

Week 06 Assignment 6-3

William Slater

CYBR 625 – Business Continuity Planning and Recovery

Bellevue University

A Brief Review of Cloud-Based Disaster Recovery Services

Sue Sampson, M.S. - Professor

October 7, 2012

A Brief Review of Cloud-Based Disaster Recovery Services

This brief paper will discuss the concept of Disaster Recovery as a Service (DRaaS) and give an example an actual provider and examples of rates in their service catalog.

A Brief History of the Modern Cloud and Cloud Service Models

In October 2005, Microsoft’s Ray Ozzie and Bill Gates both published internal Microsoft memos that were purposely leaked to the press. These memos each described Microsoft’s future direction to embrace and extend the idea of Cloud Computing. In fact, Ozzie made the statement, “People don’t really care HOW this stuff works, they just want it to work. What followed was a technology race in which Microsoft decided to spend billions of dollars to design, build and operate “Cloud Data Centers” in a credible effort to compete with and perhaps even surpass Google, Yahoo, and Amazon. I was personally involved with this effort as I was chosen to manage Microsoft’s Flagship Cloud Data Center near Chicago for eight months during 2008. The two figures below show the massive scale of this Cloud Data Center facility.

Microsoft Chicago Data Center



Figure 1 – Side Views of the Microsoft Chicago Data Center

Microsoft Chicago Data Center

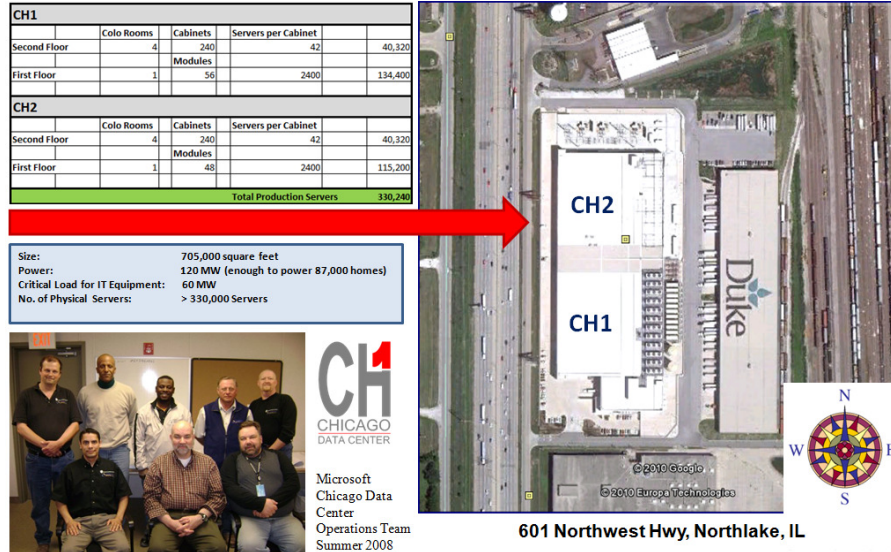


Figure 2 – Details and Overhead View of the Microsoft Chicago Data Center

In January 2008, after the publication of Nicolas Carr’s book, *The Big Switch*, which outlined the business case for the sound economics and trend toward Cloud Computing, a veritable industry buzz started about Cloud Computing (Carr, 2008). This quickly led to the emergence of three commonly accepted general utility models of Cloud Computing as shown in the table below:

