



Was ist Windows Storage Server ?



- Dedizierter File Server
- Vorkonfiguriert, verfügbare von vielen MS OEMs
- Kapazitäten von 160GB bis Terabytes
- 'Headless' Modelle
- Vereinfachte Installation
- Remote Verwaltung
- 'Single Contact' fuer Support
- Niedrige Einstiegskosten



Windows has over 53% of WW NAS unit market share

Source: Gartner Dataquest

Windows Storage Server 2003 R2 vs. Windows 2003 R2



Die folgenden 3 Features sind ausschliesslich in WSS 2003 R2:


- Single Instance Storage
- Index Based Search
- File Server Performance Optimization

Benefits of Windows Storage Server 2003 R2



- **Enhanced Manageability**
 - New HP branded MMC User Interface
 - New HP Software Update/Patch Management Improvements
 - Single Instance Storage (SIS)
 - File Server Resource Manager
 - Storage Manager for SANs
- **Increased Productivity**
 - Performance optimization
 - Full text search and indexing
 - Windows SharePoint® Services
 - File serving across different operating systems
- **Branch-Ready**
 - Distributed File System (DFS)
 - DFS Namespaces (DFS-N)
 - DFS Replication (DFS-R)
 - Print Management Console

Storage Server R2 Details

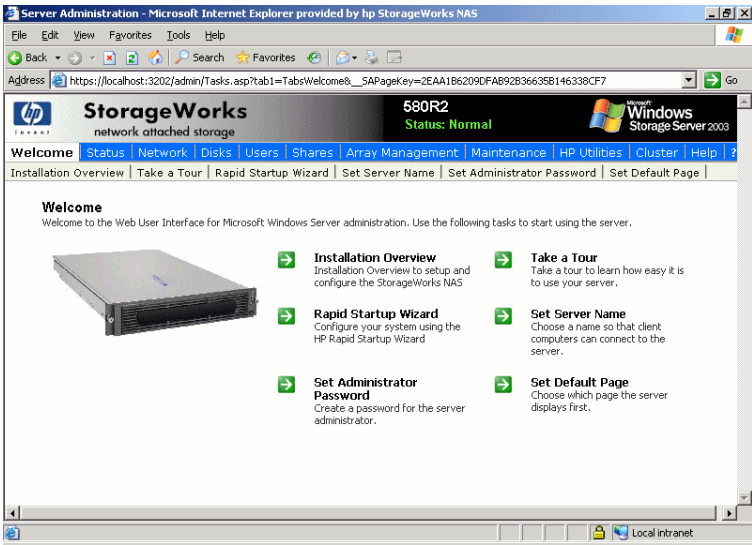



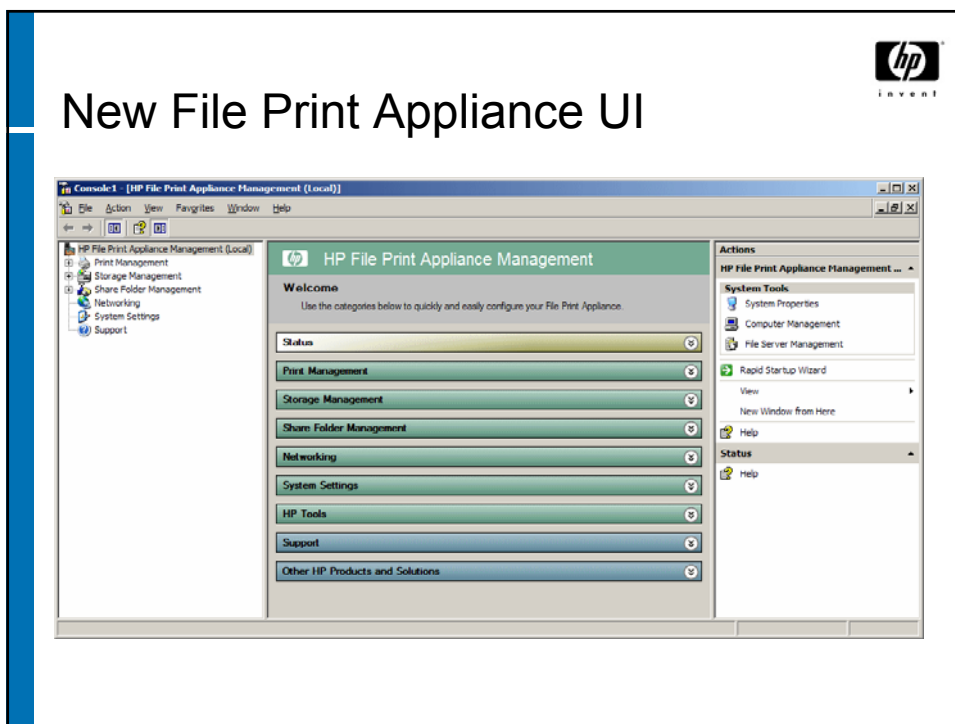
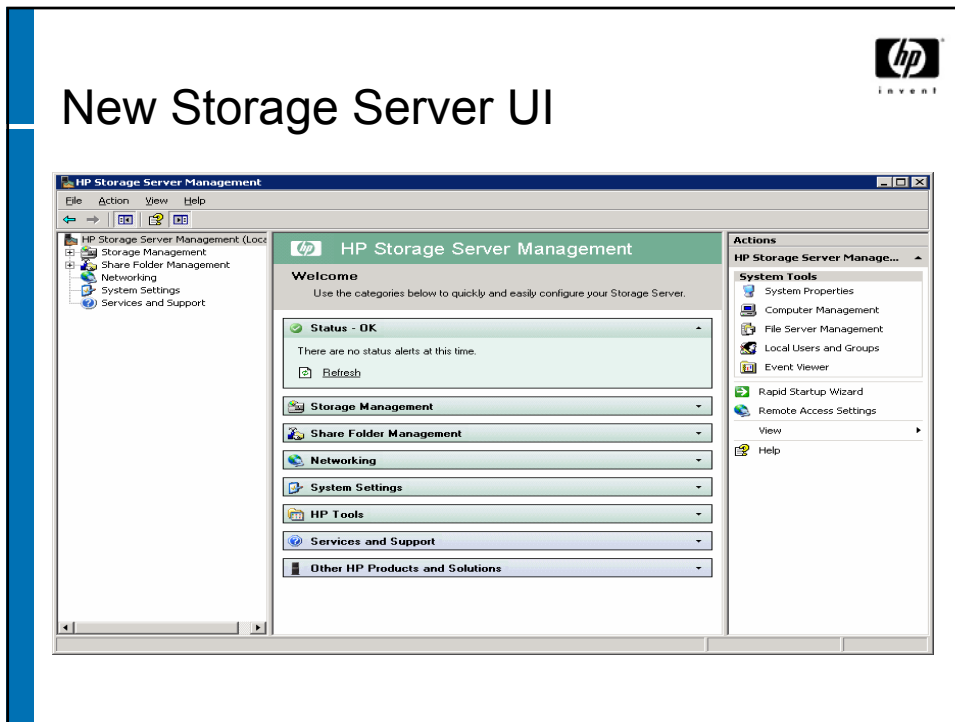
Enhanced Manageability

Increased Productivity

Branch-Ready

Current WSS2003 SP1 UI







HP Enhancements to WSS2003 R2

Software Update/Patch Management improvements

- Enhanced installer allowing installation of support updates from DVD and/or web
- Individual updates offered via web download
 - Filtered list of ProLiant software, driver, firmware & ROM Flash updates; other updates where applicable (Microsoft, Inventec, etc.)
- Maintain current Microsoft Software Updates and Security Patch support policy
- Continue to offer Quarterly updates via Service Release (SR) DVD
 - Order from HP Software Depot for free
- ISS/SDG – SWD/NAS partnership
 - Integrate/leverage ISS processes (longer term effort)




Single Instance Storage (SIS)

- A unique feature of NTFS on Windows Storage Server
 - Replaces identical copies of files with links to one copy on a volume
 - Like Microsoft Exchange Server has for attachments
 - Transparent to users and applications
- Customer value
 - Save disk space
 - Eliminate need to track/condense duplicate files
 - Save backup tape space
 - Many backup apps already use SIS application programming interfaces (APIs)
 - Save on storage management costs

SIS has been shown to save more than 35% of disk space* and reduce storage management costs.


* Source: Internal Microsoft study.



