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Cloud backup tutorial: How to leverage cloud backup services

In this section of the tutorial on cloud backup, you will learn how cloud storage is changing data protection and disaster recovery and the differences in the cost of cloud backup vs. traditional backup.

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Data protection and disaster recovery in the cloud

Conceptually, there is a large difference between protecting data, and providing disaster recovery. However, the way these capabilities are delivered is often very similar. Conventional data backup and recovery applications typically also offer a disaster recovery option, sometimes referred to as "bare-metal restore." However, disaster recovery involves much more than simply restoring an application server. Ensuring that the data is protected from natural and human disasters is an important part, which requires off-site storage of data.

For home users and SMBs, DR is less of a focus than is data protection. If a hard drive crashes, or a laptop is lost or stolen, the primary concern is being able to get your data back.

Also, many companies also choose to ignore the problem of distributed data by ignoring it, or by instructing users to "Back up their data to a network drive regularly." Those of us who have lost data probably do this, sometimes.

Both of these problems can be addressed with the current crop of cloud storage backup offerings available. By providing automated backup, data is actually backed up. By doing so to a remote site, a moderate degree of disaster recovery is also provided. The data is protected from local disasters, including fire, theft, floods, tornados and human errors by maintaining copies of files safely and securely off-site.

Editor's Tip: Learn about how other companies are using cloud services for disaster recovery. Read this article about how the USGA deployed IBM services for disaster recovery.

Cloud backup vendors

There are an increasing number of cloud storage (or online backup) services available. Currently there are approximately 40 online/cloud storage offerings available in the U.S. and Europe, with more coming online every month. Many of these are designed for home and small office users, although there are more than 15 offerings designed for corporate users as well.

The services designed for enterprises typically offer more features and control, along with a correspondingly higher price. If enterprise control is not required, and you have a lot of data to back up, one of the unlimited backup services such as Backblaze, Carbonite Inc., ElephantDrive, Mozy or others may be your lowest cost option.

Microsoft is even getting into the act. Microsoft has a Windows Home Server, which is really like a place to store information in your home. A Windows Home Server is also able to back up this data to another drive connected to the system. But if you want to backup your important data off-site for DR, you can set up your Windows Home Server to back up your data to the Amazon S3 service, which is a commercial cloud storage service offering from Amazon. So, for home users who want the ultimate protection from floods and fires, the cloud is the answer.

Cloud backup vs. traditional backup

When considering using a cloud storage provider for backing up data, it is important to look at a few factors. These are the amount of data you have to protect, the amount of available internet bandwidth and the amount of data that changes on a regular basis. The table below compares cloud backup vs. traditional backup.

Backup factor	Cloud storage	Traditional backup
Amount of data	Best when the total amount to protect is less than 100 GB per 1 Mb of network bandwidth. For example, 100 GB can be supported by a 1 Mb WAN connection (such as DSL)	For large amounts of data, or for environments with limited network connectivity, traditional backup techniques are more appropriate
Rate of change	Best when the rate of change is less than 10% of the total data per month.	For data that changes frequently, traditional backup methods that use local disk and tape, with tape transport off-site are more appropriate.

Cloud backup cost comparisons

There are a lot of cloud backup options available, and nearly as many pricing models as there are services. One of the cloud storage offerings that has received a lot of press is Amazon's Simple Storage Service (S3) service. This service is open to nearly anyone, with a set price for storing, uploading and downloading data.

Not surprisingly, many of the cloud/online backup providers use Amazon as the back-end for their service. Although the Amazon S3 service is not necessarily the least expensive way to back up a lot of desktop or laptop systems, particularly if you have a lot of data to protect. In that case, a service that does not charge by the gigabyte is often a better option. Some of the lowest cost options cost between \$50 and \$60 per year, which is equivalent to storing approximately 30 GB on Amazon's S3. So, if you are storing more than 30 GB, an unlimited account will save you money.

One potential issue is archive vs. backup. Archiving allows users to free up space by moving data off the primary system. However, several of the online backup applications are designed exclusively for backup. So once you remove the data from your primary system, it gets deleted from the online backup as well. If you want to store copies of your home movies for safe-keeping, it may be very expensive to store that 1 TB on Amazon S3. Expect to pay \$100 to move it to the site, and then another \$150 per month to store it. For archiving large amounts of data, the best option remains storing data on tape, or a removable disk drive for smaller environments.

The chart below compares the prices of cloud storage vs. traditional backup.

Prices of cloud storage cost vs. traditional backup

Backup factor	Cloud storage	Traditional backup
Initial Cost	Most prices range from \$0 to \$10 for initial setup. Business accounts should expect to spend more.	The costs for traditional backup can vary greatly. Small business should expect to spend \$1,000 or more
Cost per gigabyte per month	Varies, prices range from \$0 to \$1 per GB per month for most services.	This depends on data retention amounts. Expect to spend about \$1 per GB per month.

Cloud storage is real, with services available from a number of companies. These services should be considered for any environment that does not already have a data protection plan in place. Many home users and SMBs rely on small systems for all their data, although they may not have an adequate (or any) means of protecting this data. Even many large companies who until now have chosen to ignore distributed data on laptops should consider using the cloud backup.