Cloud Computing

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ABSTRACT

[...]the option to use and thus pay for cloud software services only as needed eliminates the expense of purchasing and maintaining the software. According to one leading developer of productivity and security applications, passwords should have eight characters or more with mixed types of characters (i.e., upper- and lowercase letters, numbers, and symbols).5 There are thousands or perhaps hundreds of thousands of cloud services that are accessible by the general public.

FULL TEXT

Oh! I have slipped the surly bonds of earth And danced the skies on laughter-silvered wings;
Sunward I've climbed, and joined the tumbling mirth
Of sun-split clouds . . . but I digress!

When I hear the term "cloud computing," a poem that I memorized during my childhood often comes to mind: "High Flight" by John Gillespie Magee Jr.-a tribute to the awesome experiences of fighter pilots during their flying missions. Cloud computing, however, has nothing to do with computer services being delivered from a place high above the earth. Cloud computing services are more likely to be delivered from a nondescript office building on farmland outside the city limits or a fortified underground bunker-the point being the computer services are at one location and the user accessing these services is at another.

Cloud computing is the process by which a user can remotely access data and program applications-usually by use of a web browser over the Internet. Today, most users have several devices by which they need to access their data and applications, namely, office and home computers, a laptop, a tablet computing device, and a smartphone. Imagine that a user has a computer file but not the program application needed to open or view the file. Cloud computing will allow the user to access the program over the Internet to view and edit the file as needed. Similarly, if a user needs a computer file he does not physically have with him, cloud computing allows him to access the file over the Internet, wherever the file happens to be stored. The most recognizable instances of cloud computing are web-based e-mail accounts, such as Yahoo and Hotmail, online banking Cloud Computing By Judge Herbert B. Dixon Jr. accounts, and Facebook and LinkedIn accounts, all accessible from anywhere in the world on an Internet-connected computer. Other examples include Intacct, a cloud computing company that provides accounting and related business services, and Salesforce.com, a cloud computing company that provides business software.

Often-cited advantages of cloud computing are (1) lack of need to purchase special software (other than an Internet browser) for the device that connects the user to the cloud, (2) no need for significant file storage space on that device, and (3) ease of collaboration among multiple users on documents stored in the cloud. The first two reasons are most often cited to support the conclusion that cloud computing is often cheaper.

The movement toward cloud computing in all facets of society is undeniable. For example, some of the biggest names among information technology (IT) companies are making substantial investments in cloud computing, including Microsoft, IBM, and Google. The federal government, through the U.S. chief information officer, has instituted a "Cloud First" policy to accelerate the pace at which the government considers cloud-based options before making any new investments. 1 Intelligence agencies are moving to cloud computing to integrate computer and information systems and share data.2 And, as an example within the states, the Kentucky Department of Education has moved to cloud-based services for some 700,000 students, faculty, and staffstatewide, replacing

180 on-premise exchange servers and saving an estimated $6.3 million in operational costs over four years.3 One industry commentator states that cloud computing has become so broadly accepted that it won't rank as an exciting development for 2012.4

Businesses have gravitated to cloud computing for several reasons. First, there is often a lower cost for using cloud services as needed compared to capital and personnel expenses incurred for storage, program applications, and computing capability on site. Also, computing tasks might run more quickly and be more efficient using cloud computing, depending on the speed of the Internet connection if the business itself possesses less capable computing equipment on site, as compared with the computing equipment running the cloud. Lastly, the option to use and thus pay for cloud software services only as needed eliminates the expense of purchasing and maintaining the software. Obviously, several of these business reasons to use cloud services also apply to individual users.

The reasons that cloud computing has increased are easy to understand. Businesses and individuals typically need to access files from their multiple computing devices. Also, the availability of faster Internet connections makes accessing files from each of these devices easier and more convenient. Finally, the cost of cloud computing is now within everyone's economic reach, with basic services being free in many instances.

Not all cloud computing service providers are equal. Some cloud providers are better than others when considering the stability of their networks and the ease of use and quality of their services. Additionally, there is the issue of security. Just as a burglar can enter a physical location and steal valuables from the owner, scammers are able to trick computer users into revealing IDs and passcodes, and Trojan viruses can enter the operating systems of our various computing devices, causing damage or aiding the theftof confidential information; cyber-thieves can steal data and documents from the cloud. More than anything else, the best defense against cyber-thieves is (1) using a cloud service that offers a reasonable level of security and (2) having a strong and complex password. According to one leading developer of productivity and security applications, passwords should have eight characters or more with mixed types of characters (i.e., upper- and lowercase letters, numbers, and symbols).5

There are thousands or perhaps hundreds of thousands of cloud services that are accessible by the general public. Accordingly, the below list is neither exhaustive nor representative of the cloud services available. But the examples noted below give an idea how pervasive cloud computing has become, even though the term cloud computing may not regularly be used by the general public. Program applications used at these sites are not installed on your computer or other device; the applications exist in the cloud that you access over the Internet. The benefit is that each user does not have to install the application on his or her particular device; the program application exists in the cloud and is accessed and used by thousands, hundreds of thousands, and, possibly, millions of users. Whether the service is free or billed only to the extent used by the individual or business, the value of cloud services to any user is obvious.

