HP MediaSmart Home Server

Washington Area Computer User Group

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The HP MediaSmart Server

Dimensions: 5.5"W, 9.8"H, 9.2"D

Background

- Windows Home Server announced by Bill Gates at the Consumer Electronics Show on January 7, 2007.

- Released to manufacturing on July 16, 2007.

- First products for sale in November 2007 (Hewlett Packard).

Availability

- Two MediaSmart Home Server models:
  - EX470 at $599.99 (One 500 GB internal drive)
  - EX475 at $749.99 (Two 500 GB internal drives)
- Hewlett Packard
- Micro Center
- Amazon
- Newegg
- Circuit City
- Staples
- B&H Photo

Specifications (Model EX475)

- AMD 1.8 GHz 64-bit Sempron® processor

- OS: Microsoft "Windows Home Server" (based on Windows Server 2003 SP2)

- 512 MB DDR2 DRAM

- Network: 10/100/1000 GBit RJ45 Ethernet

- Four USB 2.0 ports; 1 eSATA port

- Two SATA 7200 RPM 500 GB drives

Specifications (cont.)

- Total of 4 internal hard drive bays

- Max Capacity: Only limited by number of internal & external disk drives

- Supports both wired and wireless PCs (via wireless router)

- Up to 10 user accounts plus "Guest"

- Headless—access via Windows Home Server Console on any attached PC

Key Functions

- Backup using Single Instance Storage
- File sharing [acts like a NAS (Network Attached Storage)]
  - Word processing files, etc.
  - Photos
  - Music (including iTunes)
  - Videos
  - Software

Key Functions (cont.)

- Folder level security for each user
  - None: no access
  - Read: only read files
  - Full: read, write, modify, delete, etc.
- Folder level duplication across multiple disks ("RAID-1 like", but not mirroring)

Key Functions (cont.)

- General remote access via the Internet
  - A "Windows Live ID" from Microsoft is needed to create a domain name
  - Access via User-ID & password
- Remote access to home computers via the Internet & "Remote Desktop"
  - Windows XP Professional
  - Windows Vista Ultimate, Business & Enterprise
- Printer sharing (networked printer)

Key Functions (cont.)

- Media streaming to various devices
  - Xbox 360
  - D-Link MediaLounge DSM-320 Media Player
  - Roku SoundBridge M1000 Network Music Player
  - Roku SoundBridge M2000 Network Music Player
- For more information see
  http://www.microsoft.com/windows/windowsmedia/devices/wmconnect/faq.aspx#3_2

Windows Home Server Storage

- "Drive Extender" technology
  - Drives in or attached to the server can act as a combined storage pool or as individual drives
  - Drives in the storage pool just appear as "shared folders" on each desktop (not as a lettered drive "D", "E", etc.)
  - Any size SATA, eSATA or USB drives can be used, i.e., mix and match

MediaSmart Server: Installation

- The installation & troubleshooting manual is quite thorough and readable

- One hour to read documentation & think
- One hour to install

— Alternatively—

MediaSmart Server: Installation

- **Don't** read documentation or think
- 3-5 hours to install

Windows Home Server Bug

- Microsoft data corruption bug:
  - Using a variety of programs to edit, transfer or save files to the Home Server (see http://support.microsoft.com/kb/946676/en-us for a list of the programs and details)
    - 23 programs including Outlook & Photoshop Elements
  - Impacts only servers with more than one drive
  - Backup & Restore, Health Monitoring & Remote Access not impacted
  - Fix apparently not to be available until June or later

Windows Home Server Bug (cont.)

- See the following for more information:

    - http://blogs.technet.com/homeserver/archive/2008/

    - http://www.theregister.co.uk/2008/03/11/microsoft

                Thanks to Geof Goodrum

Our Home Network

- Two HP d4996t desktop computers running Windows Vista Ultimate.

- One Dell XPS M140 laptop computer running Windows XP Media Center (SP2)

- A U.S. Robotics 8-port 10/100/1000 Mbps "Gigabit" switch

- D-Link Wireless Router

- Cat-6 cabling in the house

- ISP: Verizon FiOS 15 Mbps ↓ and 2 Mbps ↑

MediaSmart Home Server Backup

- PCs are backed up using an image-based system (VSS, Volume Shadow Services)

  - Operates at the cluster level (~4KB) and not the file level

  - A cluster is stored only once, regardless whether it comes from multiple computers

  - Single-instance storage

Frequency of Backups

- Daily/Nightly (midnight to 6:00 am)
- Backup Management
  - Set number of months to keep the first backup of the month (3)
  - Set number of weeks to keep the first backup of the week (3)
  - Set number of days to keep the first backup of the day (3)

What Happens During Backup?

