

PC Backup

&

Recovery



Why Backup?

- It's virtually guaranteed if you use computers that eventually, something will happen that will require you to restore your system to an operational condition. It can be the result of a hardware or software crash, or the effects of a virus or other malware infection.
 - How many have a backup procedure in place?
 - How many actually follow it?
 - Establish a plan and stick with it.
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Backup

- Types of Backup
 - Image – Backup all used HD Sectors
 - Full – BackUp everything
 - Differential – BackUp changed files
 - Incremental or Progressive
 - Selective – BackUp selected files
 - Compression, Zip files – Save storage space.
 - Offsite Storage
 - Other Location
 - Safe Deposit Box
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Backup 2

- Images can be saved to internal or external HD's, CD's, DVD's or network drives
 - Image Backup Advantages
 - Backs up all used HD sectors
 - Can restore full HD with all info and drivers intact
 - Can restore HD in relatively short time
 - Saves having to find all your install CD's, registration codes and documentation
 - Some image backups allow selective restore of individual files so you can recover a damaged or accidentally deleted file.
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Backup Media

- **Backup Media**
 - Floppy, Tape, Zip
 - CD, DVD
 - 2nd HD, External HD or other External Device
 - External USB 2.0 Drive.
 - Buy a housing for an old, or new, HD
 - USB 1.1 - 12 Mb/Sec, USB 2.0 - 480 Mb/Sec
 - External Firewire (IEEE 1394) Device
 - 400 Mb/Sec
 - Dedicated Backup Device or NAS
 - USB 2.0/Firewire or Ethernet
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Backup Media 2

- **Network Attached Storage**
 - Linksys NSLU2
 - Netgear ReadyNAS Duo RND2150
 - USB 2.0 Ethernet connected HD
 - 10/100/1000 Mb/Sec, Wireless 802.11b - 11 Mb/Sec, 802.11g - 54 Mb/Sec, 802.11n – 100 Mb/Sec
- **NASLite / FreeNAS**
 - SMB Ethernet Network File Server
 - Large HD('s) installed in old PC
 - Boot's from Linux based floppy disc.



Organizing your files

- My Documents
 - Subfolders
 - Pictures
 - Video
 - Music
 - Txt
 - Other
 - E-Mail
 - Other Categories
 - Program Files
 - Downloads
 - Burn to CD or DVD
 - Cataloging CD's
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Partitions and File Systems

- Partitions
 - Bios limitations
 - 2 GB Limit
 - 137 GB Limit
 - 4 TB limit
 - File Systems
 - Windows
 - Fat
 - Fat32 4 GB file size limit
 - NTFS
 - Linux
 - Ext2, Ext3, Reiser
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Backup Software

- **Commercial**

- Norton Ghost
- Retrospect
- GoBack
- Boot It
- Acronis True Image
- Paragon Drive Backup

- **Free**

- NTBackup
- DriveImageXML
- Macrium Reflect
 - Free & Commercial



Recovery Tools

- “Safe Mode”
 - Floppy Boot Discs or CD's
 - Recovery tools
 - Partition tools
 - Memtests
 - Hardware discovery and test
 - System recovery boot discs
 - Booting from CD's/DVD's. Most new computers no longer include floppy drives
 - Set Bios to boot from CD, USB, Floppy, HD
 - Create Rescue Boot CD's that load virtual floppy images.
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Recovery Tools 2

- Recovery Tools
 - Partition Magic
 - Windows Recovery Console
 - Knoppix / DSL / System Recovery CD
 - UBCD / UBCD4Win
 - Bart PE
 - 911 Recovery CD's
 - Boot Floppy's, Boot CD's/DVD's
 - Installation CD's
 - EmergencyBootDisc
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Links

- **Computer Users Need a Good Backup Plan**
<http://www.washingtonpost.com/wp-dyn/articles/A64458-2004Aug14.html>
 - **Backup Strategies** http://www.geekgirls.com/windows_backup_strategies.htm
 - **External Storage: Little Big Drives**
<http://www.pcmag.com/article2/0,1759,1639442,00.asp>
 - **Build It: External USB 2.0 Hard Drive**
<http://www.extremetech.com/article2/0,1558,827981,00.asp>
 - **Build a NAS Device With an Old PC and Free Software**
<http://www.smallbusinesscomputing.com/testdrive/article.php/3719706>
 - For more information, **Google “windows backup”**
 - **Free Hard Disk Backup / Restore and Image / Cloning Utilities**
<http://www.thefreecountry.com/utilities/backupandimage.shtml>
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Links 2

- **NAS Software**
 - NASLite - <http://www.serverelements.com/>
 - Freenas - http://www.freenas.org/index.php?option=com_content&task=view&id=12&Itemid=26
 - **NAS Hardware**
 - Netgear ReadyNAS Duo RND2150 - <http://www.smallbusinesscomputing.com/buyersguide/article.php/3762176>
 - **Backup Software**
 - Paragon - <http://www.paragon-software.com/>
 - Acronis - <http://www.acronis.com/homecomputing/products/trueimage/>
 - Macrium - <http://www.macrium.com/reflectfree.asp>
 - DriveImageXML - <http://www.runtime.org/driveimage-xml.htm>
 - BootIt - <http://www.terabyteunlimited.com/index.htm>
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Backup & Recovery

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