Storage

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Dealing with end-user storage: What to do about Windows?

How do you pick a strategic solution?

Rob Gallini Architecture Manager, ITS, Meijer

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Objectives:

- A process to evaluate your current environment and future needs.
- Factors to consider in developing a storage strategy.
- Factors to consider in selecting a storage solution.

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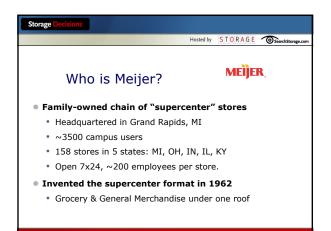
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Audience Response

What are your goals for this session?

- A. Learn more about NAS implementations.
- B. Preparing to purchase a NAS solution.
- C. Implementing, wondering if it is right.
- D. Completed, looking to commiserate.

Audience Response





• Unused storage on distributed systems

Storage Decisions

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Meijer's IT Strategy Process

• Define a desired end state.

- Gather industry perspectives
 - Storage Decisions
 - Analysts reviews
- Looking for trends, standards and acceptance
- Conduct technology scans with vendors

Meijer's IT Strategy Process

Conduct a gap analysis

- Sell the desired end state to technology teams.
- Define the current state.
- Identify internal trends and influences.Know the "sacred cows".
- What direction have technical teams been going in? What is driving the direction?
 - "If all you have is a hammer, everything looks like a nail."

Storage Decisions

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Meijer's IT Strategy Process

Implement

- Initiate projects to address the gaps.
 - Assign technology owners.
 - You get what you inspect, not what you expect.
- Conduct training with technical & development teams.
- "Strategies can be roughly right, but execution must be perfect."
 - Anne Mulcahy, President & CEO, Xerox

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Storage Strategy

Begun early part of 2000

- All storage was DASD to mainframe and distributed systems (Netware, AIX, NT).
- 12 Goals identified
 - #1 Create a formal Storage Management Team

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Other high-priority goals:

- Remote management is a requirement
- * 7 x 24 x 365 availability is needed for storage solutions
- Storage management tools are needed for:
 - Performance Monitoring
 - Capacity Management
 - Administration
- Details: Ask-the-Expert booth, 4-5 PM in the Exhibit Hall

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File Services Replacement Strategy

- Late 2002
- Drivers
 - Reduce file storage costs
 - No well-defined SLAs or policies for file services in terms of placement, use and standards
 - Lack standards for storage usage
 - Microsoft Migration being considered
 - "Appliance computing"

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File Services Replacement Strategy

General findings (in 2002)

- Lack of API standards
- Vendor initiatives vs. standards
- Minimal application awareness (SLA-based configs)
- Virtualization not there yet
- Vendors locking in customers through software
- We should be doing SRM now

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File Services Replacement Strategy

Conclusions

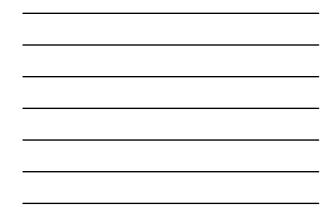
- It is not cost effective for shared files to be stored on the SAN. We need clear standards to help guide where specific types of data should be stored.
- In general, shared files should be stored in a NAS, while database data should be stored on the SAN.
- While proprietary NAS options have their advantages, there are some significant limitations that make the Windows-based NAS devices more attractive.

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Data Type	Direct Attached Storage	Network Attached Storage	Storage Area Network
Mission-Critical Corp. Data: - High - Performance, High Availability - High Cost - Block level locking	DB2 Teradata		X UDB, Oracle, Sybase
Mission-Critical 3rd Party Data: - High - Performance, High Availability - Moderate to High Cost - Block level locking		x	x
Corp. Collaboration Data (E-Mail): - High Performance, Moderate to high-availability - Moderate to high-cost - Block level locking		x	X GroupWise (future Exchange)
Dept. Data: - Moderate Performance, Moderate Availability - Moderate Cost - Block level locking		x	
Web Content: - Moderate Performance, Moderate Availability - Moderate Cost - File level locking		x	
Shared System Files: - Low Performance, Moderate to High Availability - Low to Moderate Cost - File level locking		x	
Shared document and applications: - Low Performance, - Moderate Availability - Low to moderate cost - File level locking		x	

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Storage Decisions			
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File Services Replacement Strategy

Desired end state

- Appliance-based device
 - Flexibility
 - Licensing
- Protocol support
 - CIFS and NFS primary, NCP secondary

TCP/IP required

• Integrate with our desired move to Microsoft-based infrastructure (i.e., Active Directory)

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File Services Replacement Strategy

Desired end state (continued)

- Must support security and management features
- Manage centrally from an integrated console/web
- Provide extensive storage management tools
- Must use industry-standard monitoring protocols (i.e., SNMP, OpenView, etc.)
- Must provide lower acquisition and management costs relative to our current SAN environment

File Services Replacement Strategy

- Gap analysis of file storage
 - 30 Netware file servers
 - 800 GB on internal disk
 - 1.2 TB on external arrays
 - 1 TB on proprietary SAN
 - 2 Windows file servers
 - 192 GB on disk arrays
 - 2 AIX file servers
 - 7 GB on internal disk

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File Services Replacement Strategy

• Internal trends and influences

- Technology teams in islands, no cooperation
- Netware team bought their own SAN.
- Microsoft migration created mistrust.
- Storage team was mainframe-oriented.
 - SAN vendor provided little support for distributed systems.
 - No hardware/OS experience on storage team.



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File Services Replacement Strategy

Implement (CSFs)

- Implement the shared file data placement model, and use it when determining where to place data.
- Evaluate, select and deploy a Windows-based Network Attached Storage (NAS) solution.
- Move as much of our traditional shared file and application data to the NAS solution over the next 12 to 18 months as we deploy Windows XP and ActiveDirectory.

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File Services Replacement Strategy

Implement (CSFs) (continued)

- Evaluate our existing SRM in light of our NAS solution to determine whether a new Storage Resource Management (SRM) tool is needed.
- Institutionalize and communicate the strategy.
- Assign ownership for architecture and support.
 - Storage Team
 - Novell/Windows Team
 - AIX Team

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Wrap-up

- A process to evaluate your current environment and future needs
- Factors to consider in developing a storage strategy
- Factors to consider in selecting a storage solution