- Home computers are backed up one after another in the time period set

- Windows updates are installed and Windows Home Server restarts if needed

- On Sunday "Backup Cleanup" runs

Backup: Time to Execute

Completion Time for Backups

Computer	Amount Data Stored (GB)	Initial Backup Time	Nightly Backup Time (min)
Lorrin's desktop	298	3 hrs 1 min	15.8
Ann's desktop	173	1 hr 13 min	10.1
Family laptop	35	54 min	6.5

Backup: Storage Used

- The total amount of data stored on the three computers on the network is 506 GB

- The total amount of backup storage consumed on the server is 289 GB

    - This includes complete system backups plus daily backups starting on December 24, 2007

Data Recovery

- Individual files and folders can be restored

- Entire home computer systems can be restored

  – Two restoration discs are provided:

    - Server Recover Disc
    - PC Restore Disc

Restoring Folders and Files…

Show Highlight on Rollover   Arrange ▾   Align ▾   Distribute ▾

EDIT   CREATE

Windows Home Server Console

MediaSmart Server   Computers & Backup   Shared   Servers   Network

Windows Home Server

View Backups   Backup Now

Settings   Help

Name ▲	Des
GARSON1	Lorri
GARSON2	Ann'
GARSON-LAPTOP	Lorri

tus

Backed up

Backed up

Backed up

Backup Details

Backup of GARSON1 from 2/28/2008

Status: ✓ Complete   ⚙ Manage automatically
Time: 1:40 AM
Duration: 17 minutes and 45 seconds
Description: Automatic

Volumes in Backup (3)

Name ▲	Capacity	Location	Status
C: (HP)	455.02 GB	Internal	✓ Complete
D: (FACTORY_IM...	10.73 GB	Internal	✓ Complete
K: (HP Personal M...	465.75 GB	External	✓ Complete

Details of Volume C: (HP):

Restore or View Files from Volume C: (HP):   Open...

❓ Learn how to restore files from backups

Files Excluded From Volume C: (HP)

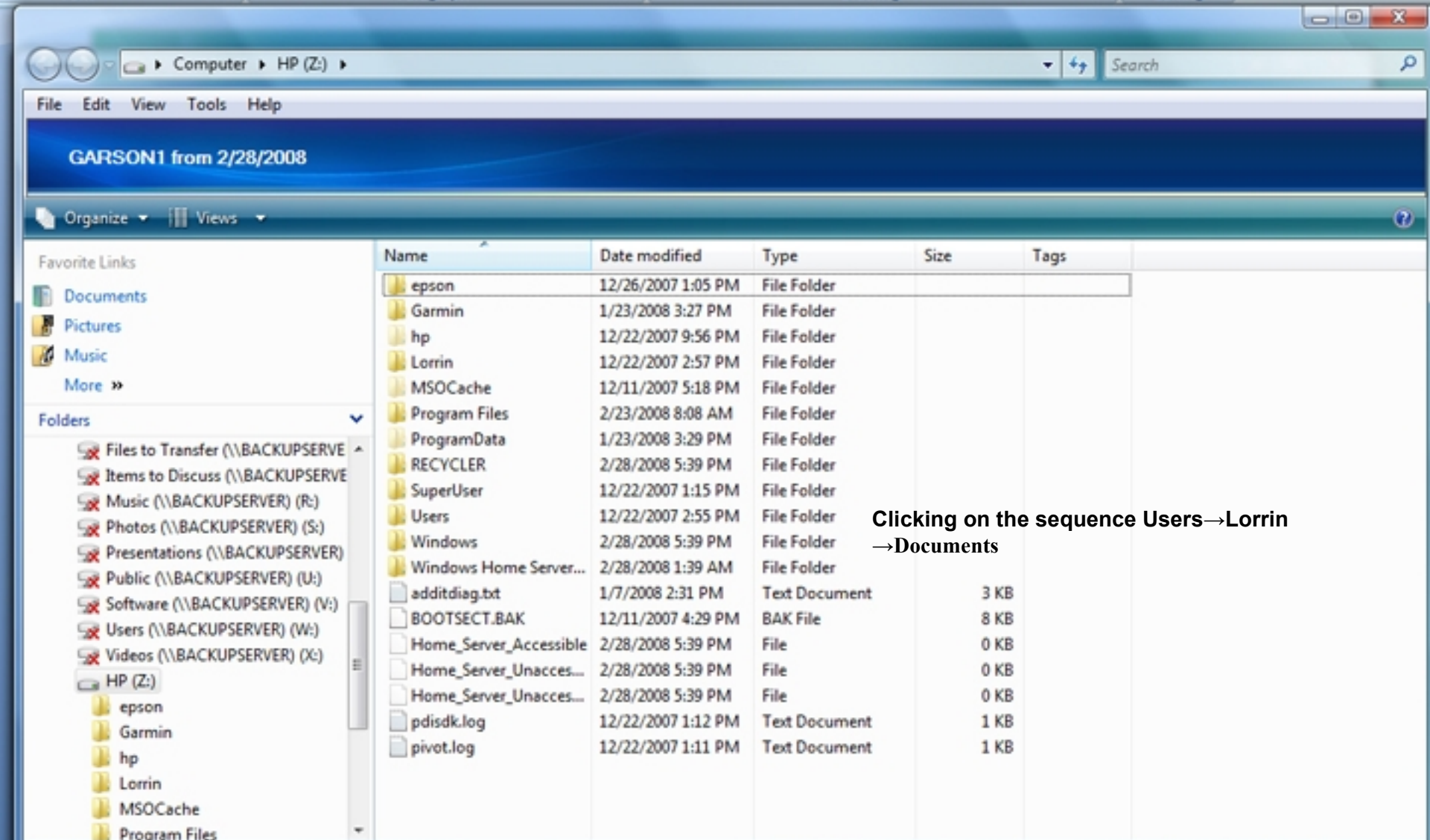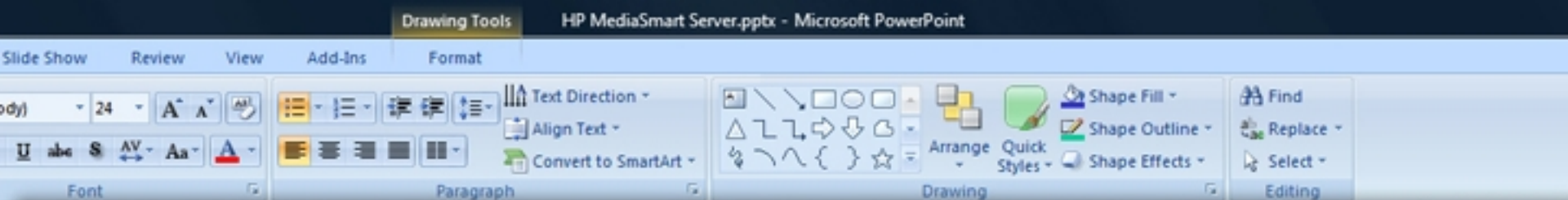|	
User temporary files	1.12 GB
Media center temporary files	143.19 MB
System page file	3.54 GB
Hibernation file	3.25 GB