Some cloud services are merely storage locations from which you can access pictures and documents over the Internet from your desktop or laptop computer, your tablet device, or your smartphone. And the best part about this is you can access these documents from your home or office, or halfway around the world as long as you have an Internet connection.

Some cloud services provide a storage location and software or program applications that are needed to process data and view, create, and edit documents.

A few of the generally well-known cloud services are listed below.

Dropbox is a cloud storage service that allows the user to store, share, and automatically synchronize files between different devices. Dropbox offers a free account with 2 GB of storage, which you may upgrade to a monthly subscription account that grants the user a higher storage limit.

SugarSync is a cloud storage service that allows the user to store, share, and automatically synchronize files between different devices and users. SugarSync offers a free account with 5 GB of storage, which can be increased with a monthly subscription account.

Amazon Cloud Drive is a cloud storage service. Amazon Cloud Drive gives 5 GB of storage space for free and can

be upgraded with a yearly subscription service. Amazon is the largest public cloud service provider and one of the least expensive for cloud storage services. The maximum file size permitted is 2 GB- whether the user has a free or subscription account. Amazon Cloud Drive does not offer a file-sharing feature.

Minus is a cloud storage service that offers 10 MB of free storage with an incentive to increase available free storage to 50 MB through a process of referrals. There is a 2 GB limitation on uploaded files. Uploaded files can be shared via an automatically generated link.

MicrosoftSkyDrive is a cloud storage service that gives users 25 GB of free storage and the ability to share files with others via e-mail. SkyDrive requires the user to have a Hotmail or other MSN address.

OfficeDrop is a cloud-based file management system that converts files into text-searchable PDF files. A free OfficeDrop account gives users 1 GB of free searchable storage. Larger searchable storage capacity accounts are available with a monthly subscription service.

Google Docs is an online storage and software service that offers a word processor, spreadsheet editor, and presentation editor that allow you to create, store, and share documents and collaborate with others. Google also offers a calendar, e-mail (Gmail), and other features.

Carbonite, JustCloud, ZipCloud, and My PC Backup are separate and unrelated online services that allow you to back up in the cloud all the files on your computer. Each service charges a monthly subscription service.

YouSendIt is one of the earliest filesharing services. It started offas a replacement for sending large attachments by e-mail. YouSendIt offers 2 GB of free storage with a 50 MB limitation on the size of uploaded files. Higher storage and upload limits are available by monthly and yearly subscription.

CloudOn and OnLive Desktop are separate and unrelated cloud computing services for iPad users that permit you to create and edit Microsoftdocuments in Word, PowerPoint, and Excel. The key understanding you should have about these cloud services is that the MS Office software is not located on the iPad but is located on the cloud server that you access over the Internet. Unlike any other iPad app, the MS Word "Track Changes" feature is available using both OnLive and CloudOn.

The OnLive app is free and includes 2 GB of storage, but you may not be able to access the service if demand is high. Priority will be given to users that have upgraded to a monthly subscription account, which also includes a higher storage limit.

CloudOn is primarily a cloud software service provider. The CloudOn app is free but requires the user also to have a Dropbox account for storage. Don't be surprised if CloudOn one day offers a monthly subscription upgrade.

Conclusion and Words of Caution

There is one warning that cloud service users should know and understand. There is no guarantee that your electronic files and data stored with a particular cloud service will be accessible forever. Nearly all of the cloud computing services expressly disclaim any responsibility for loss or damage to a user's data and files. Thus far, I have located only two exceptions. Carbonite may refund the subscription fee paid for storage service during the year immediately preceding the loss. Nasuni, a company that provides commercial cloud storage and security services, gives a 100 percent guarantee against loss of data. Nasuni is a commercial service and an unlikely option for most individuals.

A cloud computing service can go out of business without warning or can experience a technical problem that results in the unavailability of your files temporarily or permanently. For example, Megaupload was a cloud storage service that was seized by the U.S. government on allegations of illegal file sharing. After that substantial legal problem hit Megaupload, they stopped paying the company that provided their computer hosting services, which resulted in the hosting company threatening to delete all files stored for Megaupload. The conventional wisdom is that Megaupload customers may never get their files back.

Amazon Web Services suffered two brief outages in 2011. Although the services were quickly restored, certain large customers of Amazon such as Netflix, Quora, Reddit, and Foursquare suffered outages that caused a temporary loss of service and access for their customers.

Users that primarily store their data and documents with a cloud service should always consider an additional

location for backup, including another cloud service or an external storage device. If your primary storage location is with a cloud storage provider, beware: Murphy's Law applies even in the cloud. *

Sidebar

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The Judges' Journal is seeking your response, whether comment, praise, or constructive criticism, to the content of our articles or the design and structure of the magazine. We would like to publish letters unless otherwise instructed, and we will take every comment to heart as we prepare future issues.

Please submit your letters to the Editorial Board co-chairs:

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Footnote

Endnotes

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DETAILS

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