# Table of Contents

**Introduction** .................................................................................................................................................. 2  
**Cloud Providers** ............................................................................................................................................. 3  
**Cloud Components** ........................................................................................................................................ 3  
  - Virtual Servers and workstations .............................................................................................................. 3  
  - Software .................................................................................................................................................... 4  
  - Backup ....................................................................................................................................................... 4  
  - Disaster Recovery ...................................................................................................................................... 4  
  - Managed Firewall ...................................................................................................................................... 4  
  - Connections .............................................................................................................................................. 4  
**Why Cloud for Credit Unions?** ...................................................................................................................... 5  
  - Security ..................................................................................................................................................... 5  
  - Resiliency .................................................................................................................................................. 5  
  - Operational Efficiency ............................................................................................................................... 5  
**What to Watch Out For** ................................................................................................................................. 6  
  - Reputation ................................................................................................................................................ 6  
  - Certifications and Reporting ..................................................................................................................... 6  
  - Disaster Recovery .................................................................................................................................... 6  
**Summary** ....................................................................................................................................................... 6
Introduction

Cloud computing for the Credit Union industry is growing rapidly. Cloud is also increasing in popularity with the financial sector as a whole. According to Bank Systems and Technology the financial market for cloud services grew 67% in 2010 and estimated to be as large as $186 million in the next 3 years. A recent Gartner report stated that over the next 5 years, the cloud services industry will exceed $148 billion, over double what the market totaled ($68 billion) in 2010. Why the big increase? What is so special about cloud services? We will look to answer these questions as well as how does cloud apply specifically to the Credit Union industry.

What is cloud computing? It’s a hot catch phrase one seems to hear everywhere lately. At its root, cloud is nothing more than hosted services. Credit Unions have been consuming hosted software for years such as core processing, email and payroll for example. This is known as Software as a Service (SaaS), and it’s one of the cornerstones of cloud computing. Salesforce.com, Google Docs, and Open Office are all examples of SaaS.

Another pillar of cloud is Platform as a Service (PaaS). This is offering development tools to programmers on an as needed basis. Have a developer that needs to use VB.Net? Lease it from a cloud provider rather than spend big money on software licenses.

The last and most compelling offering of cloud is called Infrastructure as a Service (IaaS). This area has been gaining in popularity since the advent of hardware virtualization. In recent years, hardware virtualization has taken the technology world by storm. It reduced the number of servers needed in a datacenter by having the ability to run multiple instances of Windows or Linux or any operating system on a single machine. VMWare came out in front of this revolution but Microsoft and Citrix quickly jumped in the fray. A growing majority of datacenters are using virtualization in production for not only servers but workstations as well. This reality that a server or workstation instance is simply a file on storage revolutionized how we think about computing and computing resources. A server instance can migrate to the system with the best resources to run it in the datacenter. This concept of having IT resources on demand is what is called a “Private Cloud”.

Taking this a step further then, if it can run in the datacenter, why not outside the datacenter? This introduces the “Public Cloud”. Take an example of month end processing. You have to buy a system big enough not only to run daily processing but month end processing as well. Yet for the other 30 or so days of the month is just excess capacity sitting unused. Cloud providers are saying well why not migrate that machine to the cloud and only pay for the extra resources when you need them instead of all month long? That’s a powerful argument and hard to ignore in tough economic times. Cyclical businesses like florists are looking to use this kind of technology. Not having to put out the cash for a huge system to run their Valentine’s Day orders increases profitability when the system they need the rest of the year is just a fraction of the cost. Simply put it lets you pay for exactly what you use.

It’s not a big leap then to imagine running the server and workstation instances from the cloud full time, not just at peak times.
Cloud Providers

There are several cloud providers out there and more will be popping up as time goes on. The big players are Amazon and Rackspace among others. These “big box” cloud providers are providing virtual machines and little else. It’s really for businesses that have a full IT staff and need resources but want to manage everything themselves. This might be a fit for some very large Credit Unions but not the vast majority.

Core processing vendors are looking to enter the market. They already have a lion’s share of a Credit Union’s important data (if it’s hosted) and it would seem a logical extension to host the rest. Not many are on the market yet but this will increase as the demand for cloud services builds.

Other industry players will be or are in the cloud services market. Disaster recovery companies such as Ongoing Operations, LLC are launching cloud offerings. Again, they are already safeguarding your Credit Union’s data from a disaster recovery standpoint now they are moving into the production arena. In both the core and DR cases you are using a trusted partner. That is the most important thing here; you want a more secure environment. These companies have the resources to build a word class datacenter and share the cost across many customers. Not all companies will offer the same services so it will be imperative to get to the details and compare providers.

Cloud Components

So what makes up a cloud offering? While it will vary from provider to provider, here is a listing of the more standard services.

Virtual Servers and workstations

All cloud providers will offer some type of virtual workstation and server. These will be powered by VMWare, Citrix, Microsoft or other virtualization software. All will be accessible via the internet. Some will offer more secure access than others, and charge accordingly. Typically you choose the operating system, RAM and drive space. Some providers include antivirus, antimalware, local firewall and routine operating system patching while others do not. This is something to watch for if price comparing.