❓ Learn more about Backup Details

OK   Cancel   Apply

Storage Balanced on: 2/28/2008 5:42 PM

Clicking on the sequence Users→Lorrin →Documents

Computer ▸ HP (Y:) ▸ Users ▸ Lorrin ▸ Documents ▸

File | Edit | View | Tools | Help

GARSON1 from 2/28/2008

Organize ▾ | Views ▾ | Slide Show | Burn

Favorite Links

Documents
Pictures
Music
More »

Folders ⌄

RECYCLER
SuperUser
Users
  Default
  IUSR_NMPR
  Lorrin
    AppData
    Contacts
    Desktop
    Documents
    Downloads
    Favorites
    Links
    Music
    Pictures
    Saved Games
    Searches
    Videos

Name	Date taken	Tags	Size	Rating

ACS Style Guide, 3rd Edition
ACS Style Guide, 4th Edition
ACS-CAS Staff
BACKUP WORKING ON PHOTOS
Bicycles
Books of Interest
Cake Photos from Tom Keys, Brians Wedding
Christmas
Clothing
Computer Notes
Computer Notes, OLD
Computer, Other
Digital Photographs-2000
Digital Photographs-2001
Directions
Fax
Food & Drink
Generated PDF Files
GPS
Herman Skolnik Award Jury
House, 9929 Bickley Court
Humorous Items
Important Dates
Items to Read
Logs, Personal
MS-PowerPoint Templates

MS-Word Templates
MS-Word Templates---Ann
My Albums
My Index Files
My RoboForm Data
Nautical Information
OLLI
Palm OS Desktop
Practice Photos
Presentations
Private Information & Letters
Publications & Resumes
Purchases, General
Purchases, Web
Rachel Pictures
Radio
References
Remote Assistance Logs
Scanned Documents
Security---Privacy Issues
Stuff for Brian
Telephone
TomTom
TV--HD
TV--Verizon FiOS
Updater5

