

DataCore's *SANmelody Disk Server Software* Delivers Build-to-Suit Block Storage

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Management Summary

Most technology products are built to sweet spots in the market defined by what the vendor can produce and what research says the market will demand. They are an abstraction, which, properly focused, will bring satisfaction to most parties. **It is the way to sell, to vend – but it may not be the way you want to buy.** The needs of any given enterprise are specific. This is particularly true if your enterprise uses direct-attach storage, or DAS. While not fashionable, these server-centric architectures are still used by enterprises with unreliable connectivity options and isolated servers. While other enterprises with SANs may argue the merits of *huge* versus *many*, the medium-sized DAS enterprise knows exactly what it needs – and where. Still, a lot of time can be spent trying to determine the *best fit* (with the least disruption) of the business need with the *features* of the product and the *services* and *pricing* schemes offered.

What if you could acquire storage capacity like you lease office space? When you look for office space, some degree of build-to-suit is the expectation. While you may pay for this accommodation in your monthly rent, it is functionally important to get enough space and fiscally important not to get too much. What if an enterprise could itemize its requirements and put out to bid the option of getting a product tailored to fit the business need, at a competitive price, including data services provided by a known player, and reasonable prices for expansion and upgrades? If your enterprise has managed to avoid implementing a SAN, and doesn't want to outsource, does this sound like what you are looking for?

With its release of *SANmelody* software, DataCore gives a new way to build and to buy what it calls a *Disk Server*. *SANmelody*, derived from the intellectual property of the award-winning *SANsymphony* large scale consolidation product, takes basic disk management functionalities and layers on advanced *data service* options of mirroring, snapshot, auto-provisioning, and asynchronous IP replication. The software runs on any Intel-type architecture. Any plain disk drives may be used.

For the server-centric enterprise, a build-to-suit *Disk Server*, bought through a value-add reseller, or configured from *SANmelody* software purchased directly from DataCore's web site, is a way to get what you need - all you need, and exactly what you need – at a price you can afford. For more details, read on.

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Disk Server, Defined

SANmelody is a tailor-to-fit product, targeting the specific needs of one or more application servers (think *Windows- or Linux-based*, for the moment) running a single application (like database or email). At the simplest level, a *Powered by DataCore* Disk Server is a *Windows XP, Windows Server 2003* or *Windows 2000* server¹ with internal storage that, with the addition of *SANmelody* software, is singularly purposed to serve disk space to other hosts. At the next level, it is a higher capacity server with a bunch of externally-attached disk drives in separate enclosures. The “server” could even be a basic PC, if the Disk Server is only going to be used as a mirror target or as an online archive of inactive data. In a still more ambitious form, the Disk Server might be configured from a larger multi-processor server to enhance its I/O capabilities and handle multiple chores.²

The processors can be Intel or AMD. DataCore uses the Windows operating system to underpin *SANmelody*, particularly the *Microsoft Management Console (MMC)*, as the base onto which its device management console sits. Disk Servers serve storage capacity to Windows Linux, Unix, Netware, and Mac/OS servers. The additional capacity accessed over the LAN or SAN just looks like another set of internal disk drives to those hosts. Unlike a NAS device, it presents logical disks not folders. Databases and mail applications in particular, prefer to take control of disk rather than deal with intermediate file systems found in NAS appliances.

Memory in the Disk Server gives it the caching capability of a high-end disk array, without the high price. You also have far more configuration and supplier choices in Intel-architecture servers and PCs than in conventional storage subsystems.

¹ Consult DataCore’s website for minimum CPU speed, memory and hard disk space.

² *SANmelody* uses one or more processors depending on pricing tiers. The other processor(s) could be used for other applications.

The disk drives can be any brand and size using any of the popular disk interfaces available for Windows PCs, including EIDE/ATA, parallel or serial SCSI, SATA, FC, etc. However, Disk Servers are not supported in front of external intelligent RAID arrays since Disk Servers are meant to take their place.

SANmelody includes a full I/O stack with optional Advanced Services (see box above). For example, with the optional auto-provisioning feature, an application sees one or more large logical disks (as big as 2 Terabytes), but *SANmelody* really only allocates the needed physical capacity on writes. There are alerts to warn when the actual physical space is running low. When more disks are added to the Disk Server, *SANmelody* adds it to the free pool. Applications are not aware of any change in the underlying storage resource.

For different uses and enterprise budgets, there are choices of software components and capacity tiers. If, over time, you want more functionality, you can upgrade to a higher-tier license by paying the price difference from your original purchase.

While many entry-level and SOHO users may forego support altogether, DataCore offers an online knowledge base, pay-per-incident escalation during business hours, as well as a comprehensive 24x7x365 e-mail and phone support plan. Resellers and OEMs may add more services on top of the DataCore program.

The Target Market

There are many enterprises and small businesses that use a server’s internal storage, or a large direct-attached array, for block storage. They may have added NAS to their LANs to handle file storage demands, but they have not implemented a SAN. Servers with direct-attach storage eventually come to a point where there are no free slot to add more storage. Scaling is often done by adding another server (with more direct attached storage) – but this requires another application license as well.

