Get your head in the clouds
A quick guide to cloud computing

By Daniel Kroker

How would your RTO recover if the computer storing your student records was stolen? Or what if there was a fire in your records storage area? Questions like these have allowed cloud computing to make a lot of noise lately and with good reason. With many businesses shifting away from traditional IT solutions to the robust and easy cloud solution, what does it all mean?

What is the cloud?
Put simply, a cloud is a series of computers linked together to create one giant computer resource, but a resource that can be partitioned and delegated in any way the cloud administrator requires.

Why is this such a good thing?
Liken it to a human body. If a single computer were a cell, then the cloud is the equivalent of all those cells combined to create the entity as a whole. About 300 million cells die in the human body every minute – but do you notice?

In the cloud, individual computer components such as hard drives and CPUs can fail, even whole servers can crash, yet the cloud as a whole remains operational with all systems intact. The failed components can be quickly replaced and repaired, without the cloud going offline. This is because data is often written across multiple computers so if one fails it can be safely found on another. If one of the machines is low on resources such as hard drive space or CPU power, it can lean on another machine(s) in the cloud to share the load until it is no longer required. Of course not every system is the same so you should always check the redundancy systems with the provider.

Such set-ups basically decrease the chance of data loss, system down time and software slow down due to spikes in demand on server resources. For someone with data or uptime safety concerns, the cloud is a dream come true.

What a cloud is not?
Part of the confusion around cloud computing is that the term is often incorrectly spruiked by marketing people looking to capitalise on trendy language. However, what they actually offer is simply server-side software or applications that are accessible via stand-alone servers. Understandably, this can cause confusion.

Further muddying of the waters comes from many software providers who previously offered Applications Service Provision.
IS CLOUD COMPUTING SECURE?

It’s important to remember that a ‘cloud’ is, by and large, a hosting solution. Server-side applications which are delivered via a single server may share a lot of the perks associated with cloud solutions, however stand-alone servers receive none of the stability and flexibility that being underpinned by a cloud actually provides. If the server goes offline for any reason – you cannot access your software or data anymore, worse still, depending on how you run your backups, your data might be gone. Not sure if what you’re looking at is actually a cloud solution?

One simple question will make it easy to find out. When choosing your products ask, “Is this product hosted through a cloud, or a server?”

How can you use the cloud in your business?

For RTOs, the opportunity is to find software providers who deliver their products via the cloud. RTOs that currently store records, learning and assessment resources, policies, procedures, forms, tools or electronic documents of any variety, will have a little digging be able to find a product that can do the same via the cloud.

True cloud software solutions are essentially able to deliver all of the advantages of desktop, network or server software, with none of the hassle. They require no installation or software setup by the client and can be accessed anywhere, anytime from any PC offering a web browser with an internet connection, usually through a login page with a secure user name and password.

Some software options available through the cloud that are useful to RTOs are:

- Student Records Systems (SRS)
- Content Management Systems (CMS)
- Customer Relationship Management (CRM) systems
- E-learning platforms or Learning Management Systems (LMS)
- Automatic backup and restore software
- Accounting packages

Who can benefit from cloud computing?

Because it is so scalable, anyone can benefit from cloud computing. If you have an interest in data reliability, integrity or security – then it’s time to get your head, or at least your RTO, in the cloud.

FAQs about clouds

Take a look at some of the Frequently Asked Questions below to see why cloud computing can help support your current and future business needs.

WHAT IS CLOUD COMPUTING?

In geek speak, cloud computing is a way to deliver abstracted computer and storage resources over the internet on an on-demand, metered basis. It is highly scalable, and typically allows users to obtain as much or as few resources as they need on a dynamic basis. It consists of three parts: Infrastructure as a service, platform as a service, and software as a service.

WHERE WILL MY DATA BE LOCATED?

Your data will be located in a farm of servers working together as one ‘supercomputer’, normally within a secure Data Centre. Data Centres are typically buildings that have been set up with layers of environmental fail-safes to protect the data such as climate control, fire suppression systems, security systems, backup generators and multiple internet fail overs.

HOW DO I ACCESS MY DATA AND APPLICATIONS?

Typically you are able to access your data and applications via secure login page accessed via a standard web browser such as internet explorer. After logging in you will have full and immediate access from any location, at any time, within the framework of secure authentication and authorisation. As long as you have an internet connection you can access your applications and data just as if they were located in your own office.

IS CLOUD COMPUTING SECURE?

Ask yourself, if someone accessed your PC right now – would you know and what could you do about it? Anyone who knows anything about computers will tell you that a hosted environment is just as secure as on-premises configurations, and in many ways, even more secure. Any PC connected to the internet is open to possible attack or intrusion – however unlike your own PC, clouds receive constant monitoring, tracking and auditing to ensure that their staff can respond to any situation within seconds.

WHAT ABOUT PHYSICAL SECURITY?

Clouds exist within Data Centres and therefore are generally more secure than they would be in your average small business facility. Data Centres generally have security protocols, establishing tight physical security, ensuring that only authorised personnel are allowed to access the equipment, and that a complete audit trail is kept at all times.

HOW DO YOU PROTECT AGAINST DOWNTIME AND SERVICE OUTAGE?

What’s frightening to most business owners is the idea that our data is floating out somewhere in cyberspace rather than sitting next to us on a PC at our feet. The fact that someone spilling their coffee into our machine could end our business never seems to occur to us. Those of us willing to take the leap to move to a cloud environment are then plagued by the question of what happens if the cloud provider goes offline.

Most Data Centres protect their servers against power outages with a UPS backup followed by backup generators to ensure continued service in case of a utility outage. RAID protection is employed for all disk subsystems to protect against disk failure, and load balancing is employed to ensure that even if a server is taken offline, the data and applications being served will continue uninterrupted.

Often a Data Centre will have multiple internet providers so that if one goes offline they switch access to another. Good cloud application providers will partner with several cloud hosts in multiple locations, meaning that even in the unlikely event that one cloud goes offline; they can simply switch you to another.

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