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ComputerCorner

The Perils of Cloud Computing

Just 'Cuz It's the New, Cool, Popular Thing Doesn't Mean It's a Good Idea

The star topic at a recent software developers' conference I attended was "Cloud Development". First, let's stop to make sure all readers understand what "the Cloud" refers to.

What is "Cloud Computing"?

Cloud computing is Internet-based computing in which large groups of remote servers are networked to allow sharing of data-processing tasks, centralized data storage, and online access to computer services or resources. Clouds can be classified as public, private or hybrid.[1]

Now for an explanation in plain English that also provides some historical perspective. Computer hardware is the physical equipment such as the computer itself, the monitor, the printer, etc. In the old days we would tell people to think of computer hardware like a record player. Without records – the black vinyl disks on which music was recorded – the record player had no purpose. It was simple – no records, no music! Computer software, like the record player's records, gives purpose to the hardware.

Just as with old music records, if it was country music you wanted to hear, you wouldn't buy an opera record. In the computer world the right software for the purpose is also needed, thus it is referred to as "application software".

If we compare vinyl music disks to software installed on a personal computer, then listening to music on the radio might be compared to using software "on the cloud".

Computers are newer on the scene than record players. The Phonautograph came around in 1857; that is perhaps not as recent as most might guess. Depending on just how one might define the term "personal computer", the first personal computer was actually introduced to the public in, – get this, 1950. Yes, 1950! It was called the Simon. In those days there was no software industry. If you built a Simon from the plans detailed in a series of *Radio Electronics* issues in 1950 and 1951, you also had to know how to write your own code.

Years passed and so did a parade of personal computers. Since the average citizen was not, and for that

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[1] Downloaded from http://en.wikipedia.org/wiki/Cloud_computing#Overview, October 2, 2014

matter most are still not, educated in writing code, companies started offering computers that hard coded, i.e., built in applications like text editors (word processors), file management (data bases), spreadsheets, and calculators.

Other computers provided tape drives or disk drives that tapes or floppy disks containing software could be inserted into, giving birth to the software industry. These computers allowed people to go to a computer store and choose from an ever-expanding array of programs to do everything from ordinary functions like typing a letter to learning to speak French.

Software companies sprang up; they provided everything from games to business applications. The consumer would plop their dollars down and head home with a box containing a disk to insert into a disk drive that was part of, or attached to the computer.

The money paid did not actually BUY the program, but purchased instead a license to use that program. The company retained ownership of the "intellectual property" so that their work in developing the software could pay off time and again – each time they sold a license for the use of the program copied onto a disc.

However, some software companies wanted to guarantee a steady and continued income and instead of offering the use of their product for a one-time fee, they would require an annual use fee (some monthly) or some other arrangement that required the user to pay over and over again to continue using the software. Normally such a fee also provided certain upgrade improvements and sometimes also some sort of technical support agreement.

This desire of software companies for a steady cash flow has cloud computing looking pretty good to them and not so good for the consumer. Some of us are on both ends of that stick. I am most certainly in the software industry, but I am also a consumer of software products. In fact, before I ever left for the recent tech conference that was pushing cloud computing that I referred to at the beginning of this article, I had converted our Thoroughbred Utility Management Software to make a cloud version available to run on a Web server, the software accessed over the Internet instead of running locally on a computer in a municipal or rural water office. This way if we should have customers that buy into the hype and believe they just must do everything in the cloud, we will be ready for them. However, as a disgusted

The promotion of "Cloud Computing" by software developers

The following are the four reasons touted at the software developers' conference why software businesses should want their product on the cloud:

1. Regular lease or use fees are more easily budgeted and more easily "sold" to users.
2. It provides a reliable steady revenue stream to the software or service provider, i.e., the software company is guaranteed a continual stream of money. (Of course to the consumer that means a continual outgoing expenditure for each program they use.)
3. The end user may be able to save a little money on their initial computer hardware investment, as a very basic computer is required to access the Internet. Of course, printing equipment, etc., would all still be needed.
4. It's the "way of the future", the new "cool" trend that will allow people to access your software from anywhere in the world.

Unfortunately there are some people in business these days basing business decisions on the same foundation twelve years old boys use "... Wow, it's really COOL MAN".

Awesome tatoo   Yeah Cool Cloud Man

consumer regarding this new wave – this darkening of the skies over the software industry – I have no intention of forcing my customers into cloud computing as a way of doing business.

This business-model works for the software companies – not for you, the user!

The trend seems to be clear, as is driven by Microsoft and other industry leaders. One can now "lease" usage of the new Microsoft Office 365 Online, Quickbooks 2015 Online, and several of the other most popular programs out there. One might say there is a cloud hanging over the future. Instead of having the choice of purchasing software to install on a home or office the computer, leaving when or if an upgrade will be purchased to the consumer, cloud-based programs will force the user to pay regularly and take whatever the company provides, and swallow any fee increases the company might impose. For those who also have their data stored on the cloud along with the software they are using, they may find they no longer have access to their data should they decide to no longer pay the regular fee. This gives the provider a more reliable, steady stream of income at the expense of some of the freedoms of choice the consumer has enjoyed since the birth of this industry.

