David Beats Goliath in the Battle in the Clouds

Nirvanix winning storage cloud customers against EMC and Amazon

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Introduction

Currently, Cloud Computing is the most abused subject in the industry. There is no vendor presentation or event without mentioning Cloud Computing. Companies that two years ago emphasized SOA, today, without changing a single chip or line of code, are placing new "cloud ready" stickers on their products. So, what is Cloud Computing?

A University of Berkley paper[1] defines:

> *"Cloud Computing refers to both the applications delivered as services over the Internet and the hardware and systems software in the datacenters that provide those services. The services themselves have long been referred to as Software as a Service (SaaS). The datacenter hardware and software is what we will call a Cloud."*

There are three major models of clouds: public clouds, private clouds and hybrid clouds.

- Public clouds offer their service over a public network and can be segmented as:
  - consumer use, such as social networks (e.g., Facebook, Twitter),
  - public applications (e.g., email provider, Google apps), and
  - public enterprise clouds (e.g., Amazon S3, Rackspace Hosting)
- Private clouds deliver services for organizations internally behind a VPN.
- Hybrid clouds combine the public and private clouds, e.g., an organization uses an internal cloud to access an ERP application, but an external provider for email services.

The business model of the first two options of public clouds is simple, general access, no or low charges, and low SLA levels. The public enterprise cloud is a different story: It needs to

[1] Above the Clouds: A Berkeley View of Cloud Computing. February 10, 2009. Michael Armbrust, Armando Fox, Rean Griffith, Anthony D. Joseph, Randy Katz,Andy Konwinski, Gunho Lee, David Patterson, Ariel Rabkin, Ion Stoica, and Matei Zaharia.UC Berkeley Reliable Adaptive Distributed Systems Laboratory http://radlab.cs.berkeley.edu/

allow for limiting access, and requires high security, business continuity, multi-tenancy, high scalability, flexibility, as well as potentially lower costs compared to traditional data centers. The preferable financial model of this option is pay-per-use or Utility Computing.

Early Deployment of Public Clouds and Storage as a Utility

The idea of utility computing is not new, it was presented as early as 1961 by John McCarthy in a speech at MIT. Eleven years ago, at the peak of the .com era, several companies such as SNI offered tier-1 storage as utility storage. These companies disappeared as fast as they appeared, mainly because of wrong technical and financial concepts. A few years ago came the second wave of storage-as-utility with companies such as Amazon S3, Google and Rackspace Hosting. In 2009 and 2010 all these companies suffered from outages which validated users' concerns about data and application availability in the cloud. It seems that the early providers did not deploy a robust infrastructure to avoid such incidents.

Nirvanix Gets It Right

Nirvanix learned from the mistakes of the early storage utility and storage cloud providers[2] by providing flexible storage services with high availability and enterprise-level support. Nirvanix is a privately-held company headquartered in San Diego, California, and has raised more than $30 million in VC funding from sophisticated investors. Unlike other cloud providers, Nirvanix' sole business is the providing of technologies for clouds and cloud services. Its *CloudComplete* offering includes:

- Nirvanix Storage Delivery Network (**SDN**) is the company's public cloud service.
- **CloudNAS** is the cloud gateway software for accessing data stored in the cloud transparently through NFS and CIFS (for Linux and windows shares), or even FTP and HTTP. It provides Quality-of-Service (QoS) for data transfers to ensure the highest performance levels. In case of hardware malfunction a user can reload the software in any location and to use the available storage capacity.
- **hNode** is the company's cloud software for private and hybrid cloud users. It supports all major file systems such as NetApp, Isilon, Exanet, Ibrix, Celerra, etc. It allows customers freedom of choice in selecting storage; they can keep their existing storage infrastructure and thus ensure investment protection.
- Management Portal (**NMP**) - a web-based tool that provides instant insight into service status, account features, usage and costs. Billing and metering can be viewed in aggregate, per application, or by specific end-user.

