



Maestro Computing Services

Perfecting Your Computer Backup System

Maestro Computing Services

Dedicated to building a better relationship
between you and your computer
Your Backup Specialist

Personalized Service since 1985
Weekend & Evening Support Available

Please contact Elliott Stern aka the Maestro:
maestro@pcmaestro.com
(310) 880 9891





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Why the Maestro ?

Different interpretations

- Teacher *in Spanish* *el maestro*
- Conductor *in music, opera*
- Maven *in Hebrew*

(Trusted expert in a particular field, who seeks to pass knowledge on to others)





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The Maestro defined:

- Using the interpretation as “teacher”
- You will find me asking lots of questions.
- These questions are designed to make you think
- How protected and how thorough is your computer backup system?





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Perfecting Your Computer Backup System

Outline of Perfecting Your Computer Backup

- Do you have a Backup
- How and Where to Backup
- What and When to backup
- Maestro's 4R's Model for Better Backup
- Local Backup Archive Files
- Cloud Backup
- Built in Backup Utilities
- Computer ER & CPR backups (Disaster Recovery)



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How many have a backup system?





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How many know about World Backup Day?

- Yes, every March 31 celebrate World Backup Day
- Don't be an April Fool, backup your data.





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Why backup at all?

Your computer crashed or is not working normally

Why ?

- Virus /spyware infection
- Damaged Computer Hardware
- Operating System Damage or Corruption
- Other Database File Corruption
- Failure to boot up
- BSOD **Blue** Screen of Death
- Lost files
- Stolen Computer
- Files accidentally deleted
- **Standard repair tools ineffective**
- Other reasons





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Solution

Computer backup system

What is a backup?

- A backup is an extra copy of the information saved in your computer.
- The copy is saved on something outside, away from the computer.
- The copy is in a “digital/electronic” format- not paper copies.
- The “something” is called backup media.





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How much do you really know about your backup system?





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Do you follow a *Plug and Pray* then
Walk-Away Backup Strategy?





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Plug and Pray for Backup?

Most drives purchased at big box retail stores are designed for plug and pray then walk away backup.

- The hardware is inexpensive; the actual backup software is free.
- Simply plug in the drive and never again worry about your files.
- **Start worrying!**
- You get what you pay for.
- Is “free” software and “inexpensive” hardware the best choice to manage your priceless saved information?





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How would you like a backup system for your computer?

- That runs automatically every night?
- That can send you an email when the backup has completed?
- That will shut off your computer when the backup has finished?
- That allows you to save your information from an unlimited number of computing devices (Windows, MAC, iPhone, iPad, Android)?



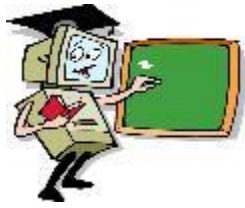
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How would you like a backup system for your computer?

- That just works ?
- All for under \$60 /year for up to 300 GB of backup capacity.
- Contact the Maestro and sign up for





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How and Where to backup

- Use backup software and backup media
- Use automated or semi-automated backup/copy scripts to create backup jobs and save the stuff in your computer.
- Save to external, removable, redundant backup media:
 - External USB drive
 - CD/DVD (limited capacity)
 - Flash drive
 - On-line backup service





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What should be backed up?

- Anything you cannot afford to lose
- Saved documents, pictures, music, videos, drawings, etc.





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When should you backup?

- Regularly and on a set schedule





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What should **also** be backed up?
And is so often overlooked

- Downloaded Software Installation Files
- Other Software CD/DVD Media
- Along with software installation:
 - Activation Codes
 - Serial #'s
 - Install Codes
 - License Keys and other info
 - Windows License Info





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**Manage your digital downloads of
purchased software**

Downloaded Software Installation Files





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Two types of backups

- Saved Files only (word, excel, pictures, financial, video, etc.)
- Entire Computer (image backup) including:
 - All saved files
 - Operating system
 - Installed software
 - User settings
 - Device settings (printers, scanners, webcams, network, etc.)