SANmelody Disk Server Configurations			SANmelody Categories			
			A	B	C	D
Software Features	Advanced Data Protection Features	Snapshot	n/a	Option	Option	Option
		Auto Failover	n/a	n/a	Option	Option
		Auto Provisioning	n/a	n/a	n/a	Option
		Asynchronous IP Replication	n/a	n/a	n/a	Option
	Capacity	Disk Drives (max)*	8	16	32	120
Hardware Parameters	Workload	Front-end Host Ports (max)	2	4	8	16
		Server CPUs (max)	1	1	2	4
	Network Connection	Ethernet / iSCSI LAN	Included	Included	Included	Included
		High-bandwidth Fibre Channel SAN		Option	Included	Included
Pricing		Base price	\$1,178	\$1,728	\$4,714	\$7,857
<i>Source: DataCore Software</i>		Each option	-	\$864	\$2,357	\$3,928

When the problem is a growth in data, but plenty of CPU cycles remain for application processing, buying another dedicated application machine is a waste.

DataCore SANmelody Disk Server, in providing expansion disk capacity for DAS environments, is a way to inexpensively add storage capacity to environments where storage is not pooled.

It creates LAN-based aggregation of block storage that can be shared, in a way that does not involve a SAN and does not require the skills, or pricier infrastructure of Fibre Channel.

SANmelody also caters to those interested in more sophisticated accessories, like snapshots, auto failover, auto provisioning and remote replication, without the pain of re-architecting or the tall price points of doing it the high-end way.

Delivery Options

OEMs and selected resellers have had early access to SANmelody. DataCore’s Web Store direct-sales launch coincides with the public launch of SANmelody. You

can download from their site, or go through a distributor, systems integrator or reseller. How you buy depends on what you want.

Candidates for the *Tier A* entry-level functionality may well buy direct from the Web Store using a major credit card. Tier A targets the frugal and the server-centric. The base price of \$1,178, plus the price of the server and the disk drives will be attractive to many do-it-yourself shops.

Tier B adds allows more capacity and more front-end connectivity. It also introduces optional snapshots, which take a quick copy of stored data at a point in time. Snapshots allow that environment to be recreated should the file system or application become corrupted. Tier B also gives the option of using Fibre Channel host connections for those warming up to SANs.

Candidates for *Tier C* and *D* will be buying a package tailored to their needs, probably through a VAR or OEM. These higher tiers include Fibre Channel and /or Ethernet iSCSI connectivity in the base package, with several advanced options.

When a *Powered by DataCore Disk Server* is bought indirectly from a vendor,

distributor, systems integrator, or reseller, these partners can customize and integrate other devices and software capabilities, if desired, and can offer additional services.

How this Approach Changes the Economics of the Deal

Buying storage is a pain for the frugal, medium-sized enterprise. Lower priced, *white box* storage comes with only primitive data services, which leads to a lot of time and money being spent on managing data replication, and other data protection tasks on each application server. A medium-sized enterprise trying to buy high-end, intelligent storage arrays, forces decision makers into a Russian roulette of choosing where to put their inadequate funds, or choosing to forgo functionality. This is not entirely a matter of vendor greed. Some of it can be blamed on the aggressive buyer's market for high-end technology, combined with the aggregated need for profitability of selling through partners. The combination breeds a situation uncongenial to both buyer and seller.

What's in it for the Enterprise

The breadth and flexibility of DataCore's Disk Server approach increases the choices open to the enterprise. While the lower pricing tiers are targeted to the smaller server-centric firms, distributed branch offices may use SANmelody to handle local data services that can be managed through the standard Windows console from a remote data center.

What's in it for the Distribution Channel

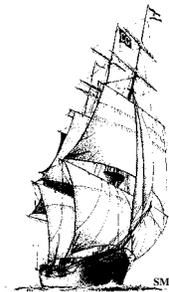
By gating the functionality and increasing the margins on the software and by allowing a wide range of hardware options, *Powered by DataCore Disk Servers* give the distribution channel a different way to target frugality and extravagance to where they are most needed. They can source creatively, and use whatever server is most congenial to their situation or the client. This becomes a sweet deal for the channel – and for the customers of that channel who get more choices, a better fit for their needs.

Since this is a new way of putting the pieces together, Data Core is choosing as SANmelody partners those with enough interest and volume to drive the evolution of this new product category and delivery model. Two-tier distribution (through regional distributors to local resellers) will be supported as well.

Conclusion

DataCore's introduction of SANmelody brings a sense of spring to the storage marketplace. When buoyant ice melts into very dense, very cold water, it sinks, remixing all the water in lakes and ponds, bringing up nutrients from the bottom and creating new opportunities for life to flourish. **SANmelody is a similarly refreshing in what is possible to sell, and thus, what is possible to buy.**

SANmelody software is a new kind of building block. This building block is not limited to a particular architecture, and can be configured to fit the situation, the function and the budget. **As with good tailoring, this build-to-suit approach can do a lot even for the enterprise whose needs are not abnormal – but are very specific.**



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