[2] "*The clever learn from their own mistakes, the wise learn from other people's mistakes*" – source unknown

The SDN network is comprised of seven globally distributed nodes, all part of a single namespace, strategically located to optimize global access (LA, Dallas, New Jersey, Frankfurt, Switzerland x 2, Tokyo). The SDN network can store users' data in multiple geographic nodes, allowing customers to adhere to regulations regarding data storage locality, as well as providing high data availability and high performance because the storage requests are served from the best network location. Through the global namespace customers can see all their data, no matter where it is actually stored. The SDN ensures a fully-redundant infrastructure, integrated load balancing, physical security, secure multi-tenant file system, and encryption.

Cloud Market and Competition

A recent *Storage* magazine/SearchStorage.com purchasing intentions survey shows that:

> *"23% of respondents use some form of cloud storage for primary or nearline storage vs. 14% last spring", and "9% ported some of their data center primary data to the cloud in comparison to 4% last year".*

These are still small numbers but what is important to watch is the momentum. The main reasons for the slow initial pick-up were users' concerns about data security, scalability, availability, and the business models of the early cloud providers.

The major Cloud Computing players, in addition to those listed above are AT&T (with EMC ATMOS), Iron Mountain Digital, and large ESPs such as IBM and HP. Today Nirvanix' cloud serves more than 1200 world-wide end users, 700 directly, and the rest by service providers using Nirvanix' cloud technologies. Among the customers are large corporations such as NBC Universal, Cisco, Comcast, Fox Sports, Royal Bank of Scotland, VMware, and GE. How did Nirvanix, which is relatively small compared to these giants, manage to gain the confidence of these large and sophisticated customers? The answer is, by offering advanced technology, created exclusively for cloud storage, with features answering users' requirements, and an interesting, aggressive business model. Unlike early storage utility providers, Nirvanix exploits the current fast growth in unstructured storage by providing host NAS access to nodes of tier-3 storage (2 TB SATA-type disks). The SDN pricing model is based on a pay-per-use approach: No expensive up-front investments for initial or upgrade capacity are necessary since the costs scale directly with the storage requirements. Storage is available starting at $0.25/GB/month for a single-node SDN solution, a three-node SDN solution hosting the replicated data in three data centers with five-nines of availability would cost $0.71/GB/month[3].

[3] These are list prices.

Case Study: NBC Universal

NBC Universal is one of the world's leading media companies in the entertainment, news, and information sectors.

Customer Problems

- High data growth: ca.100 TB/month, expected to total 7.3 PB by 2012.
- To archive using similar storage tier as primary means a heavy budget impact.
- "Out-of-region" disaster recovery protection requirements.

"We needed to find an easy to manage, cost-effective archive solution that scales".- NBCU

NBCU rigorously tested Amazon S3, Iron Mountain Digital, and EMC Atmos in addition to Nirvanix. Nirvanix' SDN was ultimately selected for offsite data archiving.

Reasons for Selecting Nirvanix Solution for NBCU

- Offsite data protection offered by Nirvanix SDN, with easy-to-manage policy-based replication.
- Very high scalability in multiple storage locations. Freedom in selecting storage site(s), and ability to audit them, which is not possible with Amazon, for example.
- A direct connection to Sohonet and CloudNAS feature set allows for simple, secure, global distribution & collaboration, e.g., for foreign subsidiaries and customers.
- True pay-per-use model allows reducing capital costs requirements. (EMC Atmos was proposed with an up-front payment requirement, which may be a model more suitable for cloud providers, not public cloud users).

Management Changes

Nirvanix recently appointed Scott Genereux as president and CEO, and Steve Zivanic as Vice-President of marketing. This duo worked together at HDS (where Genereux was the SVP of sales), Data Direct Networks, and QLogic. The sales specialist Genereux soon after initiated an aggressive account executive hiring campaign, while the hyper-competitive Zivanic went into overdrive spreading the Nirvanix message.

Conclusions

Nirvanix is the best-kept secret in the storage clouds. Hardly a household name, its top-notch technology, enterprise-level services, and sound pricing models allow it to compete with and beat much larger competitors and have won it quite a few large customers. Now, this relative obscurity is about to change with the recent management changes. Once (pardon the pun) the clouds lift, Nirvanix is bound to emerge as a major force to reckon with in the Cloud Computing market.