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Where to backup Backup Media

- Local drive (flash drive, USB external drive)
- On line backup services
- CD/DVD (limited capacity)



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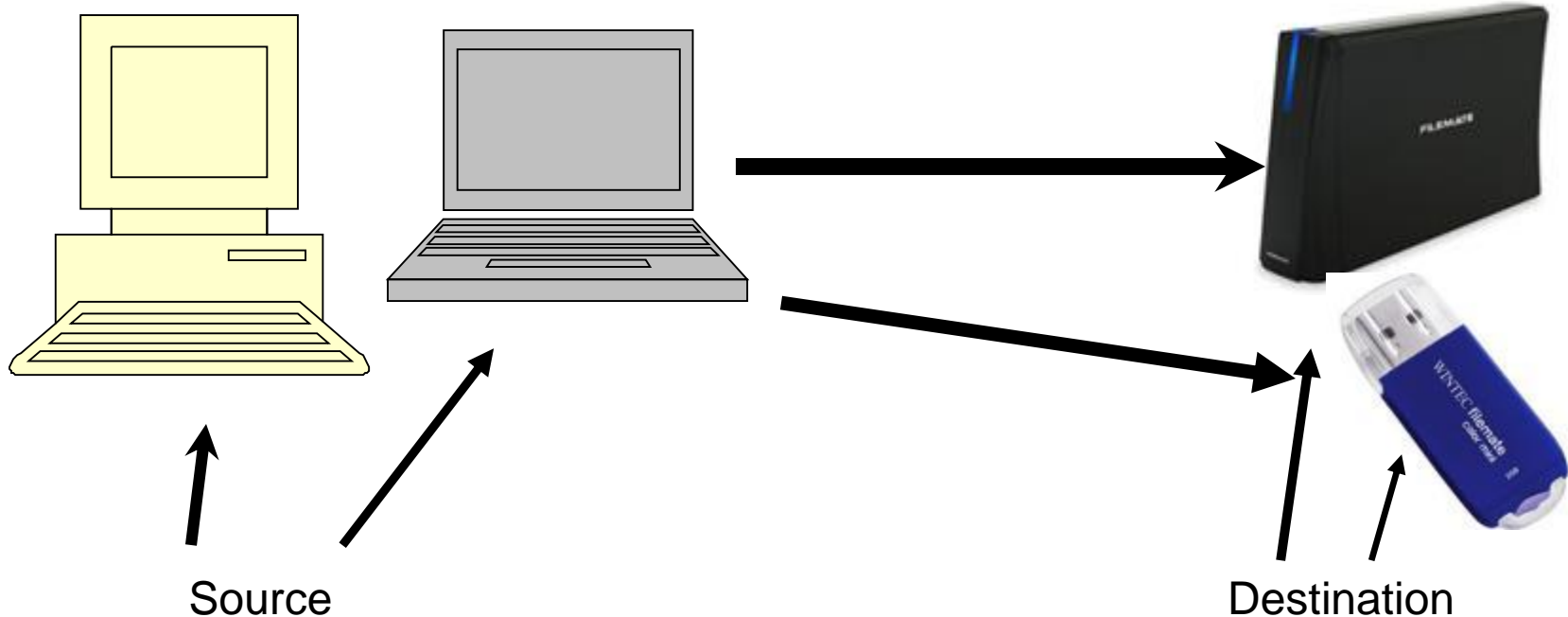
Where to backup-Local Backup