Washington Metro
XM Satellite Radio 2004
1994-9160.pdf
Africa--Tropics.ROXIO
Cryptainer-C
cxp1705
Data_011108_073338.roxio
Default.rdp
Limited Warranty and Support Guide.pdf
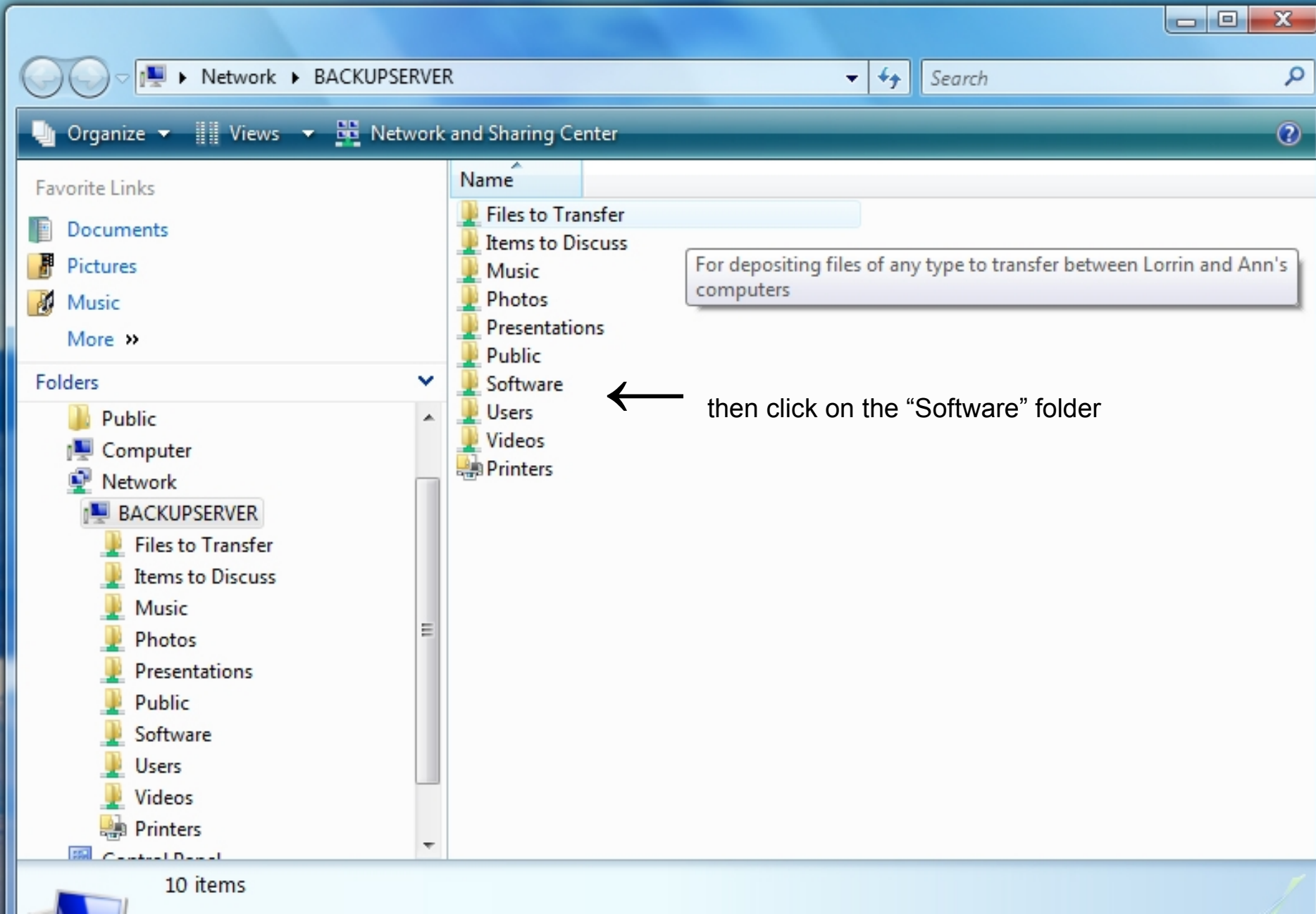Notes, Trip to Florida Jan 2-8, 2007.doc

