Very like a whale: Commercial cloud storage services come into their own

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This article examines a range of commercial cloud storage options currently available for individuals, small businesses or institutions. Prices and facilities are compared, and an overview is given of the typical features of a cloud storage service.

INTRODUCTION

"Very like a whale" is a quote from *Hamlet*, Act 3 Scene 2,[1] where the prescient Prince of Denmark is discussing with Polonius the shapes taken by a cloud on the horizon: a camel, a weasel ... or a whale.

This is the year that commercial cloud storage systems have become a hot topic for individuals, small businesses and institutions: prices have come down, capacities have increased, and management capabilities are getting better all the time. But which providers are whales, and which are weasels?

In this article I provide an overview of how commercial cloud storage works in general, then look at the services and facilities currently offered by a few of the major providers. This is a rapidly-changing area, however, so the article should be taken as an indication of what's generally on offer rather than a guide to specific details.

How does it work? The principle of cloud storage is simple. A certain amount of space is put aside for you on a large server farm somewhere, a username and password is provided to give you access, and you can then connect to that location – usually through the web – and upload and download files as required. The host takes care of backing it all up, and the material is always there when you need it. Unlike web hosting, cloud storage is essentially passive and private. It's intended primarily as a repository for data rather than a publishing venue, although some hosts like Google allow collaborators to edit files and create new data directly in the cloud.

Most providers offer a relatively small amount of storage as a free service; users can then pay to upgrade this to a larger amount. Sometimes connection is web-only; but usually the provider will supply an application which allows more control over the process from the user's end. Apps for mobile devices such as tablets and smart phones are an essential part of any cloud system, as they allow access to your data while travelling. Data sent back and forth from the cloud is counted in any data charges or limits you may have on your internet service.

Cloud storage has been primarily used up until now as an "emergency" backup location for important works in progress, safely away from the risks of fire, flood and computer theft. I've been backing up my work with Dropbox, for example, for over two years. After the current round of price drops, and given the ever-increasing capacity of broadband, it has now become feasible to also use cloud storage for backing up bulk material that doesn't change much – collections of music, videos or ebooks, for instance, or archived financial information. Creating and maintaining this kind of archive requires a connection to be running over an extended period, and this is often done by setting up one or more "synchronised" folders. Any files moved or copied to a synchronised folder are uploaded to the cloud over time by a background process running on the PC. More computer-savvy users can leave their files where they are, and place links or shortcuts to them in the synchronised folders instead; this will have the same result.

Some feedback on the rate and progress of uploads is usually available through a toolbar or panel icon. Note that synchronising means removing as well as adding files; anything deleted from the synchronised folder will be removed from cloud storage too.

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All websites viewed September 2014.

[1] *Hamlet*, Act 3, Scene 2, http://shakespeare-navigators.com/hamlet/H32.html.

Access to cloud data is normally via username and password on the web, or via a linked app on a mobile device. Some providers also offer the no-frills file transfer protocol, or FTP, as an optional extra, while others can do this via an online workaround. Cloud files can be downloaded to the computer or device you are using, or – if they are the right file types – opened directly on the screen. Storage providers use the same folder-based hierarchical method as PCs themselves, and different folders can be given different properties, and/or made available to different sets of users.

Your online material should be safe as long as you keep paying the bills and the service doesn't shut down – which has already happened in a few cases, notably to the Ubuntu One system offered by Canonical.[2] So far users have been given plenty of warning when services are about to close, but finding a new home for gigabytes of online data can still be a chore. Websites like mover.io[3] are now offering to provide help with transferring data between storage services.

If you have security concerns, some cloud storage hosts offer an encryption service; your data is encoded and only you can read it. This may be applied to specific folders, or to the entire site. Obviously this still requires you to have some trust in the hosts, but it may be enough to provide peace of mind. An issue has also been raised concerning loss of copyright in cloud-stored files, but this appears to be based on a misunderstanding. Legally, the copyright status of any digital material should be completely unaffected by where it is stored, and with whom.

Most services now offer an option to share your folders with others. You specify the email addresses of other users that you want to share that folder with, and those users are sent an email giving the URL and indicating that they have access. Folder sharing can be limited to downloading only, or it can allow for both downloads and uploads. Some cloud services support a full control option, where shared users can add new shared users of their own.

Those are the basics: now we can look at some of the players.

