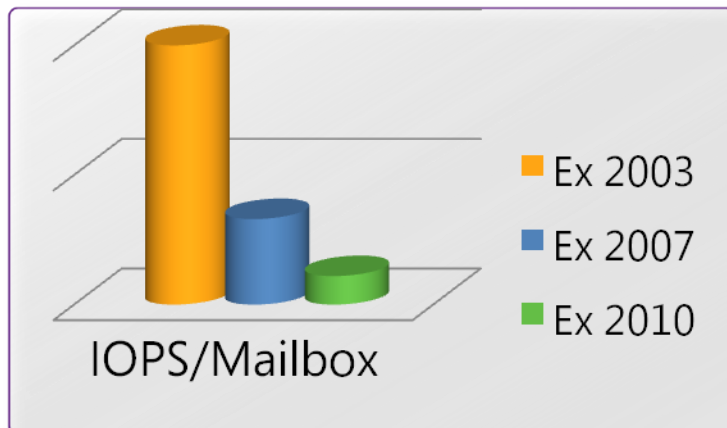
Storage Area Network (SAN)	Direct Attached w/ SAS Disks	SATA Disks	JBOD (RAID-less)

IOPS/Mailbox

- Ex 2003
- Ex 2007
- Ex 2010

Exchange 2010 storage enhancements

- **90% reduction in IOPS from Exchange Server 2003**
- **Smoother I/O patterns**
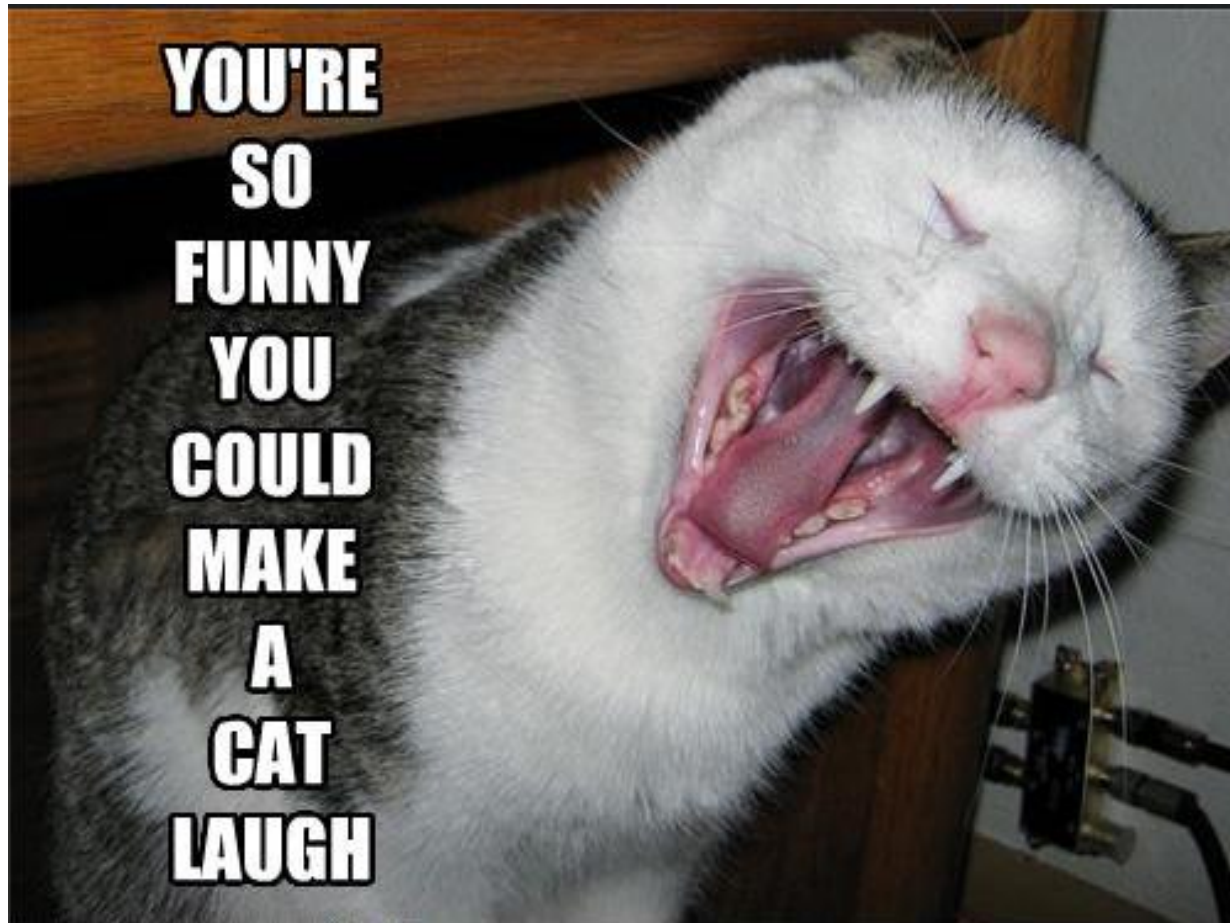- **Resilience against corruption**

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It is hereby pronounced that:

"The SAN is dead!"

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This messaging has been received well by enterprise customers...

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XIV – The Exchange Team's 'problem child'

- **As recently as Exchange Server 2007, XIV & the Exchange Team 'butted heads'**
  - What was that about log & database spindle isolation?
  - Cannot be physically achieved in a virtualized storage system
  - No ESRP's for XIV?!
  - 'Unsupported' architecture?!
- **After much animated dialog**
  - Common sense prevailed in Redmond
  - Microsoft actually loves XIV (and the SVC/V7000 after their respective GUI updates)

- Exchange is actually one of XIV's top workloads…

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