From or Source

Desktop/Laptop/Notebook

To or Destination

USB External Drive/
USB Flash Drive





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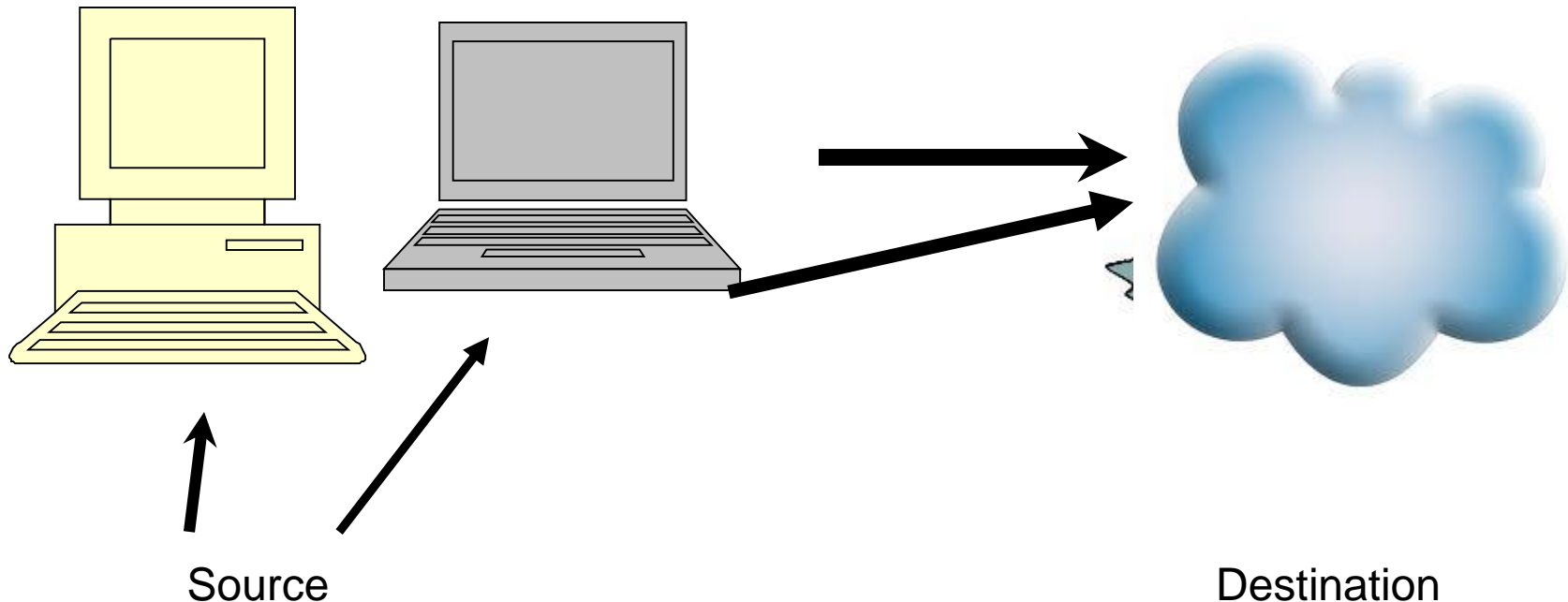
Where to backup - On Line Backup

From or Source

Desktop/Laptop/Notebook/SmartPhone/Tablet

To or Destination

The Internet Cloud





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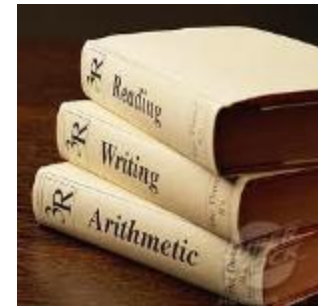
The Maestro's 4 R's Model of Better Backups

Your backup system is not complete --

---Your system is not fully protected

Unless you follow the Maestro's 4 R's Model for Better Backups:

1. Redundant Media
2. Removable Media
3. Review your backup
4. Restore /Recover



The 4 R's are the maestro's versions of reading, righting, rithmetic



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The Maestro's 4 R's Model of Better Backups

Redundant Media

- Use more than one set of backup media
- Every type of backup media can fail.
 - Everything that you use in a backup is subject to the same wear and tear as the computer that is being backed up

Redundancy:

- Duplicate, Triplicate, Quadruplicate and more sets of backup media.
- Some clients have 6 sets of backup media. Monday – Friday plus a spare





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The Maestro's 4 R's Model of Better Backups

Removable Media

- Backup media should be removed from the computer it is backing up.
- Backup drives left on and connected to the source computer can be damaged by viruses, power issues, fire, flood, file deletion, theft, etc.
- Backup your computer, then unplug the backup media





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The Maestro's 4 R's Model of Better Backups

Review your backup

- OK, so you have a backup system
- It's set to backup every day, every night, every Saturday at 3 AM?
- Whatever
- It all works. Right?
- Of course, doesn't everything in computers work as they are supposed to?

- Flawlessly?
- Without error?
- Do you really know?





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The Maestro's 4 R's Model of Better Backups

Review your backup

Do you really know?

The only way to really know is:
Review the backup system

Some backup systems :

- Provide a backup status log after every backup job
- Can email you the backup status log (successful and failed jobs)
- Can print out the backup status log
- If you are not reviewing these, you don't know.

If you are not getting email notification ..

You should get better backup software





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The Maestro's 4 R's Model of Better Backups

Restore

- Backups are only as good as your ability to restore what you have backed up.
- Do you know how to restore?
- Have you tried?
- Do you think is as easy as 2 clicks and magically all your information is back?
- Think again?
- Don't ASSUME restore is that easy.
- We all know what ASSUME really stands for.





