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DataCore renews storage virtualization, plays up virtual desktop synergies

Analysts: John Abbott & Simon Robinson

DataCore Software recently introduced the first complete rewrite of its core storage virtualization technology since it was founded in 1998. The newly launched SANsymphony-V will eventually replace the original SANsymphony product line and also incorporate the previously separate entry-level SANmelody software, first introduced back in 2005. It's been designed to better support more recent trends in computing, such as cloud, virtual servers and virtual desktops, but it also helps simplify the core functionality with a better user interface, auto-tuned caches and built-in features such as workflow, continuous data protection and automated traffic-compressing replication.

The 451 Take

Storage virtualization didn't take off as fast as DataCore anticipated. The 13-year-old company is still relatively small and hasn't yet attracted any lucrative acquisition offers from larger players. But on the back of server and desktop virtualization, storage virtualization has become more fashionable – after all, storage is one of the most expensive items in the infrastructure budget, and it makes sense to improve its utilization. On top of that, an emerging technology trend is to tie compute, storage and networking resources more closely together, at least at the high end of the market. DataCore provides a practical way of doing this for midsized and smaller customers, and its applicability to desktop virtualization could similarly 'scale down' the price of virtual desktop infrastructure, making it cost effective for smaller installations for the first time.

Context

Originally a classic startup that raised $70m in VC and strategic funding between 1998 and 2001, Fort Lauderdale, Florida-based DataCore spent its money developing and marketing what was at the time a revolutionary idea in storage. The vision was built around what it called 'storage virtualization' to break hardware lock-in by relocating core storage services away from embedded array controllers so that all storage capacity from multiple systems could be pooled and managed in a consistent way through a central software layer.

This approach ensured that DataCore initially attracted plenty of attention, especially from incumbent storage vendors. Although it managed to forge OEM partnerships with the likes of **IBM**, **Hitachi** and **NEC**, DataCore suspects that these partners were mostly interested in finding out how its technology worked, rather than selling. There were other challenges. For a start, there were no established sales channels in place aside from the OEMs, while threatened rivals such as **EMC** began aggressively marketing against the very idea of

virtualization (in particular focusing on the 'in band' nature of DataCore's software which, they claimed, was a particular weakness because it was on Windows.) To add to the confusion, that early period also saw multiple other startups emerge with similar propositions, including **FalconStor**, **StorageApps** and **StoreAge**.

In order to gain enterprise credentials, DataCore had to sell direct to begin with. It succeeded in signing up a number of mainstream customers, got a channel model up and running in Europe and also claimed some significant technical firsts – thin provisioning, under the name Network Managed Volume, was introduced two years before **3PAR**, for instance.

But progress was slow, and a dark period began in 2004 when the company admits it could have folded after taking in a total of $85m. However, rather than collapse when most of its investors (with the exception of **Flagship Ventures**) lost interest, the founders bought back the company and began work on an entry-level product, SANmelody. This began attracting interest from the **Citrix** and **VMware** channels, particularly in Europe, as server and desktop virtualization started to gain traction. By 2007, DataCore was seeing 80% growth rates in Central Europe. This momentum was enough to attract the unsolicited interest of **Insight Venture Partners**, which invested $30m, half of which was distributed among employees who DataCore says had shown amazing loyalty.

This funding injection provided DataCore with the ability to begin investing in its go-to-market model, and it has maintained double-digit growth worldwide for the last three years. Although unusual for a US company, DataCore does 70% of its business overseas, chiefly in German-speaking Europe (it has 500 hospital customers in Germany, for example), as well as France, driven by a focused and loyal partner base that lead with a virtualization – rather than a storage – pitch. It's now starting to ramp up this model in the US. Financially speaking, DataCore says it is profitable, with no debt and cash in the bank. Revenue-wise, it just closed its first $10m quarter. There are 6,000 customers, with 20,000 licenses sold over the life of the company. Headcount stands at 150.

Products

The new SANsymphony-V software, like its predecessors, implements key storage services (such as synchronous mirroring, asynchronous remote replication and low-impact online snapshots) within a software layer as an alternative to running them on array-based storage controllers. This enables fiber channel or iSCSI storage boxes from multiple vendors to be pooled together and managed consistently as a whole. New disks can be installed without disrupting the host servers; utilization can be doubled or even tripled; performance is often improved through the advanced caching capabilities; provisioning becomes more flexible; and redundancy/high availability is improved and simplified.

DataCore has always been Windows-focused, aimed at midmarket users comfortable with Windows server administration. But it also now supports Linux, VMware ESX, XenServer and Hyper-V hosts. Additions to the new version include integrated continuous data protection, multisite recovery and high-speed and traffic-compressing replication.