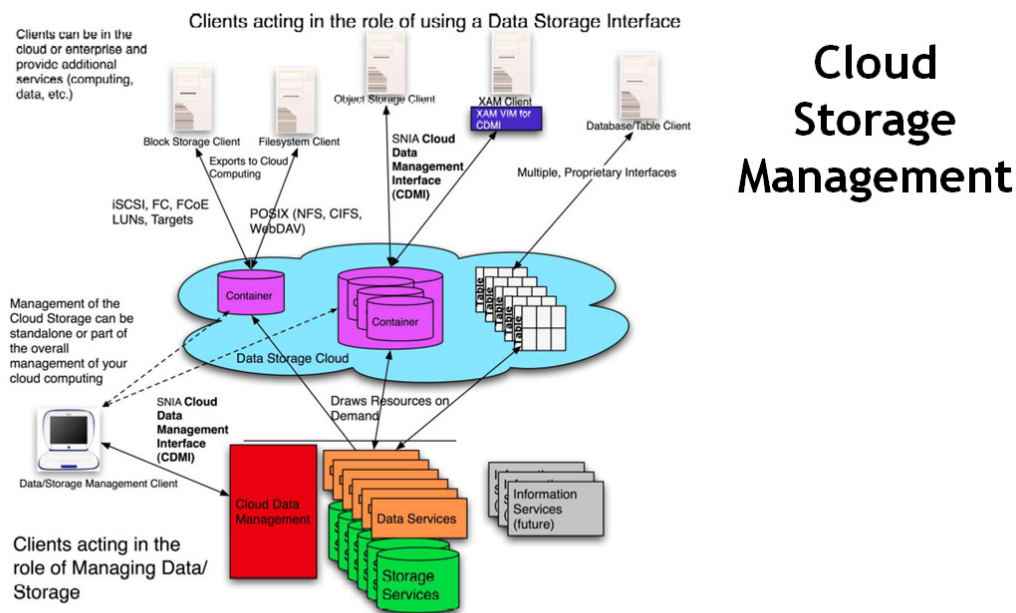
Term	Explanation	Examples
Infrastructure as a Service (IaaS)	Using Cloud Data Center Infrastructure to store data	Windows Live Skydrive, Backup, Storage, etc.
Software as a Service (SaaS)	Using provider-based applications located Cloud Data Center assets to perform business functions	Using GoogleApps, Yahoo Mail, Hotmail, etc.
Platform as a Service (PaaS)	Using the capabilities of Cloud Data Center assets to build customer applications that are designed for the Cloud.	Using Windows Azure and Microsoft Cloud-based components (SQL Server, Sharepoint, etc.) to build Cloud-based applications

Table 1 – Summary of Common Cloud-Oriented Models

Since 2009, as businesses have begun to realize that migrating to one of more these Cloud Computing models could represent significant cost savings, Cloud Computing has become a predominant and disruptive paradigm shift, as important as the business adoption of the world wide web in the late 1990s and the client / server computing paradigm that took hold in the early 1990s (Rosenburg and Mateos, 2011).

DRaaS

The 21st century demand for better and faster Disaster Recovery capability, coinciding with the rapid maturation of Cloud Storage Management (see figure 3 below) has given rise to the creation a new type of Cloud Computing Service that can efficiently and effectively support the business and technical needs of an IT staff to provide Disaster Recovery Services. This is now known as Disaster Recovery as a Service.



Source: CSI Private Hybrid Cloud White Paper
http://www.snia.org/forums/csi/knowledge/CSI_Private_Hybrid_Cloud_White_Paper_final.pdf

Figure 3 – Cloud Storage Management

Advantages of DRaaS

Since many companies have already experienced cost-savings of adopting Cloud Services models, the adoption of DRaaS is usually easy to accept if they have already embraced IaaS and Cloud Storage Management. In fact, it is possible that companies could lower both their Recovery Time Objective (RTO) and their Recovery Point Objective (RPO) by having a Cloud Services provider enroll them in a DRaaS program.

Some Providers of DRaaS

The list below shows some companies that are already providing well-developed DRaaS service packages:

Company Name	Service(s)	Comments
RapidScale	DRaaS services based on the buyer's business needs.	See: http://www.disasterrecoveryasaservice.net
Onyx Group	Business Continuity Service in the Cloud – Based on the buyer's business needs	See: http://www.onyx.net/
Zerto	DRaaS services based on the buyer's business needs.	See: http://www.zerto.com/bcdr-for-cloud-providers/dr-as-a-service/

Table 2 – Summary of DRaaS Providers

Caveat Emptor: Let The Buyer Beware

There are several issues related to Cloud Services that many people do not fully grasp, because although everyone is thinking of rushing into the Cloud to save money and plan on massive IT Staff reductions, they don't understand the Cloud. Here are some of the questions that people need to consider before rushing into the Cloud Computing paradigm:

- 1) What is the business continuity plan for your Cloud Provider? If there is a catastrophe at the Data Center doing the Cloud Service Hosting, how and where does the Cloud Service Provider recover?
- 2) Cloud Security – many still feel that there are many unanswered questions in this area, particularly on machines where there are shared services and/or shared machines.
- 3) Network usage for downloads. Many Cloud Service Providers, especially Microsoft have FREE upload capability because they want you to put as much data as possible in their Cloud Data Center. A big issue is the download, because they charge you in a big way for downloads from their Cloud Data Center to your facility.
- 4) If any services are related to Platform as a Service (PaaS), does the IT staff fully understand how to manage such environments and the cost implications of not understanding PaaS? For example, you can spin up many virtual shared and/or reserved servers to test applications in the Cloud, but if you forget to shut such servers down when you no longer need them, you will get a very large bill at the end of the month for services that you no longer needed but forgot to shut down.

