

Online Backup Quick Guide

Whether at home and in the office, each day we save an increasing amount of data (documents, worksheets, contracts, pictures, drawings, projects, videos, music, etc.). Protecting this data is essential but, at times, we only realize this when it's too late.

Today, traditional backup devices (DVD, external HD, USB keys, floppy disks, etc.) have become obsolete since unreliable, costly and inconvenient. A new service is now on the market that promises to revolutionize how we protect and organize our files: Online Backup.

The purpose of this guide is to help you select the Online Backup service that best meets your business or home needs.

What is backup and why is it so important?

Backup is nothing more than a copy of your data, stored to prevent it from being lost or stolen. All system administrators and computer experts suggest you protect your data with one or more backup copies.

Normally, information is saved on optical storage devices like CDs or DVDs that are cheap but subject to wear. Hardware devices like USB keys or external HDs are also used but cost more since they only last a couple of years¹ (Failure Trends in a Large Disk Drive Population). You can now use a new and increasingly popular way to protect your files: Online Backup.

Over the last 10 years, digital content production has grown exponentially throughout the world, confirming the UGC – User Generated Content - generation trend launched in the mid '90's. Studies indicate that the continuous growth of generated content will reach billions of Gigabytes: from 12 Exabytes (billions of billions of bytes) produced in 2002, to 161 Exabytes in 2006 to the 988 expected for 2010 (source: *University of California, Berkeley*).

Losing 'crucial' data has become our worst nightmare. For this reason, the search for new file protection systems is in continuous evolution. Online backup seems to be the best solution to this problem, thanks to continuously lower connectivity and storage hardware costs and to extremely simple and convenient services.

What is Online Backup?

Online Backup is a service managed by software usually installed on your PC to save files on a remote server via a secure internet connection. This new internet user tool automatically backs up any type of file.

How does it work?

The following is the classic procedure (which may vary according to the service provider): after downloading the software (client), the installation wizard runs. When complete,

¹ Failure Trends in a Large Disk Drive Population http://labs.google.com/papers/disk_failures.pdf

you can choose whether to backup your entire PC or just some folders. From this moment on, the software automatically monitors the files, backing up and protecting them whenever the user changes or creates them. Some software programs continually monitor and backup files (in real time), others are set to run every 24 or 12 hours.

There are multiple advantages to Online Backup over traditional storage devices. Here are some examples:

- A) Files are securely transferred and saved. Some programs use 128 bit encryption, greater than or equal to the ones used by banks.
- B) File copies are physically separate from their originals. This way they are protected even against theft or fire.
- C) Large storage space is available, generally scalable at an additional cost when needed.
- D) Data can be accessed by password whenever and wherever. Some service providers even permit access via cell phone. You'll never need to worry about taking your computer with you. Your files are always online.

What technical features should a good Online Backup service have?

There are not a lot of Online Backup service providers in the world although they are increasing in numbers. Each new provider tries to differentiate their products by offering additional features/services with their innovative online backup system. Following is a list of the most useful features:

Accessible anywhere: you can access files protected by Online Backup systems at any time, directly from the client installed on your PC. Or you can access your files from any PC or cell phone with an internet connection via the service provider's website.

Multicomputer (several computers, one account): only some services let a single user protect several computers with the same account. Most follow the concept: one account, one computer. Thanks to this system, you can Backup your home and office computers and access data through a single interface regardless of where the saved data came from.

Permanent storage: You should pay careful attention to storage length. In fact, some services guarantee protection for an amount of time that can be virtually infinite (as long as you pay the subscription). Others, on the other hand, only backup and protect data for several days (usually 30). This means that you only have 30 days to recover data that was backed up online. Otherwise data is permanently lost.

Real time backup: If a user creates a new file or changes an existent one, the client immediately and automatically saves new or changed files on the remote server. Not all services include this function. Some only backup files every 12 or 24 hours.

Fully automatic: Once you choose what to save, the client starts with the computer, silently and continuously running in background to protect data without having to intervene and only if computer resources (band, RAM, CPU) are not used by other more important processes. You can also decide to backup new files at any time until you fill all your available space.

Sharing: Online Backup is virtually an extension of popular "file sharing" systems – those services that let you publish your files online to share with friends or co-workers or provide you with a virtual HD on the internet. There is a significant difference with Online Backup. Data is

already on the internet and is uploaded while you are working on something else. This data can be immediately shared with a single click. The size of the file to be shared doesn't make a difference in some Online Backup services. The client automatically sends an e-mail to the file recipient with a link to the file. At this point, the person who receives the e-mail clicks on the link and simply downloads the file. Other systems have size limits for files to be uploaded and the process is more complicated.

Excellent performance: The best Online Backup services do not slow down your computer. Generally, they monitor how many resources are being used by the system and adjust to user needs. This way, they do not affect computer performance.

Search engines: The best Online Backup programs have an internal search engine that lets you quickly find and manage your files. Some have a semantic search system that lets you run advanced searches in documents with more detailed results.

Scalable On-Demand: Available space can be increased in almost all services by paying for additional Gigabytes. Many software houses sell standard packages of a set number of Gigabytes. Others are more flexible and take customer needs into account.

