DataCore adds auto-tiering to SANsymphony-V 'storage hypervisor'

Analyst: Dave Simpson

DataCore Software, a pioneer in storage virtualization, is taking that concept one step further by referring to the 8.1 release of its SANsymphony-V software as a 'storage hypervisor.' The key addition in this release is automatic storage tiering across heterogeneous disk platforms, including SSDs.

The 451 Take

DataCore has had its share of ups and downs over the last decade, but now claims double-digit annual growth over the last three years and 20-30% revenue growth over the last couple quarters. The launch of SANsymphony-V early this year gave the company a shot in the arm, as well as the ability to transfer its core value proposition into the world of virtual servers and desktops with what it is now dubbing its 'storage hypervisor' software. In the most recent release of SANsymphony-V, we particularly like the addition of auto-tiering across heterogeneous hardware, a natural follow-on to DataCore's core storage-virtualization philosophy. But DataCore is still no friend of the leading disk array vendors, which could continue to be the hurdle it has been in the past.

Context

In January, DataCore launched SANsymphony-V, a successor to its long-standing SANsymphony software that is designed specifically for virtualized environments, including **VMware**, **Microsoft** and **Citrix**. Already, SANsymphony-V (which will eventually replace the older SANsymphony) accounts for more than 80% of the company's revenue, with SANsymphony accounting for the remaining 20%. (DataCore's entry-level SANmelody was essentially absorbed into SANsymphony-V.)

DataCore has had a financially checkered past, but the introduction of SANsymphony-V may help it turn the corner. Since introducing the new platform in January, privately held and profitable DataCore claims 20-30% revenue growth per quarter, and double-digit growth over the last three years. The company says it has sold more than 20,000 licenses.

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Products

At last month's VMworld conference, DataCore announced the 8.1 version of SANsymphony-V. The key addition in SANsymphony-V 8.1 is automated storage tiering. Auto-tiering is certainly not new, but DataCore's implementation is different in that its software can automatically tier data across different classes of storage in a device-independent manner. In other words, instead of being locked into a single box or single vendor (such as **EMC's FAST**) – which is the case with most hardware-embedded approaches to auto-tiering – customers can use existing storage devices, from different array vendors, to keep costs down.

Heterogeneous auto-tiering is an option for SANsymphony-V that is free for users with more than 100TB. For users with less than 100TB, the auto-tiering option is priced at $2,000 per node. Since SANsymphony-V is typically deployed in a two-node configuration, the auto-tiering would cost $4,000 in a high-availability setup. The device-independent aspect of DataCore's auto-tiering is in line with the company's general philosophy; all of its storage services are device-independent, including thin provisioning, caching, synchronous mirroring, asynchronous replication, snapshots, continuous data protection and, of course, storage virtualization.

Storage tiers can consist of SATA or SAS disks (in external arrays or direct-attached to host servers), as well as SSD cards or external systems as a tier 0 level, all managed as a single virtual pool. The company is investigating adding the cloud to its tier hierarchy, possibly by partnering with a cloud gateway vendor, but has not made any specific announcements on that front. As with all tiering approaches, virtual disk data is moved to the most appropriate tiers based primarily on the frequency of data access, but, unlike some tiering implementations, data movement/placement occurs at the block, rather than file, level. DataCore had a more rudimentary implementation of storage tiering in previous versions of SANsymphony, but unlike the new release, it was not automated (i.e., required manual intervention) and it did not allow sub-LUN (i.e., block-level) tiering.

DataCore officials say that tiering granularity can range from 8MB to 1GB (user-selectable), but that the default size is typically 128MB. VMware administrators or storage specialists

initially assign tiers, after which the SANsymphony-V software automatically handles data migration between tiers. The company says users could theoretically define up to 15 tiers, but that three will suffice in most environments. In the case of adding SSDs to the tiered hierarchy, the company says that, because of the way SANsymphony-V handles writes in cache memory (to increase performance), this decreases traffic to the SSD tier, thus improving mortality rates (endurance) of the SSDs.

DataCore is actively pursuing partners for the SANsymphony-V and auto-tiering combo. So far, the company has cocreated a bundle with **Xiotech** that marries DataCore's software with Xiotech's ISE storage arrays. DataCore also has partnerships with **Fujitsu** (ETERNUS product line) and VirtualSharp. The company reports it has been talking to SSD specialists, including **Fusion-io**.

In addition to auto-tiering, other new features in SANsymphony 8.1 include integration with Microsoft Windows Snapshot (Volume Shadow Copy Service, or VSS), redundant mirror paths over iSCSI (in addition to fiber channel), out-of-band initialization for asynchronous replication, and integrated continuous data protection, which used to be a separate product. SANsymphony-V 8.1 licensing starts at $10,000 for a redundant, high-availability configuration.

With the release of SANsymphony-V 8.1, DataCore also introduced the term 'storage hypervisor' to describe its software. The company claims that its software does for storage what hypervisors do for virtual servers. Here's the company's definition: "A storage hypervisor is a portable, centrally managed software package used to enhance the combined value of multiple disk storage systems, including dissimilar and incompatible models, by supplementing their individual capabilities with extended provisioning, replication and performance acceleration services. Its . . . set of storage control and monitoring functions operate as a transparent virtual layer across consolidated disk pools to improve . . . availability, speed and utilization."

Although we do not think the term storage hypervisor will gain widespread usage in the industry, we do admire DataCore's creativity in coining it, as well as the company's perennial pluckiness.

Competition

DataCore has historically had two levels of competition, which does not change with the introduction of SANsymphony-V 8.1. As a pioneer in the storage virtualization space, the company competes with **FalconStor Software**, another storage-virtualization pioneer (we will be publishing a report on FalconStor within the next few days).

Both companies started out with core virtualization for heterogeneous storage platforms, and subsequently added a wide range of storage services. FalconStor has storage tiering in its Network Storage Server platform. Although DataCore pioneered the concept of storage virtualization, that term was somewhat hijacked by vendors with hardware-software virtualization approaches, such as **Hitachi Data Systems** (UPS V), **IBM** (SVC), **NetApp** (V Series) and, with less success, EMC (Invista).

DataCore also competes with all the key disk array vendors (some of which were once OEM partners). The disk array vendors (EMC, **HP**, HDS, IBM, NetApp, etc.) are competitors because DataCore's software enables users to virtualize all storage resources, thus enabling them to use existing and/or low-cost alternatives to systems from the leading array vendors.

SWOT analysis

Strengths	Weaknesses
DataCore has 13 years of experience in heterogeneous storage virtualization and related applications, and is now taking advantage of virtual environments with its SANsymphony-V software.	The company lacks the marketing clout and purchasing influence of its much larger competitors.
Opportunities	Threats
DataCore's software is particularly well-suited to the fast-growth virtual server and virtual desktop markets.	It competes with all of the leading disk array vendors, as well as storage-virtualization hardware vendors.

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