5) If the Cloud Facility should suddenly be shut down by court order, as in the case of Megaupload.com and Kim Dotcom, how can you get access to your business critical data? Don't think this cannot happen. There was at least one legitimate business that was crippled by the Federal shutdown of Megaupload.com.

Conclusion

This brief paper has discussed a short history of Cloud Computing and the recent emergence of a DRaaS, as well as the early providers of DRaaS.

References

- Babcock, C. (2010). Management Strategies for the Cloud Revolution: How Cloud Computing is Transforming Business and Why You Can't Afford to Be Left Behind. New, NY: McGraw-Hill.
- Beard, H. (2010) . Cloud Computing Best Practices, second edition. Brisbane, Australia: The Art of Service.
- Betts, D., et al. (2010). Moving Applications to the Cloud on Microsoft Windows Azure Platform. Redmond, WA: Microsoft.
- Brandon, J. (2011). How to Use the Cloud as a Disaster Recover Strategy. An article published at the Inc.com website on June 23, 2011. Retrieved from <http://www.inc.com/guides/201106/how-to-use-the-cloud-as-a-disaster-recovery-strategy.html> on October 4, 2012.
- Carr, N. (2008). The Big Switch: Rewiring the World, from Edison to Google. New York, NY: W. W. Norton & Company.
- Gregory, P. (2008). IT Disaster Recovery and Planning for Dummies. Indianapolis, IN: Wiley Publishing.
- Halpert, B. (2011). Auditing Cloud Computing: A Security and Privacy Guide. New York, NY: Wiley.
- Hurwitz, J. (2010) Cloud Computing for Dummies. Indianapolis, IN: Wiley.
- Jennings, R. (2009). Cloud Computing with the Windows Azure Platform. Indianapolis, IN: Wrox.

Krutz, R. L. and Vines, R. D. (2010). *Cloud Security: A Comprehensive Guide to Secure Cloud Computing*. New York, NY: Wiley.

Linthicum, D. (2010). *Cloud Computing and SOA Convergence in Your Enterprise: A Step-by-Step Guide*. Upper Saddle River, NJ: Addison-Wesley.

Rapid Scale. (2012). *Disaster as a Service Planning and DRaaS Solutions – A Services description*. Retrieved from <http://www.disasterrecoveryasaservice.net/draas-providers.html> on October 4, 2012.

Reese, G. (2009). *Cloud Application Architectures: Building Applications and Infrastructure in the Cloud*. Sebastopol, CA: O'Reilly.

Rhoton, J. (2010). *Cloud Computing Explained*, second edition. U.K.: Recursive Press.

Rosenburg, J. and Mateos, A. (2011). *The Cloud at Your Service*. Greenwich, CT: Manning.

Sosinsky, B. (2011). *Cloud Computing Bible*. Indianapolis, IN: Wiley.

Velte, A. T., et al. (2010). *Cloud Computing: A Practical Approach*. New York, NY: McGraw-Hill.

Wallace, M. and Webber, L. (2011). *The Disaster Recover Handbook: A Step-by-Step Guide to Ensure Business Continuity and Protect Vital Operations, Facilities, and Assets*, second edition: New York, NY: American Management Association.

Watters, J. (2010). *The Business Continuity Management Desk Reference: Guide to Business Continuity Planning, Crisis Management & IT Disaster Recovery*. Northamptonshire, UK: Leverage Publishing.

Whitman, M. E. and Mattord, H. J. (2007). *Principles of Incident Response & Disaster Recovery*. Boston, MA: Course Technology – Cengage Learning.

Winkler, J. R. (2011). *Securing the Cloud: Cloud Computing Security Techniques and Tactics*.

Waltham, MA: Syngress.