Versioning: the system traces all changes made on a certain file for a virtually indefinite period of time. Whenever the file is saved, the system only saves the incremental part, creating a new version. Thus, if you want to restore an old document that was accidentally overwritten, simply go back and open all the previous versions. The system does not delete saved files unless the user deletes them. Only a few providers include this essential feature.

How does Online Backup protect my privacy?

All Online Backup service providers strictly observe current privacy regulations. Software house staff members who manage this type of service observe a privacy code of ethics and use the most advanced security technologies (often stricter than those set by the regulation) to guarantee the utmost security. Normally, all communications with servers are on an SSL encrypted channel, the same used by banks, while files are encrypted with the best international standards.

Some Online Backup services guarantee user anonymity because they do not require personal information for service registration. In other cases, each file is divided up (in packets) and distributed on several servers and only reconstructed when requested by the user. It's as if files are shredded in a paper shredder and the strips saved in different places. When the user needs the file, the system pieces the strips back together. This way, anyone who breaks into the provider's servers and cracks the encryption code would only find parts of files that he can't put back together and use.

What are the most popular services?

The Online Backup craze exploded in the US in 2007. The most popular providers are currently **Mozy** (www.mozy.com) and **Carbonite** (www.carbonite.com). Big internet names have also entered the Online Backup market. **Amazon** has created a service called **S3**, distributed through retailers, and Google will soon roll-out **G-Drive**, a sort of online extension of your hard disk. Microsoft and Sky are also trying to grab up market share by offering similar services: the first with **Skydrive** (<http://skydrive.live.com>) and the second with **Sky Store&Share** (<http://storeandshare.sky.com>).

In practical terms, Google, Sky and Microsoft offer Online Storage rather than Backup services. In fact, they only offer a free online extension to your hard disk with only a few Gb for

non-professional use. Other popular American services are **Idrive** (www.idrive.com), **Beinsync** (www.beinsync.com) and **iBackup** (www.ibackup.com)

In Europe, the most popular service is **Memopal** (www.memopal.com), launched at the end of 2007 by Italian businessmen and engineers, now focused on service quality.

How do I know which Online Backup software is best for me?

Not all Online Backup services have the same features. It's important to pick a product that meets your needs, regardless of the price, paying attention to its distinctive features.

Following is a summary table that compares the most popular services:

- Carbonite: www.carbonite.com
- Beinsync: www.beinsync.com
- iBackup: www.ibackup.com
- Idrive: www.idrive.com
- Memopal: www.memopal.com
- Mozy: www.mozy.com

	Carbonite	Beinsync	iBackup	Idrive	Memopal	Mozy
Storage length <i>(If a file is deleted from my PC, how long before I can restore it?)</i>	30 days	Permanent	Permanent	Permanent	Permanent	30 days
Backup frequency	Realtime	Realtime	Realtime	Every 10 minutes	Realtime	Every 2 hours
Web access	NO	YES	YES	YES	YES	YES
File recovery time	Realtime	Realtime	Realtime	Realtime	Realtime	More than 30 minutes
Search engine	NO	NO	NO	YES (slow)	YES	NO
Versioning	All versions saved within 90 days	NO	Max 30 versions	Max 30 versions	Unlimited	NO
Sharing	NO	YES	YES	YES	YES	NO
Several computers for a single account?	NO	NO	NO	NO	YES	NO
Supported OS	Windows Macintosh	Windows	Windows Mac Linux	Windows Mac	Windows Macⁱ Linuxⁱⁱ	Windows Mac
Improved Upload Speed (deduplication, incremental)	YES	YES	NO	NO	YES	YES
Data encryption during transfer	YES	YES	YES	YES	YES	YES
Telephone customer service	NO	NO	NO	YES	YES	NO
Supported languages	Dutch English German French Italian Japanese Portuguese Spanish	English	English	English	Chinese English Finnish French German Hebrew Japanese Italian Portuguese Spanish	English
Consumer plan	\$ 49.95 50 Gb ⁱⁱⁱ	\$ 59.95 15 Gb	\$ 99.50 10 Gb	\$ 49.50 150 Gb	\$ 99 250 Gb	\$ 59.40 50 Gb ^{iv}
Business plan	NO	\$ 1,200 10 PC per 150 Gb	\$ 4,000 10 PC per 200 Gb	\$ 995 10 PC per 500 Gb	\$ 1,119 10 PC per 100 Gb	\$ 1,074 10 PC per 100 Gb
	Carbonite	Beinsync	iBackup	Idrive	Memopal	Mozy

Conclusions

The following conclusions can be drawn from the table:

Beinsync and **iBackup** have a high cost in terms of functionality and features offered.

Carbonite and **Mozy** are economical products, but are missing important features; for example the ability to easily access files and, more importantly, they allow file deletion due to human error.

Idrive and **Memopal** are both a good compromise, having all the functionality that an online backup service should have at a cost close to that of the other two more economical offerings (Carbonite and Mozy).

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ⁱFrom 20 June 2008

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