SIS results in Microsoft IT

Server Type	Number of Servers	Average Space Savings		Total Space Savings (GB)
		%	GB	
Localized Products	2	70.3	511.9	1023.8
Archived Products	2	64.3	1039.0	2078.0
Products\Public\Products	6	52.2	70.5	423.0
Streaming Media Master	1	44.4	71.5	71.5
DDS Hug	29	63.8	173.0	5,017.0
DDS Tail	110	54.4	20.6	2,266.0
GMAS	34	71.7	104.3	3,546.2
RIS	85	59.3	1.4	116.5
Total Savings	269	60.05		14,542.0

- If storing this data on 36 GB drives, this is a hardware savings of up to \$116,416.00
- More importantly, it can help organizations save millions of dollars on management




Storage Management

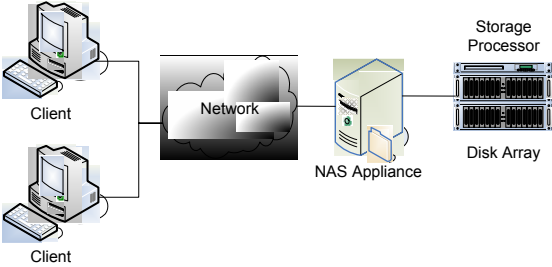
File Server Resource Manager

- **Storage Reports**
 - Filesystem-related reports for tracking storage
 - On demand and scheduled reports
- **Quotas (now supports clustered Storage Servers)**
 - Limits size of a volume or folder
 - Folder-based
 - Built-in reports
- **File Screening**
 - Controls the type of data stored in a file or folder
 - Name-based screening of files
 - Allow/disallow file creation on specified folder trees
 - Send alerts, notifications and maintain a list of policy violations

Storage Management




SMfS: SAN Management and Provisioning



- Windows Storage Server 2003 R2 SAN scenario:
 - NAS 'gateway' to SAN storage processor and disk array
- SMfS Offers basic SAN management functionality:
 - Device discovery
 - LUN creation
 - Storage allocation
- SMfS Enables
 - Shared storage solutions
 - Clustering

Storage Server R2 Details



Enhanced Manageability

Increased Productivity

Branch-Ready



Performance Optimization

- ~15-20% file serving performance gain versus non-optimized, Windows-based file servers
- A number of NAS performance optimizations can be enabled, including:
 - Increasing cache size
 - Disabling last access time
 - Decreasing TCP default acknowledgement frequency
- NetBench benchmark of 4.11 gigabits/sec for common Internet file system (CIFS)
- SpecSFS benchmark of 22,416 ops/sec for network file system (NFS)



Full Text Search

- Expose the latent full-text search
 - Can search a wide range of both Microsoft and non-Microsoft file types
 - Scales to 3-4 million documents
 - Same security/access control list (ACL) semantics as SharePoint Portal Server
- Windows 2000 and Windows XP already have the client UI



Windows SharePoint Services

SharePoint sites provide file storage and collaboration.


- Team Collaboration
 - Event calendars
 - Contacts
 - Web links
 - Announcements
- Document Libraries
 - Store and retrieve files
 - File check-in and check-out,
 - Version history
 - Custom metadata
- Web Parts
 - Data access
 - Web services
 - Other applications and content to SharePoint sites
- No other NAS appliance has it.



File Serving across Different Operating Systems

- Windows Storage Server addresses customer pain.
 - Customers need to share files and data between UNIX, Linux, and Windows systems.
 - Customers are unhappy with current solutions for cross-platform file sharing due to:
 - Poor performance
 - Lack of security
 - One-way authentication
 - Lack of support
- Windows Storage Server 2003 R2 provides seamless UNIX/Windows interoperability.
 - Natively supports Linux and UNIX clients
 - Authenticates users across platforms
 - Shares files and data across multiple operating systems
 - Tested and supported by Microsoft

Storage Server R2 Details




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Distributed File System (DFS)



DFS Namespaces (DFS-N)

- Key storage technology
 - Provides logical view to physical storage and unified global namespace
 - Translates logical names to physical shares
 - Users can connect to share without having to remember server name
 - Supports transparent failover and fallback of client connections to physical file servers
 - Shares can be moved around without affecting clients; share location is transparent to clients
 - Leading file system virtualization; virtualizes file servers and NAS devices

Note: *Only Windows-based devices can be roots in DFS; non-Windows-based NAS devices cannot serve as DFS roots.*

Distributed File System (DFS)



DFS Replication (DFS-R)

- Replicates data stored on distributed servers
- Uses remote differential compression
 - Sends only changes when transferring data over a network
 - In Windows Storage Server 2003 R2, used for calculating deltas for file updates in DFS-R
 - 'Diff over wire'
- Supports replication scheduling and bandwidth throttling for WANs