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The Maestro's 4 R's Model of Better Backups

Restore

- Learn your backup software's RESTORE function
- Test it
- Run a test restore periodically
- When your system has crashed and you need that important information
- You need it NOW
- You may not know how to get it
- Learn the restore/recover files function for your software--- learn it before you need it.
- Test it before disaster strikes.
- It will be a great tool to learn





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Components of Better Backup Software

- Available for download, purchase or upgrade to newer versions
- Can be installed/uninstalled
- Menu items should include:
 - Backup with options and backup file/folder/drives selections
 - Restore with options (restore to alternate or original folder location)
 - Optional backup scheduling with advanced features
 - Backup logs/job status log (with/without email and print notification)
 - The ability to backup manually or on schedule



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Components of Better Backup Software

- Optional tools for special functions (boot recovery media)
- Optional features to backup special types of files/folders/engines
 - Open file backup
 - SQL Server
 - Share Point Server
 - System State
 - Outlook /Exchange Server



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Backup Archive Files



Created using backup software onto external USB Drive

- Think of a backup archive file as your shopping cart at the grocery store.
- You put all kinds of stuff in the cart:
- Fruits, vegetables, milk, candy, meat, bread, paper, and probably a trashy magazine while waiting at the check-out counter.
- A backup archive is your shopping cart
It contains your Word and Excel files, pictures, music, Quicken stuff, perhaps saved game.
- The only way to get to any file is to unpack the groceries, unpack the archive file to get to one single word file or saved picture.





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Unpacking your backup archive

- Backup software creates backup archives
 - Usually requires the restore function
 - Before you can open, view or edit a file or folder, you will need to “restore” from the backup archive.
 - Archives are saved in a proprietary format unique to each backup software company.
 - One backup software title cannot unpack or restore from another title’s archive file, they are **not** interchangeable.
 - There is no industry standard for backup archives.



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Unpacking your backup archive

- Copy or synchronization software:
 - Creates true duplicate copies
 - A useable, editable version of your Word, Excel ,pdf, jpg, or other files.
- Most on-line backup services save a copy of your files, not a backup archive file
- On-line backup is a more efficient method, though it can be slower.



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Local Backup/Copy Software

Maestro's Recommendation:

EaseUS Backup (todo-backup.com) (easeus.com)

Novastor (novastor.com)

FolderClone (folderclone.com)





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Cloud /Internet Backup Services

- Reliable
- Safe
- Cost Effective
- No extra hardware needed

Maestro recommends:

- Get your head (and your data) into the clouds
- It's closer to heaven than you may think





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What is “the cloud”?

- The cloud is not a place.
- The cloud is really a freeway, a method to get your data copied from one place to another.
- Yes, this “information superhighway” can suffer breakdowns, traffic jams, sigalerts and highway closures.
- We do not backup our information “into” the cloud
- We actually backup “through” the cloud.





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What is “the cloud”?

- Information is saved and stored in computers that are managed by companies big and small.
- These computers physically exist somewhere on various on ramps, off ramps, and rest stops along the information superhighway.
- This is where your information resides when it is stored “in the cloud”





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Why “the cloud” ?

- When creating the internet, our friendly technology nerd fathers needed a symbol to represent the internet in their flow charts and diagrams.
- The agreed upon symbol was a cloud.



Further interesting reading.

<http://www.theatlantic.com/technology/archive/2011/09/clouds-the-most-useful-metaphor-of-alltime/245851/>



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Cloud /Internet Backup Services

What do you need to know ?

- Provider name
- Provider website address
- Your service login name, email address, password or other method to login
- Method of payment
- Frequency /renewal of payment (monthly, annually, etc.)
- Retention Policies /Delete policies
- Get comfortable with your cloud backup service design





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Cloud /Internet Backup Services

Maestro Recommends:

- Idrive (idrive.com)
- Ibackup (ibackup.com)





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Cloud /Internet Backup Services

Advanced Features

- Backup your smart phone
- Retrieve backed up information and files from smart phone
- Access saved files from alternate source
 - Another computer
 - Smart Phone with internet access
 - Tablet/iPad with internet access
- Share files with others via email link
- Backup Facebook pictures
- Versioning





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Limitations in Backup (Local and Cloud)

What is missing from your backup?

- Backup systems will only backup what you tell them to include in the backup job.
- Full system backups should backup the entire computer.
- Selective backups /cloud backups can miss important files and folders.
- It is important that you carefully identify all the files and folders you need to backup.
- A good understanding of the computer's file/folder system and an organized system for saving your work is recommended.