Perhaps the biggest difference with SANsymphony-V is in terms of the interface. While once it targeted technically savvy storage admins, its core target buyer now is the VM administrator who is much less proficient in storage. Hence, DataCore says it has redeveloped the UI and incorporated industry best practices through automation capabilities and guided workflows to hide as much complexity as possible. In doing so, it says admins only have to select a few parameters to automatically configure and tune caching, select the best I/O paths, optimize disk utilization through thin provisioning and automate multisite and bidirectional failover and recovery procedures.

DataCore also believes it has a significant opportunity to penetrate the storage market around desktop virtualization. It recently issued a white paper detailing its benchmarking of a midsized virtual desktop implementation (220 Hyper-V virtual desktops) supported by its SANmelody software, in which it claimed to reduce the total hardware costs to about $32 per virtual desktop – a great deal lower than the typical costs for VDI, which range from fifty to several hundred dollars per VM and only start to reach the low end of the cost scale when thousands of desktops are involved. The cost rises to $67 per desktop when the price of the infrastructure software, minus OS and applications, is added.

DataCore's test configuration consisted of a pair of standard servers running the storage virtualization software on the same servers as the virtual desktops. It claims this co-residency advantage cuts out the need for expensive stand-alone storage controllers while increasing performance through caching and the elimination of I/O latencies. The model also scales upward – additional nodes can best be added using a star topology with a central server hub.

Strategy

OEM business was once important to DataCore, but no longer. Most of the big vendors have now built their own implementations of storage virtualization. DataCore is now 100% channel focused. **Microsoft** and Citrix channel partners are the most obvious. Hyper-V will be a useful entrance card for further Microsoft business, and DataCore sees it as an underbelly growing day by day. For Citrix partners, SANsymphony-V could open up the midmarket virtual desktop business.

DataCore doesn't have any plans to sell a specific VDI product – instead, it will seek partnerships. But the work it's already done could lead to further new markets. Most interestingly, VDI shares some common characteristics with cloud computing – both serve a large number of similar platforms, meaning that resource requirements can be predicted and pre-configured. That's likely to be a focus of future work at DataCore. It already has a number of reasonably large hosting provider customers, including **Host.net** in the US and **iomart** in the UK.

Competition

DataCore is often grouped with the only other surviving peer storage virtualization vendor, FalconStor Software. However, FalconStor is much more focused on specific applications such as virtual tape. Instead, DataCore says its primary competition these days comes from **Netapp's** V-Series of open storage controllers, although it also runs into **HP's** Lefthand-based systems and IBM's SAN Volume Controller (SVC) and more lately, the new SVC-

based **StoreWize** V7000. Other storage stacks that, like SANsymphony, can run as a virtual storage appliance include **StarWind Software** and **Gluster**.

Although DataCore is still, in theory, competing with any storage systems vendor, it tells a more conciliatory story than it did in the old days. For a start, it often sells in conjunction with a storage systems partner. Examples include **XIOtech** in the US and **Fujitsu's** Eternus arrays in Europe – where SANsymphony helps to add high availability – and even server-centric SSD players such as **Fusion-io**. It also says that it can help reduce a customer's implementation cost for a new or existing system. For example, by running SANsymphony in front of an HP MSA or Lefthand box, it can deliver the same or better performance and functionality as a higher-priced HP EVA system. Of course, the storage system incumbents such as EMC are still entrenched in the market. DataCore believes its software allows it to circumvent these rivals, and draws an analogy with the virtual server market. Here, hypervisors have effectively made the specific brand of server platform less relevant; it believes its virtualization software effectively will have the same impact on the specific brand of storage device.

One potential threat to DataCore comes from the hypervisor vendors themselves. While DataCore says that co-residency with the VM provides it with substantial latency and cost advantages over traditional storage arrays, this is functionality that some hypervisor vendors intend to add themselves over time.

SWOT analysis

Strengths	Weaknesses
DataCore has heterogeneous storage virtualization cracked. It's been developing and selling the technology for the past 13 years.	The company is still relatively small, and it doesn't have a high profile, especially in the US.
Opportunities	**Threats**
Virtual desktop infrastructure has suffered from high setup costs – particularly storage – and until now there hasn't been a good business case for smaller customers.	Big storage vendors don't like the idea of losing control. They may compete against DataCore with similar, but more restricted, products. Some hypervisor vendors regard some of what DataCore does as more naturally aligned with their own platforms and may compete more aggressively in future.