Some would argue that subscription fees make money management less complicated for the water utility because with regular payments due, it's easier to budget expenditures for computer and software equipment. Others would argue that it takes control away from the user and puts it in the hands of the software or service provider.

Integrity, safety and security

With cloud computing, there is a question of data integrity, safety and security. Some would argue that there is nothing more secure, as once on the Web server, the provider has backups of the backups of the backups. Or, at least there are supposed to be! Others would argue that it's not a matter

Steps to minimize your risks and exposure

Some of the "Don'ts" to follow to make "The Cloud" more secure are in the virtual world and some are in the physical one.

In recent national news reports, experts recommended NOT storing sensitive financial or personal info on Internet-based storage services where they may be compromised. To minimize risks, experts recommend keeping sensitive financial, banking info, date of birth, health, social security and other sensitive information only on home or office personal computers and backup storage devices.

When making online purchases or financial transactions, many people feel their information/data is secure seeing the lock on their browser screen (https) that indicated that the page is protected with increased security protocols and encryted data transfers.

Don't be lulled into a false sense of security. Just because this communication is encrypted (remember the "heartbleed data breech of sites") the data being stored on the destination system may not be secure. The greatest risk is usually a breech of data wherever it is being stored. Keep in mind, all the data on the "cloud" is stored on a physical drive somewhere and therefore is subject to compromise.

Remember these important Don'ts . . .

Don't rely solely on technology such as firewalls and antivirus programs. If an email doesn't seem right, *don't open it*!

Don't talk to strangers, e.g., when asked to confirm personal or financial information; don't respond to emails or use included links. On the phone, tell callers you will contact their office. Then, use the financial statement contact information versus any numbers included in the email or by phone. Limit personal/sensitive information exposure on sites such as Facebook. Any data one wouldn't want to see on the front page of the newspaper, or data customers would not want published, doesn't belong in Cloud-based storage and out of the control of those who will be left holding the bag.

Don't keep large amounts of money in Debit Card bank accounts.

Don't have credit card limits higher than what you really need. Unnecessarily high credit limits just allow criminals more money they can steal.

Don't ignore financial reports; check your bank and credit card statements religiously and closely scrutinize each billing cycle. Check your Credit Reports: TransUnion, Equifax and Experia.

Don't make the mistake of thinking someone else is going to care more about your financial security than you will. Take responsibility for yourself. Backup and store data in a safe/secure location (vault, fireproof safe, local bank safety deposit box, etc.).

of whether your data will be compromised but rather a question of how long before it is compromised.

Do you recall recently hearing of a little Internet security flaw called "Heartbleed"? The Web address prefix "https" we all trusted to keep our passwords, personal emails, and credit cards safe, was actually making all that private information accessible to anyone who knew about the exploit. There is nothing you can do to know whether or not your data has been compromised. Heartbleed is another reminder that much of what we call "security" on the Web is chillingly fragile.

Here is a listing of some of the more recent and notable Web security breaches:

- Michaels Arts and Crafts
- Neiman Marcus: The U.S. Secret Service is still investigating how Neiman Marcus data was compromised despite being in full compliance with commonly established data security requirements.
- Adobe Systems
- Nasdaq
- 7-Eleven
- JCPenney
- Apple's ICloud
- Home Community Health
- Target
- K-Mart
- Home Depot
- JPMorgan Chase – as reported by *The New York Times* on 10/2/14, it was disclosed that 76 million household accounts and seven million small-business accounts were hacked.

A new Internal Revenue Service crackdown is targeting the growing problem of criminals who used stolen identities to seek millions of dollars in fraudulent tax refunds. Often, the victims are denied refunds for many months as investigators attempt to resolve what happened with the correct taxpayer's account.

Concluding thoughts

Remember the best security protection you have is using the electro-chemical biocomputer located between your ears. Engage it, wait for it to spin up to full speed, then use it to ponder your actions and make smart choices to minimize your exposure. And, remember a cloud is a visible mass of condensed water vapor

floating in the atmosphere, typically high above the ground. It is a hard thing to gain sure footing on, and it can be a long fall to the ground when footing gives way!

Now don't get me wrong, I do some Internet surfing; I do computer support over the Internet; I even play games on the Net. All those things are on the "Cloud", but I keep asking myself why would anyone in their right mind want to put their personal, business, water utility or municipal financial or other sensitive information on the Web instead of keeping it on their local computer (hopefully in a secure building with a trustworthy burglar alarm). Ugh, that's right . . . refer to four main reasons mentioned before that I was given at the programmers' class on why I needed to convert our software products to be Web-based "Cloud" programs. LOL

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