62 items

MediaSmart Home Server

What files on the server look like…
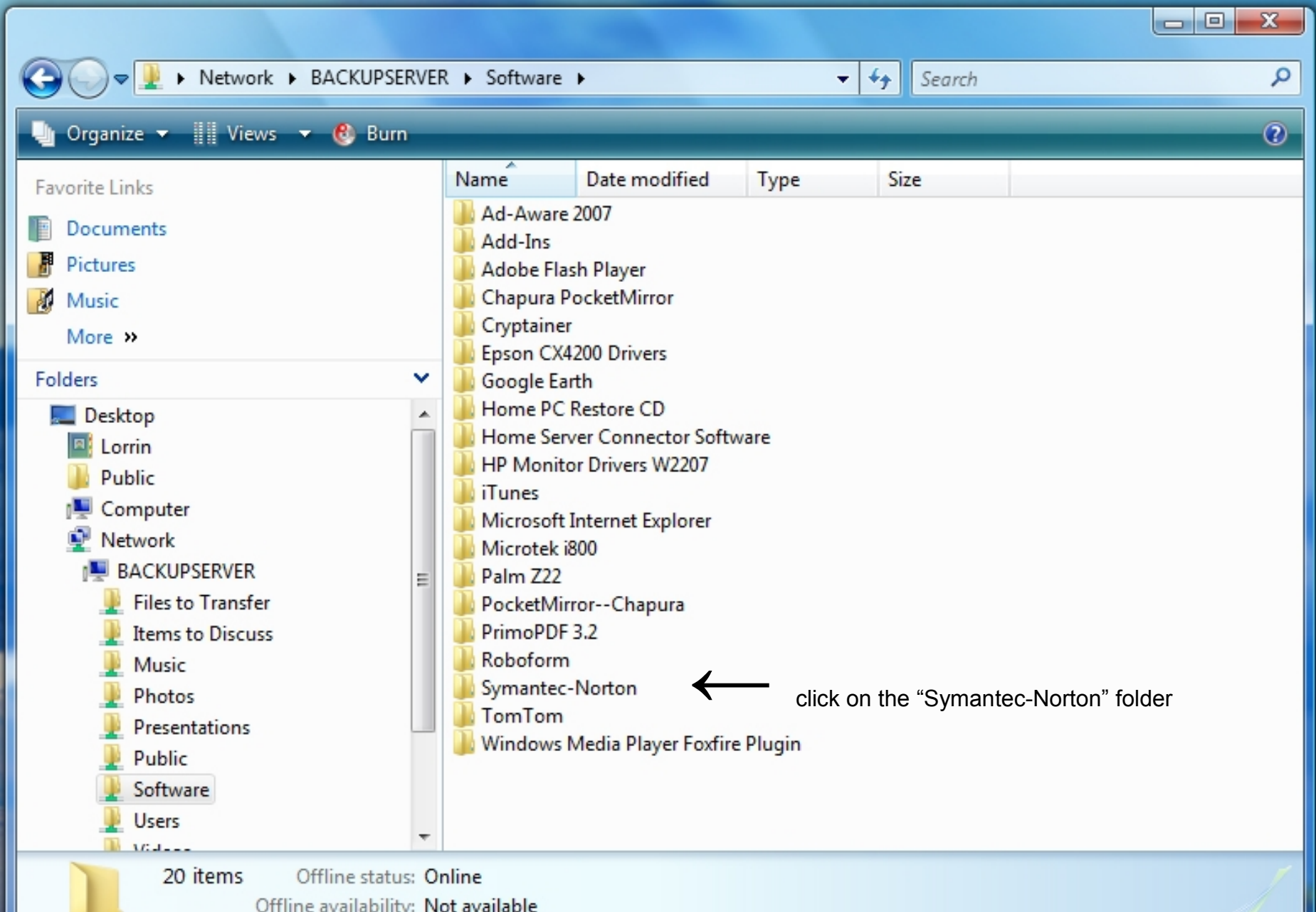
The Desktop

click on the "Shared Folders" folder

Shared folders on MediaSmart Server

Network ▸ BACKUPSERVER

Search

Organize ▾   Views ▾   Network and Sharing Center

Favorite Links

Documents

Pictures

Music

More »

Folders

Public

Computer

Network

BACKUPSERVER

Files to Transfer

Items to Discuss

Music

Photos

Presentations

Public

Software

Users

Videos

Printers

Name

Files to Transfer

Items to Discuss

Music

Photos

Presentations

Public

Software

Users

Videos

Printers

For depositing files of any type to transfer between Lorrin and Ann's computers

← then click on the "Software" folder

10 items

After clicking on the "Software" folder...