For servers, most will offer a database server, an application server and a web server as separate choices. Obviously at different pricing as database software licensing can be costly. Depending on the provider the web server is hardened for internet exposer, etc. This offers IT folks many options and flavors to suit their needs. Workstations also come with a variety of operating systems, RAM and hard disk options as well. Accessing these workstations can be done from the pc’s already in place. You can replace the pc’s over time with thin client terminals that cost roughly $300 and have a useful life up to 8 years. Some cloud providers are leasing the terminals with the workstation as an option.
Software
Most cloud providers provide some Software as a Service (SaaS). Typical offerings include E-Mail, Adobe and most Microsoft titles. This is an area Credit Unions could really influence with applications widely used in the industry. The great thing with many cloud providers is that the usual business software is available and can be included in the monthly cost of the workstation. So if you have someone who needs the full Adobe suite for a project lasting a few months, you only pay for what you use. No longer buying software someone needed and seeing it sit on a shelf once the project is complete.

Backup
One of the great things many providers bundle with their virtual machines and workstations is backups. No more dealing with all that tape! Most provide a portal to manage what gets backed up when and how often. From the portal you can perform restores on demand. Watch though and make sure your provider replicates or stores the backups off site.

Disaster Recovery
This is an area where the disaster recovery companies bring a lot to the table. They can include customary disaster recovery services in the cloud offering. Things like a secondary site that data is replicated to, off site backups and scheduled DR testing failover to meet examiners requirements. Many also offer colocation and dedicated workspace in most cases.

Managed Firewall
Another service that many Credit Unions employ from various vendors is managed firewall. In a cloud scenario, the bulk or heavy firewall lifting is done at the cloud provider’s datacenters. However you can’t let the security slip at your offices and branches. Firewall configurations become much easier and more static but are still extremely necessary. Each office or branch will need an internet connection so many cloud providers will offer managed firewall services.

Connections
Connections to vendors are going to be a critical area in evaluating cloud providers. Connections such as core processing (if your core isn’t your cloud provider), ATM systems, the Federal Reserve, Home Banking provider, Bill Pay providers, etc., will be critical. Evaluating cloud providers ability to establish all the necessary connections is a major step in the process. The disaster recovery providers may have a leg up in this area because they must have these connections in a disaster.
Why Cloud for Credit Unions?

We will look at 4 main reasons Credit Unions should, at the very least, look at cloud services: security, resiliency, operational efficiency and cost.

**Security**

The threat landscape for financial institutions is constantly moving and changing. New malware, viruses and vulnerabilities are discovered daily it seems. Credit Unions struggle every day to keep up with these changes and find mitigations against them. It is an extreme uphill battle. In a cloud scenario the bulk of this worry and work falls on the cloud provider, particularly if you choose a provider that includes patching in their offering. Most cloud companies will allow users to do third party vulnerability scans or at a minimum provide the results from scans they purchase. Choose a company that is SSAE16 compliant and provides at least a yearly penetration test report on their environment.

For most Credit Unions, web and email filtering, antivirus and antimalware, firewalls, intrusion prevention and detection systems and secure email systems are overwhelming and very expensive. The benefit that cloud can offer is all these security measures can be built right in to the solution, all managed for you and you pay a low monthly cost per machine you need. Again you will still need internet connections in your locations to connect to your machines in the cloud so local firewalls will be necessary.

**Resiliency**

Moving servers and workstations to the cloud provides a level of resiliency and redundancy most Credit Unions could never afford to do on their own. In the cloud, you can get to your workstation and servers from anywhere you can get an internet connection. If you choose a cloud provider that is replicating your data to one or more backup sites you will have an excellent disaster recovery strategy. No more restoring systems from scratch from faulty tape for an annual test. Simply access the systems from an alternate site, or yearly ask your provider to serve your systems up from an alternate location. This is just what the doctor ordered for pandemic planning as well!

**Operational Efficiency**

Many Credit Unions can’t afford dedicated IT staff. This has fallen on multiple people in the CU while relying on outside vendors for technical assistance. Those Credit Unions that do have IT staff know how far they are stretched. Taking the infrastructure and most of the security worries away from internal staff gives them the time and resources to do more work benefiting the Credit Union. Eliminating or reducing licensing worries, hardware repairs, negotiating contracts and supervising consultants are just a few of the benefits. Most of these are soft costs that are hard to quantify but for some institutions these can be huge savings.
What to Watch Out For

So all of this sounds wonderful but are there pitfalls? There are definite areas you should be aware of when choosing a cloud provider, among them: reputation, certifications and reporting, and Disaster Recovery.

Reputation

When looking at a cloud provider you want to make sure you are working with a trusted partner. Look to companies you are familiar with and have a proven track record. This company will be housing your data and with it the trust and reputation of your Credit Union. Putting your data in the cloud doesn’t mean it’s no longer your responsibility to safeguard it. Doing a full IT security risk assessment should be the first step once you select a provider.

Certifications and Reporting

Certifications to look for are SSAE16, and NCUA reviews. Reports to request would be penetration test results, vulnerability scans and any internal audit reporting they are willing to share if any. If your budget would allow it is always a good idea to run a vulnerability scan or penetration test against a vendor (with their permission) before final selection.

Disaster Recovery

It is extremely important to select a cloud provider who has a solid, tested disaster recovery plan. Many providers out there do not have secondary sites or replicate data. For financial institutions this is one huge benefit that going to the cloud can offer. Ask to see their DR Plan and results from testing if available.

Summary

The cloud is a place that can offer great benefits to Credit Unions of any size. To access workstations and servers anywhere you can get to the internet adds reliability and flexibility to any institution. It only makes sense of course if you can move to the cloud and be safer, stronger and more secure. Do your homework on your potential providers and keep your eye on the reports they distribute. It’s still your responsibility to safeguard your member’s data. Hopefully you will only be improving your Credit Union’s security and its ability to respond to member’s needs.