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Limitations in Backup (Local and Cloud)

What is missing from your backup?

- There may be misplaced/stray files on any system.
- Strays can get lost and be overlooked by the backup system.
- Take an inventory of your important files and folders
- Ask if they are included in your backup and if not, why not?
- Both Windows and MAC have preferred, logical filing systems



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Built-in Backup Utilities

Some software has its own backup utility:

- Quicken/Quickbooks/Turbotax
- Most Accounting Software
- Most Contact management software
 - Act, Goldmine, Chaos, Contact Plus, My series of software titles (my database, my mailing list, etc.)
- Industry specific software:
 - Legal, Medical, Dental Practice Management, other
- Even Facebook has a way to download your FB information to your computer
- iTunes has specialized instructions to backup your iTunes music library and playlists.



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Built-in Backup Utilities

Special Notes

- Did you know that MS Outlook does not have a built-in backup utility?
- That means your *all-important* email messages and *address book* are subject to damage, corruption or loss.
- Most Outlook files are contained in a large PST file which should be backed up and/or copied regularly.
- Outlook files are normally hidden.
- It's not a good situation for something many of us use regularly
- Fortunately there are 3rd party backup utilities for Outlook



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Built-in Backup Utilities

Special Notes

- Using Mozilla's Firefox for browsing?
- Using Thunderbird for email (Mozilla's sister product)?
- Download the free Mozbackup to backup your Firefox & Thunderbird information.



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Built-in Backup Utilities

- Get in the **good** habit of using these built-in backup tools.
- These should be used in addition to other backup software you have.

WHY?

- These backups could be your life preserver





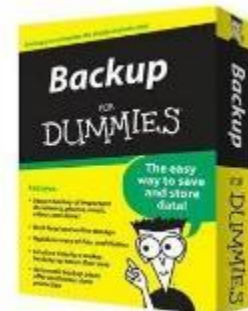
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Built-in Backup Utilities

Why use these built-in backups?

- If you need help from a software provider's technical support, they know how to use their own backup utilities.
- They do not know and may not help you if using other backup software.
- There are hundreds of backup titles available.
- Cannot expect tech support to know how to use every backup software on the market.





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Built-in Backup Utilities

Backup Your Internet Router

- Your **internet router** contains specific information about how your internet works including :
 - Your internet provider's settings
 - Wireless SSID name and wireless control /security configuration settings
 - Other router/internet specific information
 - Router username/password info to login and manage the router



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Built-in Backup Utilities

Backup Your Internet Router

- This information is the router's configuration settings.
- Better routers have a built-in backup function to backup the router's configuration information
- This information can be backed up to a router configuration file anywhere on your computer, flash drive, external drive, etc.
- **A electrical disturbance can wipe out the configuration settings –disabling the internet or disabling your wireless access to the internet.**



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Emergency Room Issues

Computer CPR

There are a number of situations where your computer need CPR.

- An un-repairable virus or other infection
- An un-fixable damage/corruption to the operating system
- Lost/stolen computer
- Hard Drive failure





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Emergency Room Issues

Computer CPR

- Regardless of the symptoms, if your computer cannot be easily fixed, you may need ER/CPR repair & recovery tools.
- **WARNING:** Some of these ER/CPR techniques result in complete loss of all saved files and installed software
- This is where and when you'll be glad you have a complete backup.



"You caught a virus from your computer and we had to erase your brain. I hope you've got a back-up copy!"



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Computer Emergency Room

Repairs and Prevention

- It is your responsibility as a computer owner to prepare, create or purchase the following computer backup & repair tools before you experience a computer problem.
- Your local Computer ER may not have them available for your unique computer system.





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Computer Emergency Room Repairs and Prevention

Repair Tools:

- Repair Media for your computer
- Factory Restore Media from your computer mfg.

A comprehensive backup system which includes:

- System image backup of your entire computer
- Bootable recovery media from your backup software
- Redundant, Removable backup media (USB Drives)





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Computer Emergency Room

Create Repair Media

- Windows 7 - DVD Only
 - Control Panel- Backup and Restore
- Windows 8 - Flash Drive only
 - Control Panel Recovery





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Computer Emergency Room

Create Factory Restore Media

- Unique options for each make, model, brand of computer
- Do not rely on hidden recovery partition or utilities that are built into the system
- If the hard drive fails, the hidden recovery partition fails with it.
- Always create your own restore media set onto external media (DVD or Flash Drive)
- Purchase Factory Restore Media whenever possible (\$20-\$50 cost estimates)





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Disaster Recovery/Data Recovery Tricks

Problem:

Your system has an un-repairable /unfixable problem:

- Your computer is seriously infected with a virus or spyware infection
- Windows will not start up properly
- You or your computer technician have tried everything to clean, repair or fix the problem but the problem persists.