GOOGLE DRIVE

Google Drive[4] is the 500-pound gorilla in the cloud at the moment, with a long history of reliable service and an unrivalled range of add-on features. A recent price drop has also made it financially competitive. Users can use their existing Google login details, and a base of 15GB is provided for free. The Google Drive website screen displays the folders themselves, plus an activity log of recent changes. The interface makes selecting and working with files easy and straightforward, especially pictures and music. These and other files can be linked with a wide range of existing Google Apps, making it possible to write documents, create spreadsheets, create and edit images online, and carry out a host of other activities – although these don't yet seem to include reading files in the EPUB format, online. Many of these connect up in turn to mobile apps of their own, building a whole software subculture around Google Drive. The Zoho[5] apps are particular favourites of mine.

Since 2013, Google has routinely encrypted all the data they store. Users seeking further protection can add and control their own encryption using third-party software like Boxcryptor[6] or CryptSync.[7] The first 15GB of Google Drive storage is free. Pricing after that: 100GB for US$1.99/month; 1TB for US$9.99/month; 10TB or more from US$99.99/month. A new service called "Google Drive for Work" will reportedly offer unlimited storage for US$10 per month.[8]

[2] Silber J, "Shutting down Ubuntu One files services", *Canonical Blog* (2 April 2014), http://blog.canonical.com/2014/04/02/shutting-down-ubuntu-one-file-services.

[3] https://mover.io.

[4] http://drive.google.com.

[5] https://www.zoho.com.

[6] https://www.boxcryptor.com/en/google-drive.

[7] http://stefanstools.sourceforge.net/CryptSync.html.

[8] http://www.google.com/enterprise/apps/business/driveforwork.

Google provides a free app, also called "Google Drive", which allows Windows users to set up synchronised folders. The app is not (yet) available for Linux but a low-priced third-party app called Insync[9] is available which will do the job.

For many users, Google Drive is an obvious first choice. It's big, cheap, friendly and it talks to everyone. It's going to be hard to find reasons to go past it. Let's see what the competition offers.

DROPBOX

Dropbox[10] has been a quiet achiever in the cloud storage area. It's been around since 2011 and is widely used for emergency backups. It runs with a similar interface on Windows, Linux and Macintosh systems, and it provides web access to your files. Recently it has acquired several smaller businesses with expertise in media and social networking, so it may be poised for a transition into something more than just a storage company, but for now Dropbox is just quick, reliable and easy to understand.

Dropbox pioneered the notion of shared folders, and is still used extensively by businesses as a quick and reliable way of transferring files that are too large for email. Installing Dropbox on your PC involves answering a few questions and supplying a username and password; there's an introductory slideshow available for those who need it. Dropbox adds a folder to your system, and from then on anything placed in (or linked to from) that folder is quietly uploaded to the cloud. Logging in at the Dropbox site gives you access to your files and control over your folders. A small icon in the tray or taskbar shows you that Dropbox is running, and displays a tick when your changes are synchronised. Right-clicking on the icon can take you to the local Dropbox folder or the online website. This can also be used to bring up a Preferences dialog where – among other things – you can manually set a bandwidth limit. My experience is that the default settings are quite economical with bandwidth anyway.

The Dropbox website is clean and uncluttered, and the Settings menu has a useful Security tag which shows a list of all the devices, and the apps on those devices, which have access to your stored files. So if you're wondering how the music player on your new iPhone knows about your hidden cache of Perry Como songs, Dropbox may be able to tell you.

Most Dropbox users are content with a free Basic account. These start at 2GB, but users can earn more space by installing linked apps and spreading the word to their friends. Paid plans start at US$10.99 per month for 100GB, more than five times the Google equivalent. Large-scale users are offered a Dropbox for Business plan which starts at US$17.00 per month per user, and includes collaboration tools. Clearly its pricing is not yet competitive, but if Dropbox can deal with this it has every chance of a successful future.

MICROSOFT ONEDRIVE

Microsoft is obviously chasing Google with its OneDrive service,[11] which comes pre-installed on PCs and mobile devices running current versions of Microsoft Windows. Pricing is similar to Google Drive with 15GB available free and a 100GB plan for US$2.50 per month, recently cut from US$5.00. Mega-users may find themselves attracted by the bundle that goes with a subscription to the cloud-based office suite Office 365 – US$9.95 per month for access to the programs themselves, plus 1TB of cloud storage space. It's not clear who would have the bandwidth to make a dent on that, but Microsoft obviously regards this as a vision of things to come.

OneDrive was formerly SkyDrive, and SkyDrive users should find that their files have been transferred across intact. A OneDrive app is available for Android and Apple devices, and older versions of Windows, but not for Linux systems. Users can work on their files with online Microsoft apps similar to those in Office, but unlike some other hosting systems there doesn't appear to be a way

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[9] https://www.insynchq.com.

[10] http://www.dropbox.com.