click on the "Symantec-Norton" folder

Contents of the "Symantec-Norton" folder…

MediaSmart Server

Looking at the server itself…

Click here
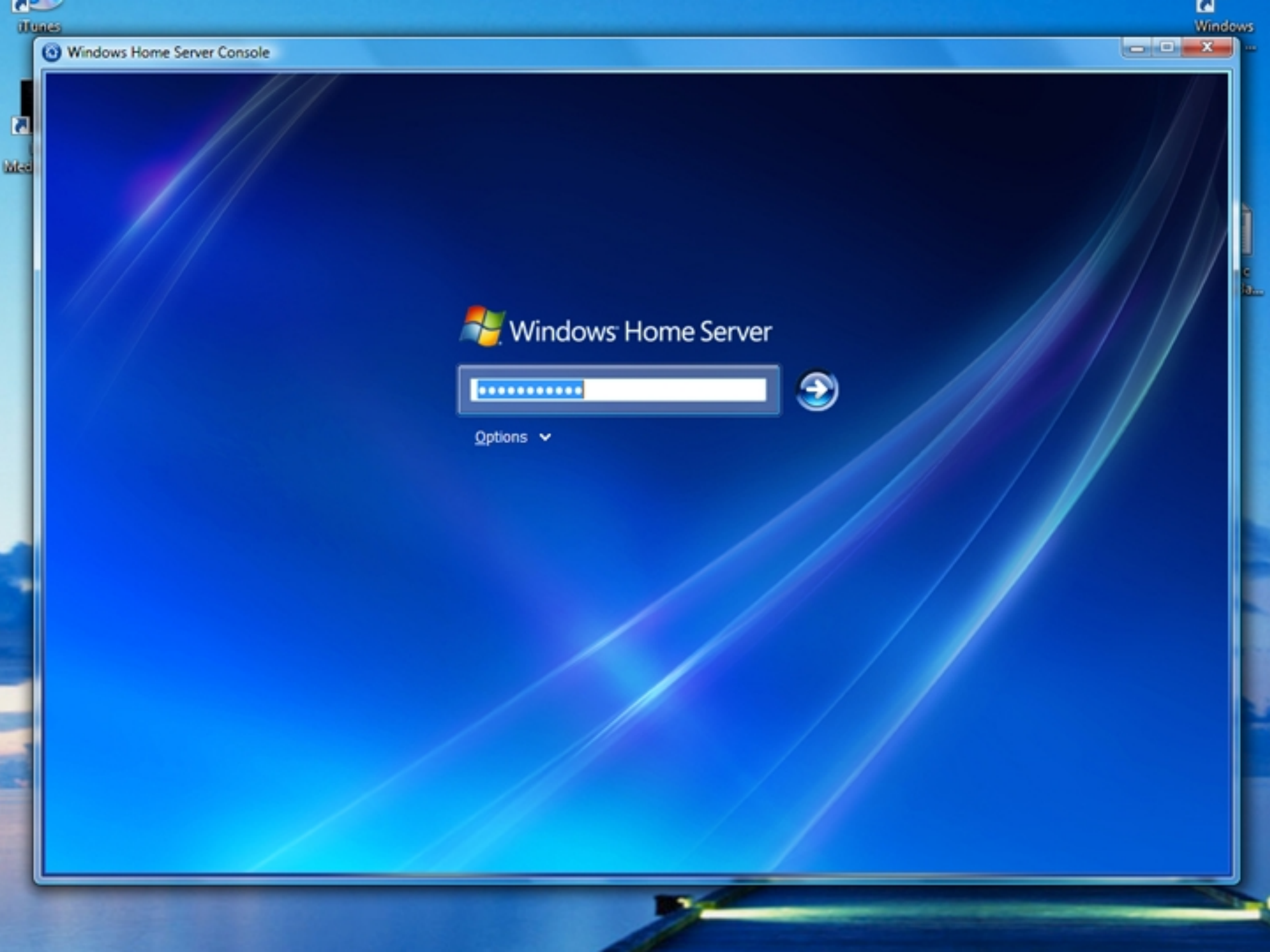
Windows Home Server

Options ⌄

MediaSmart Server | Computers & Backup | User Accounts | Shared Folders | Server Storage | Network Healthy

Windows Home Server

Settings   Help

HP MediaSmart Server

Assistant

HP MediaSmart software updates
Select when HP updates will be installed on your server.

Current Setting	Last Update
Automatically	1/30/2008 6:08:10 AM
Configure	Check for updates Install

Remote Access settings
Configure your personal Web site address and router settings.

Web site address
Not Configured
Configure

Photo Webshare settings
Configure your Webshare and email notifications.

Status
Configured
Modify Webshare

LED brightness control
Adjust the brightness of the lights on your server.

Server Settings for iTunes
Set up the server to stream iTunes music.

Status	Title
Enabled	HP MediaSmart Server
Modify	

Storage Balanced on: 2/28/2008 11:47 AM

Windows Home Server

MediaSmart Server | Computers & Backup | User Accounts | Shared Folders | Server Storage | Network Healthy

Settings   Help

View Backups   Backup Now   Configure Backup   Remove Computer

Name ▲	Description	Operating System	Status
GARSON1	Lorrin's Desktop Computer	Windows Vista Ultimate Edition	Backed up
GARSON2	Ann's Desktop Computer	Windows Vista Ultimate Edition	Backed up
GARSON-LAPTOP	Lorrin & Ann's laptop computer	Windows XP Media Center	Backed up

Storage Balanced on: 2/28/2008 11:47 AM

MediaSmart Server **Computers & Backup** **User Accounts** **Shared Folders** **Server Storage** **Network** Healthy