Solution # 1:

- Use System Image backup and bootable CD/DVD/FlashDrive for your specific backup software
- Restore from the last good backup





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Disaster Recovery/Data Recovery Tricks

Solution # 2:

- Clean install of Windows
- Restore system from factory installed recovery DVD or recovery utility (if available)

Warning:

- These usually result in a complete loss of all your saved information, software, settings and everything else.
- Your hard drive is erased as part of these recovery methods.
- Nothing is recoverable
- A very recent backup, recent cloud backup or image backup should help.





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Disaster Recovery/Data Recovery Tricks

Solution # 3:

- Get a new hard drive (probably larger capacity and faster)
- Install inside the computer
- Save the old hard drive- it may have valid saved files
- Use System Image backup **and** bootable CD/DVD/FlashDrive for your specific backup software
- Restore from the last good backup
- Convert old hard drive to external USB drive
- Recover information from old hard drive if available





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Disaster Recovery/Data Recovery Tricks

Solution # 4:

- Reinstall Windows if possible on a new hard drive
- Reinstall all drivers, software and rebuild computer
- Restore files from old hard drive





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Disaster Recovery/Data Recovery Tricks

Problem:

- Your system will not start properly
- You do not have original Windows CD/DVD install media
- **This has become the industry standard for quite some time**

Solution: (prepare to repair)

- Create windows repair/recovery media **before** you experience a problem
- These utilities are built into Windows 7 and 8 but they must be created before you experience a problem.





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Disaster Recovery/Data Recovery Tricks

Warning

- These Windows repair tools do not always work.
- Microsoft may recommend a clean re-install (wiping out all saved data)

Recommendations:

- Use a combination of daily cloud backup and monthly/quarterly image backup to USB Drive for full protection





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Disaster Recovery Bootable CD/DVD/Flash Drive

Proprietary repair from your backup software

- Backup software usually includes the ability to create a recovery/bootable CD/DVD /Flash Drive so that you boot up your computer with the backup software installed in order to retrieve all or a few backed up files.
- Remember to create this recovery CD/DVD/Flash Drive from your working backup software before you experience a problem.
- If the software is updated, make a new recovery CD/DVD/Flash drive to correspond to the updated version.
- Make several copies and put them in a safe place.



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Disaster Recovery/Hard Drive Failure

Problem:

- Your hard drive has suffered a hardware failure
- Probably making constant clicking noises
- Or no sound at all and no vibration as the drive platters spin (or don't)



Solution:

- Data Recovery from a hard drive data recovery specialist
- They have extensive experience and a good record of data recovery





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Disaster Recovery/Hard Drive Failure

This solution is \$\$expensive\$\$ but the service providers are readily available.

- Kroll On Track (krollontrack.com)
- Drive Solutions (drivesolutions.com) (Westlake Village)
- Other providers





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Important information to know (backup) about your computer network

Examples:

- Router username/password/IP address
- Internet connection login information (required by ATT and others)
- Router configuration settings (internet)
- Firewall exceptions and rules
- Internet filtering rules
- Email filtering rules



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Good Practices in Backup

- Redundant media –more than one set of backup media
- Removable media that is taken off site, stored in safe place
- Universal backup software (not server based)
- Universal backup hardware (not proprietary with special connections/special hardware)
- Review Backup logs and activity –get email of the backup log.
- Use scheduled backups at the same time every day or day of week.
- Test restore





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Good Practices in Backup

- Disk Imaging – full system backup
- Create Backup Disaster Recovery CD/DVD/Flash Drive





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Bad Practices in Backup

- Using the same backup media over and over and only having one set of that media. (not redundant backup)
- Backup to same hard drive where data is saved
- Backing up without first saving all work, closing all open programs
- Backing up without first restarting your computer
- Using an external USB Drive or flash drive as an expansion drive rather than for backup
- Using an external drive (USB or flash) to save original files