[11] http://onedrive.live.com.

of stepping, slide-show fashion, from one document to the next. Colours are used to indicate document types, and once you swap the kindergarten-style Big Thumbnail layout for a more manageable list, the interface is reasonably clean and easy to use. One bonus is that the settings from Windows devices you use can be automatically backed up to a OneDrive account.

Microsoft fans will appreciate the convenience of having the software installed and ready to use. For others, it's not clear that OneDrive offers any major advantages over Google Drive, so the decision will come down to which linked apps and features are of most value to the individual.

BOX

Box[12] was an early entrant in the 10GB-for-free stakes, but its customers have lost some interest as other larger competitors followed suit. An upgraded system now offers 100GB for US$10.00 per month, and unlimited storage with a "Business" account for US$15.00. Storage is the keynote, but at the time of writing Box had just added a collaborative text-based note-taking system. Synchronised folder apps are available for Macintosh and Windows users, but not Linux. Android and Apple-based mobile devices are supported too. A few other applications are also available for working with your data. The usual sharing options are supported.

One minor annoyance is that Box only displays twenty files on a page, and in a folder with more files it's necessary to step through them 20 at a time. This makes it difficult to carry out large-scale selection and copying or deletion of many files at once. On the other hand, Box has given some thought to metadata: it's possible to add comments and tags to files and folders, making particular items easier to find.

COPY

Copy[13] is another Dropbox wannabe, complete with similar shades of blue on the website. It provides a minor innovation in the form of a three-panel display, so users can see a main folder, its subfolders, and the files in a selected subfolder at the same time, but also one astonishing drawback: the user cannot select more than one file or folder at a time. This makes any kind of major file or folder management impossibly tedious, and it's hard to see what could compensate for that. There are some mildly positive reviews on the web, though, so perhaps I'm missing something. Space limits are unimpressive – 15GB available for free, and 250GB with the Pro version for US$9.99 per month – but there are apps for mobile devices, and synchronised folder systems for Linux, Macintosh and Windows.

AMAZON ZOCALO

Not yet released at the time of writing, Amazon Zocalo will be available first as a limited preview to anyone with an Amazon Web Services account. From the description on the Amazon website,[14] it appears to have an emphasis on version control, with all earlier drafts of documents being kept for comparison and review. It will also integrate with existing Amazon services. Pricing will start at US$5.00 per month for 200GB. Amazon has deep pockets, expertise in cloud services, and a respected brand, but whether they have the innovative skills to stand up in the ring with Microsoft and Google remains to be seen.

MANTANO DRIVE

Like Ubuntu One, Mantano Drive is interesting as a glimpse into an alternate history; something different that might have been. It began when Mantano,[15] the makers of a excellent and popular ebook reading app for Android and Apple portable devices, decided that Mantano users with multiple devices should be able to start reading their book on one device at the place they left off on another, as Kindle

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[12] https://www.box.com.

[13] https://www.copy.com.

[14] http://aws.amazon.com/zocalo/details.

[15] http://www.mantano.com.

users can. This is only feasible when the devices can be connected via the cloud, so Mantano set up their own cloud storage system, specifically for users of their app on multiple devices. For US$1.00 per month, users could upload their books to the cloud, keep them synchronised, and know that when they set one tablet down for recharging and picked up another, their ebook would open at the page they were up to.

I subscribed to the plan at an early date, and used it with limited success for a few months, but it was clear that with a small user base and relatively little cloud expertise, Mantano weren't on to a winner. The Mantano Cloud ("almost in the shape of a camel") was retired, and users were directed to other, more generalised, apps to achieve their synchronisation. Mantano seemed to survive the experience, and their ereader app is still available, but I see the copyright on their home page is now two years out of date – never a good sign.

CONCLUSION

There are many more cloud storage companies in the size niche between Mantano Cloud and Dropbox, and others will enter or leave the market over the next year or two. It's possible that some killer feature will push a new contender into prominence, but as the market matures that will become less and less likely. Setting up a site and transferring files takes time; users who have already chosen a provider will be reluctant to shift without strong incentives. And once a large user – a multinational corporation, say, or a big government department – adopts a specific option for storage, there are payoffs for its employees, clients and trading partners to follow suit.

Companies like Google, Microsoft and Amazon have achieved their vast size and wealth by getting most things right for most people, most of the time. Any of these three can provide cloud storage solutions that will fully meet most users' needs.

Cloud storage is a game for whales. But if you prefer your whales at less than Leviathan scale, Dropbox is still a contender. And if you *do* need different feature sets from different providers, you have the option to set up several free accounts – or even several paid accounts. In fact, for the price of a cup of coffee and a meat pie every week, you can now store the whole Library of Congress. Nobody can say *that* isn't a bargain.