Windows Home Server

Settings Help

+ Add   Properties   ✕ Remove

Name ▲	Logon Name	Remote Access	Status
Ann Garson	Ann	Not allowed	Enabled
Guest	Guest	Not allowed	Disabled
Lorrin Garson	Lorrin	Not allowed	Enabled
Lorrin Garson-Admin	SuperUser	Not allowed	Enabled

Storage Balanced on: 2/28/2008 11:52 AM

MediaSmart Server | **Computers & Backup** | **User Accounts** | **Shared Folders** | **Server Storage** | **Network** Healthy

Windows Home Server

Settings | Help

+ Add | Properties | Open | Remove

Name ▲	Description	Used Space	Duplication	Status
Ann	Personal folder for Ann	Empty	On	Healthy
Files to Transfer	For depositing files of any type to transfer between Lorrin and Ann's computers	Empty	On	Healthy
Items to Discuss	Often contains photos to review and select	6.07 GB	On	Healthy
Lorrin	Personal folder for Lorrin	Empty	On	Healthy
Music	Shared folder for music	Empty	On	Healthy
Photos	Shared folder for photos	31.73 MB	On	Healthy
Presentations	PowerPoint presentations, often with photographs of our travels	Empty	On	Healthy
Public	Shared folder for miscellaneous files	162 bytes	On	Healthy
Software	Shared folder for software installation programs	1.41 GB	On	Healthy
SuperUser	Personal folder for SuperUser	Empty	On	Healthy
Videos	Shared folder for videos	Empty	On	Healthy

Storage Balanced on: 2/28/2008 2:58 PM

Windows Home Server

Settings   Help

MediaSmart Server   Computers & Backup   User Accounts   Shared Folders   Server Storage   Network Healthy
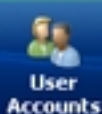
+ Add   Repair   X Remove

Name	Capacity	Location	Status
Storage Hard Drives			
ST350063 0AS SCSI Disk Device	465.76 GB	Internal (SCSI)	Healthy
ST350063 0AS SCSI Disk Device	465.76 GB	Internal (SCSI)	Healthy

Server Storage

Total Size: 931.52 GB
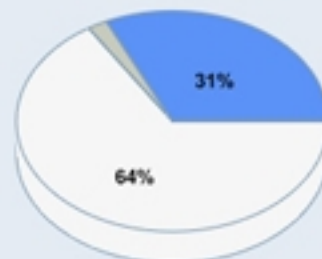
Free Space: 600 GB

31%

64%

- Shared Folders (7.5 GB)
- Duplication (7.5 GB)
- PC Backups (296 GB)
- System (20 GB)
- Free Space (600 GB)

Storage Balanced on: 2/28/2008 11:52 AM

Windows Home Server Console

MediaSmart Server | Computers & Backup | User Accounts | Shared Folders | **Server Storage** | Network Healthy

Windows Home Server

Settings | Help

+ Add | Repair | X Remove

Name

Storage Hard Drives

ST3S0063 0AS SCSI Disk Device

ST3S0063 0AS SCSI Disk Device

Home Network Health ☑

Status: Healthy ✓

✓ **Your home network is healthy**
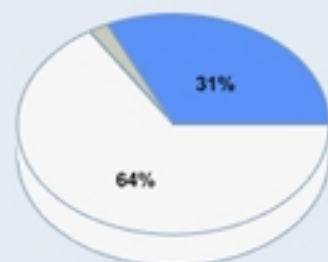Windows Home Server has not detected any health issues.

Learn more about the health of your home network.

Close

Server Storage

Total Size: **931.52 GB**

Free Space: **600 GB**

31%

64%

☐ Shared Folders (7.5 GB)
☐ Duplication (7.5 GB)
☐ PC Backups (296 GB)
☐ System (20 GB)
☐ Free Space (600 GB)

Storage Balanced on: 2/28/2008 11:52 AM

Windows Home Server Console

MediaSmart Server | Computers & Backup | User Accounts | Shared Folders | Server Storage | Network — Healthy

Windows Home Server

Settings   Help

+ Add   Repair   X

Name

Storage Hard Drives

ST3S0063 0AS SCSI Disk [

ST3S0063 0AS SCSI Disk [

Windows Home Server Settings

- General
- Backup
- Passwords
- Media Sharing
- Remote Access
- Add-ins
- Hardware Status
- HP Software Updates
- Photo Webshare
- Settings for iTunes
- Resources

Shut Down

Date & Time

2/28/2008 11:59 AM   Change...

Region

English (United States)

Windows Update

● On (recommended)   Update Now...

✓ Install updates automatically.

○ Off (not recommended)

✗ Do not check for updates.

? How does Windows Update help protect my home server?

