

## CloudSwitch connects datacenters out to clouds

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**CloudSwitch** is coming into view, having spent the past year testing its cloud on-ramp software with a number of paid beta engagements. It's one of the most talked-about 'stealth' IT companies of recent times.

There are a number of on-ramp companies like CloudSwitch operating at the coalface – getting users onto the cloud and providing a management environment. A key difference from other approaches (which are mostly targeted at getting users onto the cloud) is that CloudSwitch is designed specifically to connect out from users' own datacenters to the cloud.

CloudSwitch's goal is that every medium or large company that wants to bridge to a cloud and take existing applications with it will consider using its product. As such, the company has arrived at the right time and place: experimentation with basic applications in the public cloud and 'planning' for eventual bridging of internal and public clouds is happening across most industry segments. One difference seems to be the amount of time users think it will take for public clouds to overcome their barriers to using them. Here, time frames start at a year and go out to five years, well within the procurement planning cycles of large IT organizations.

### The 451 Take

Getting on to the cloud is only one activity on a journey that must begin with objectives and planning and end with an assessment of benefit and future course of actions. The journey is not the end in itself, so CloudSwitch's ability to dovetail with these processes will be key. Organizations should (though mostly don't) have a service catalog of applications and activities available to end users as the beginning of the on-ramp process. This can be used to understand the costs and SLAs for each, and to decide what can go on to the cloud and what it will take to get companies cloud-ready.

### Context

CloudSwitch claims it has overcome some of the most intractable technical problems associated with deploying on to clouds, and at a number of levels. For applications, this includes creating shared and persistent storage, providing change management and the automation of configuration tasks. At the network layer, this involves changing IP addresses,

deploying DNS and replacing layer 2 services. For security, the challenges include encryption, key management, VPN deployment and router modification. Management means linking and duplicating existing datacenter services in the cloud.

As a consequence, CloudSwitch believes it can enable end-to-end security; move existing applications to clouds without modification; provide a single point of control; and manage applications from within the datacenter using existing tools and processes while protecting against cloud lock-in. It enables layer 2 connectivity. CloudSwitch is supporting **Amazon EC2** initially – what its beta users asked for – but has plans to support **Rackspace, Microsoft, VMware vCloud, Terremark** and other clouds as required. Virtual machine administrators and managers will be the operators of CloudSwitch software.

## **Technology**

A CloudSwitch virtual appliance resides on the customer datacenter and is connected through the firewall via an encrypted tunnel to the cloud(s). Each virtualized server in the datacenter requires a CloudSwitch container to participate. In its initial Amazon EC2 incarnation, an AMI-based CloudSwitch container instance is launched on EC2, which handles application processing, data and storage requirements using the company's core IP, the CloudSwitch Isolation Technology.

The isolation mechanism sits on top of the virtualization layer, providing integration and translation services as well as key management. A single instance of a CloudSwitch gateway appliance is also required to act as the end point for each tunnel in the cloud – one per 'region.' This gateway instance is deployed automatically, and managed by the CloudSwitch virtual appliance.

Users continue to manage applications using whatever tools they already have. The CloudSwitch configuration console is remarkably similar to those used by Amazon, Microsoft, Rackspace, **Verizon, BT Group** and others to configure resources – CloudSwitch configures both internal and cloud resources as a single logical entity. The company offers command line, scripting, API and GUI interfaces.

## **Business model**

CloudSwitch has raised \$15.5m in two rounds from **Matrix Partners, Atlas Venture** and **Commonwealth Capital Ventures**. Former **SolidWorks** CEO John McEleney is president and CEO of the 20-person company and was most recently an executive in residence for CloudSwitch's venture backers. Other executives hail from **BMC, EMC, Netezza, RSA** and **Sun Microsystems**.

CloudSwitch has been operating a private paid beta at six sites. When its Enterprise software becomes available, it expects to charge an annual subscription depending on the number of servers supported, starting at \$25,000 a year. It's also offering a free 'Explorer' edition for a limited number of servers, which will be available later this quarter. The customer will pay the cloud operator for cloud services directly.

## Competition

CloudSwitch's key differentiator is being able to connect clouds back to users' own datacenters, securely. Having said that, in the time it's taken CloudSwitch to get out of the gate and develop its message, Amazon has brought its Virtual Private Cloud offering to market.

Amazon's VPC certainly solves some of the problems, and indeed some of CloudSwitch's beta users are also testing VPC. It's a question of approach more than anything. Amazon is a public cloud reaching inside organizations. CloudSwitch is the flip, reaching from within an organization out to the cloud. CloudSwitch believes its beta users' experience suggests VPC also requires modification of networking equipment since users must carve out subnets; VPC is delivered as a layer 3 service, with separate IP addresses. CloudSwitch is layer 2 connected, and preserves all networking configurations (all the way to Media Access Control addresses).

**RightScale**, by contrast, is more focused on new application development and the use of its own management tools, as opposed to CloudSwitch's hybrid approach. It is concerned primarily with getting users on to clouds, and providing load balancing and other functions to cloud-based resources. It may ultimately provide a brokering function too, though that's not clear at this point.

While CloudSwitch is keen to portray itself as a broker between the datacenter and the cloud, the reality is that the incumbent management framework vendors will compete directly with it. Possibly more so than the raft of cloud-enablement companies, of which **Zimory** arguably has a lead with both resource and data management functions. **Hewlett-Packard's** latest Operations Orchestration release now enables users to add Amazon EC2 (and in future, other clouds) as destinations for enterprise workloads in addition to in-house virtualized resources.

**IBM** Smart Business cloud services, including CloudBurst, **CA Inc** and BMC, are also working in this area. Meanwhile, VMware's vCloud (at least in VMware-only shops) and the various private cloud enablement tools the EMC-**Cisco** Acadia venture will offer (with help from VMware and **Intel**) may also prove competitive.

**Elastra** – which has bucked the trend and is focused on private and hybrid cloud enablement instead of targeting service providers seeking to get into cloud – has notched up some notable early users for its cloud enablement software. It supports EC2 as a destination in addition to the usual internal virtualization layers. It will also be competitive.

**CohesiveFT's** VPN-Cubed took an early lead here, providing secured control of hybrid clouds, but has yet to bring reference customers into view. CloudSwitch believes CohesiveFT's approach to connecting datacenters to the cloud is more geared to a professional services offering than its own, and, as part of an infrastructure deployment, requires modification of a customer's network routers plus a VPN on every node.

## SWOT analysis

### Strengths

Hybrid models will predominate – clouds that are neither wholly in-house nor entirely outsourced, but located at the optimal point between the two. This approach enables enterprises to retain tight control of the management, policy and security related components by running them on local infrastructure, and at the same time farm out other tasks to be carried out in the cloud. CloudSwitch supports this scenario.

### Weaknesses

In the time it's taken CloudSwitch to come into view, other offerings such as Amazon's VPC have come to market, operating in the same space and connecting internal datacenters to cloud. Still, the market is Precambrian in terms of its maturity, so there's room for a range of players and approaches.

### Opportunities

While CloudSwitch doesn't do this initially, brokering between users' requirements and available cloud resources remains its founding vision. As the cloud matures and API proliferation becomes less problematic, a future incarnation of CloudSwitch as a cloud broker could offer users a choice of deployment options. Or, to borrow from the stock markets, a best execution venue dependent on user-based requirements such as latency, geography or price.

### Threats

Can CloudSwitch maintain differentiation against other hybrid cloud management approaches, especially those of the incumbent systems management shops? It's done a great job of getting attention, but will need partners and reference customers too. Enterprises are typically wary of startup companies, although the cloud is a leveler.

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