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Bad Practices in Backup

- Forgetting to create Disaster Recovery CD/DVD/Flash Drive
- Forgetting to backup the backup software and installation license code.
- Assuming backup is working without checking backup logs
- Backup media remains always on and plugged in to system it is backing up
- Windows system restore is not a backup nor can it fix virus or spyware infections
- No scheduled backup – no regular backup
- Backing up documents in the recycle bin
- Using wireless internet for on-line backup (too slow)





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Nova Backup

novastor.com

R Drive Image (backup & imaging)

r-tt.com

Acronis

acronis.com

EaseUS (backup & imaging)

todo-backup.com

Backrex (for Outlook and Internet information)

backsettings.com

Intuit (Quickbooks & Quicken)

intuit.com

Genie Backup

genie9.com

Carbon Copy Cloner (Mac)

bombich.com

SuperDuper (Mac)

superduper.en.softonic.com/mac

TimeMachine (Mac)

built-in backup feature of OS X

Mozbackup (Mozilla Firefox & Mozilla Thunderbird email)

mozbackup.jasnapaka.com

Other



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Selected Copy software

- **FolderClone** folderclone.com
- **Vice Versa** tgrmn.com
- **SmartSync** smartsync.com

Maestro Computing Services can provide sales, service and support for titles in RED



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Selected On-line backup services

- **Idrive** idrive.com
- **Ibackup** ibackup.com
- **Mozy** mozy.com
- **Carbonite** carbonite.com
- **Iron Mountain** ironmountain.com
- **DropBox** dropbox.com

Maestro Computing Services can provide sales, service and support for titles in RED



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The Best backup solution

All too often I am asked to recommend:

- The “best” computer
- The “best” backup
- The “best” printer
- The “best” anything

There is no “best”

- Some solutions are “better” than others but what works for you may not work for someone else or on someone else’s computer.
- Cost can also make a difference.



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USB External Drive Issues

USB Alphabet Soup in Windows

USB (Universal Serial Bus)

- Powerful standard for connecting computers and peripherals
- External USB Drives/Flash Drives are assigned an alphabetic letter when plugged in to your computer
- Backup software scripts look for the same drive letter when running a backup job
- It is possible that the same external drive/flash drive can be assigned a different letter at different times on the same computer.



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USB External Drive Issues

USB Alphabet Soup in Windows

- Depends on
 - The number (quantity) of USB external drives available to the system
 - The order in which they are plugged in and turned on
- Flash Card readers with multiple slots can assign up to four drive letters
- Some all in one printers have built in flash card readers..this can take up another drive letter
- Mapped network drives and NAS drives can also use up drive letters.



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USB External Drive Issues

USB Alphabet Soup in Windows

- Always try to turn on, plug in all your external USB connected equipment consistently and in the same order.
- There are ways to change the drive letter assigned to your backup drive without restarting your computer, turning off or unplugging them.



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Backup Consulting Services

- Review and analysis of your existing backup
- Recommendation of new, improved backup system
- Sales, Support and Service of backup systems hardware & software (local and on-line services)
- Backup monitoring via email notification and remote access to your computer
- Backup monitoring with on-site service
- Free limited day trials of selected backup software
- Disaster Recovery, data recovery of non-functional systems
- System documentation: what information is overlooked in your backup system



Maestro Computing Services

Perfecting Your Computer Backup System

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Computer Consulting Services

- Sales, Service, Support of Windows and MAC systems, networks, servers, related peripheral hardware and software
- Broadband (DSL, Cable) high speed internet
- Webhosting /email hosting and web domain registration
- E-waste removal /disposal of old outdated electronics
- Complete system documentation of the entire computer system
- Remote Access solutions
- Repairs and upgrades



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Backup System Summary

- **Do** get and use a backup system for all your computers and digital devices
- **Do not** use the Plug and Pray then Walk Away method of backup management
- **Do Prepare** all recovery media sets from both Windows and your backup software
- Stay current with your backup solution and software. If it become out of date or the company goes out of business, your data is at risk of loss. If you get a new computer, upgrade your backup software to be compatible with the new computer and latest operating system.



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Backup System Summary

- Backups are your saved data insurance policies.
- Use a combination of cloud backup and local USB backup services for complete backup protection
- A cloud backup alone does not backup your entire computer.



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Perfecting Your Computer Backup System

Maestro Computing Services

Dedicated to building a better relationship
between you and your computer
Your Backup Specialist

Personalized Service since 1985
Weekend & Evening Support Available

Please contact Elliott Stern aka the Maestro:
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