Customer Experience Improvement

☑ Help make Windows Home Server better. Sign up for the Customer Experience Improvement Program.

Read our Privacy Statement

Windows Error Reporting

☑ Turn on Automatic Windows Error Reporting (recommended)
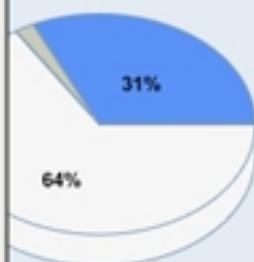
Learn more about Windows Error Reporting

OK   Cancel   Apply   Help

Storage

Total Size: 931.52 GB

Free Space: 600 GB

31%

64%

olders (7.5 GB)
on (7.5 GB)
ps (296 GB)
System (20 GB)
Free Space (600 GB)

Storage Balanced on: 2/28/2008 11:52 AM

MediaSmart Server

Computers & Backup

User Accounts

Shared Folders

Server Storage

Network Healthy

Windows Home Server

Settings   Help

+ Add   Repair   ✕

Name

Storage Hard Drives

ST3S0063 0AS SCSI Disk D

ST3S0063 0AS SCSI Disk D

Windows Home Server Settings   ✕

⚙ General

💻 Backup

🔑 Passwords

🎵 Media Sharing

🌐 Remote Access

📇 Add-ins

🖥 Hardware Status

💿 HP Software Updates

🌅 Photo Webshare

🎧 Settings for iTunes

🪟 Resources

🔴 **Shut Down**

Backup Time

Home computers are backed up during the backup time.

Start time: 12:00 AM   End time: 6:00 AM

❓ Learn more about what happens during the Backup Time

Automatic Backup Management

Number of months to keep the monthly backup: 3

Number of weeks to keep the weekly backup: 3

Number of days to keep the daily backup: 3

❓ Learn more about Automatic Backup Management

Backup Cleanup

Backup Cleanup automatically deletes old backups during the Backup Time on Sundays. You can also click Cleanup Now to start Backup Cleanup.
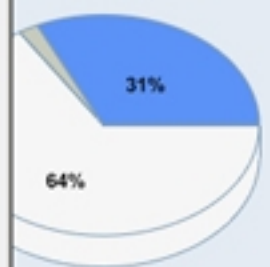
Delete All   Cleanup Now

❓ What is Backup Cleanup?

OK   Cancel   Apply   Help

Storage

tal Size: **931.52 GB**

e Space: **600 GB**

31%

64%

olders (7.5 GB)

on (7.5 GB)

ps (296 GB)

System (20 GB)

Free Space (600 GB)

Storage Balanced on: 2/28/2008 12:00 PM

Competitors

- LaCie Ethernet Disk Mini—Home Edition
  - Basic backup
    - Backup & restore files
    - Schedule folder backups
    - *No system recovery feature*
  - NAS (500 GB) capability to create & share files
  - Streaming video & audio (including iTunes)
  - $210
  - See: *PCWorld*, April 2008, p. 56. and http://www.lacie.com/products/product.htm?pid=10994

Competitors

- Iomega HomeCenter Server. Due 1st quarter 2008. (see http://mswhs.com/2007/11/05/iomega-homecenter-server/)

- Several products available in Europe

Information & Reviews

- ## YouTube: http://www.youtube.com/watch?v=iwRaT1onAFM

- ## C/NET:
  http://reviews.cnet.com/desktops/hp-mediasmart-server-ex475/4

- ## PCAdvisor:
  http://www.pcadvisor.co.uk/reviews/index.cfm?reviewid=1687

- ## ZDNet:
  http://review.zdnet.com/desktops/hp-mediasmart-server-ex475/4

- ## NetworkWorld:
  http://www.networkworld.com/columnists/2008/012308-cool-tools.html?page=1

Books

- *Windows Home Server User's Guide*, Andrew Edney, Apress, Berkeley, CA, 2007

- *Windows Home Server for Dummies*, Woody Leonard, John Wiley, New York, 2007

- *Microsoft Windows Home Server Unleashed*, Paul McFedries, Pearson/Macmillan Technical Publishing, New York, 2007

References

- Wikipedia: http://en.wikipedia.org/wiki/Windows_Home_Server

- Windows Home Server — Microsoft: http://www.microsoft.com/windows/products/winfamily/windowshomeserv

- Reviewer's Guide from Microsoft: http://download.microsoft.com/download/3/6/8/368DF7AB-24BD-4E0E-8

References (cont.)

- Windows Home Server Team Blog:
  http://blogs.technet.com/homeserver/

- "We Got Served": http://www.wegotserved.co.uk/

- Windows Home Server Ad-Ins:
  http://www.wegotserved.co.uk/windows-home-server-add-ins/

The End

Questions? Comments?