



How well has DataCore delivered Software-Defined Storage to your organization?



Increasing Uptime by Reducing Storage-related Downtime



Reducing Storage Costs



Reducing Time Spent on Routine Storage Tasks



Increasing Performance



Increasing Capacity Utilization



Bellarmino College Preparatory

"Having the ability to scale and work across multiple nodes campus-wide and to be able to fail over as needed for upgrades/maintenance/expansion – even during regular business hours – is a real luxury. DataCore SANsymphony-V hasn't been down since we installed it."

- Chris Carey, IT Director at Bellarmine College Preparatory.

Bellarmino College Preparatory, an all-male, private secondary school located in San Jose, California, has reaped significant benefits from software-defined storage (SDS) and counts itself as a very satisfied DataCore customer. The director of information technology at Bellarmine gives DataCore a "5" or "Excellent" rating (on a scale of 1-5) in response to the question "How well has DataCore delivered Software-Defined Storage to your organization?"

The IT Challenge: Shared Storage That Is Flexible, Scalable, Stretchable and Cost-effective

Before DataCore was deployed at Bellarmine College Preparatory, the school did not have a storage area network (SAN). However, as its data grew, the need for shared storage along with higher performance, availability and centralized management became readily apparent.

Several years ago, Bellarmine received a generous donation in the form of a high-end, traditional SAN, which it used as a CIFS file server. After that donated hardware and annual maintenance expired, the school purchased a number of individual iSCSI storage rack systems (with 12-15 drives each) and attached them directly to Windows Server blades. As Bellarmine began to approach server virtualization via VMware, the IT team knew they would need to cluster these VMs and provide a fast and reliable shared storage infrastructure to meet the needs of their server virtualization initiative.

NOTE: The customer provided these rankings "at will" – using a scale of 1-5 to rank DataCore Software in key business and technology areas. Guide to rankings: 1 = Poor; 2 = Fair; 3 = Good; 4 = Very Good; 5 = Excellent.

Deployment "At-a-Glance"

All IT systems that support Bellarmine College Preparatory run on the DataCore-powered, virtualized infrastructure. Key applications and other IT assets depending on DataCore include:

- File servers
- Microsoft SQL databases
- Microsoft Exchange
- The school's web farm runs on the virtualized infrastructure
- Data analytics called QlikView
- Virtualized storage supporting the school's Video Lab
- VBrick video streaming
- Blackbaud's The Raiser's Edge and The Financial Edge
- And more...



"It was then that we learned about the concept of storage virtualization," said Chris Carey, IT Director, Bellarmine College Preparatory. "At that time, it was recommended that we look into FalconStor NSS and other appliance-type products to attach our existing iSCSI-based storage and so we started down that path. But they didn't fully meet our needs, and adding another appliance product wasn't our primary focus. The other solutions started out pretty open but eventually became very specific as to the hardware we needed to run on. At that point, we looked for more options and found DataCore."

Meeting the Challenge at Bellarmine College Preparatory: Adding Campus-wide Redundancy and Reducing Storage Costs

Carey likes the fact that DataCore SANsymphony-V is fully interoperable with Windows –meaning it is as open as Windows is and lets IT attach any type of disk to the solution. "As a private school with limited funds – and one that relies on donations from a variety of vendors as families join our community – we need the type of flexibility DataCore offers," he noted. Carey added, "DataCore SANsymphony-V is also a proven technology, and a leading product in its category, which was important to us."

At Bellarmine, Carey built a cost-effective "white box" storage infrastructure using SuperMicro-based servers with LSI SAS/SATA controllers, and off-the-shelf hard drives of different brands/makes/models that met the school's needs.

"DataCore architecture allows us to create redundancy within our 25-acre campus by splitting our SAN, putting one node and its storage in our primary data center and the other node and its storage in our secondary data center," commented Carey. "We've been up and running with DataCore for three years, and our DataCore-powered SAN hasn't been down since we installed it."

In addition, the school realizes cost-containment because now it just purchases disks as it needs them – and the longer it waits, the better hardware it gets for the dollar. Productivity-wise, users benefit from having the “hottest” data on the fastest disks.

According to Carey, Bellarmine never thought of purchasing a traditional SAN. If the school had done so, he estimates that he would have saved 75% over the lifetime of the physical SAN by going with DataCore’s software-driven architecture instead. “An organization like ours could never justify the cost of a traditional SAN, so DataCore and storage virtualization allowed us to have a modern SAN and virtual infrastructure – period,” he stated.

The DataCore Difference: Reducing Time Spent on Storage-Related Tasks, Maximizing Capacity Utilization, and Delivering Better Performance

DataCore enables Bellarmine to use thin provisioning, leverage auto-tiering, and benefit from a campus-wide “stretch” configuration – all with off-the-shelf, vendor-neutral hardware. This allows the school to provision at full size, add storage as it reaches thresholds, better utilize its solid states disk (SSD) investments, and reduce risk through redundancy.

DataCore’s auto-tiering feature stands out to the IT team as a real enabler and a huge time saver. According to Carey, “I couldn’t spend more time managing my SAN with all my other duties, so this function enables me to have performance without requiring a huge investment in time-consuming maintenance time.”

The school reports that auto-tiering along with thin-provisioning easily delivers 4x greater capacity utilization. Asked how DataCore has enabled him to “maximize capacity utilization,” Carey explained that “without auto-tiering and thin-provisioning, I wouldn’t be able to leverage my upper tiers as much and I’d have to have many more spindles to sustain the IOPS we need, which would cost me more for licensing, more for disks, and use more power.”

On average, DataCore customers report up to a 10x increase in performance after deploying SANsymphony-V. While the IT team at Bellarmine cannot pinpoint its own specific performance gains, Carey noted that “it is significant.” What is even more notable to Carey was that Microsoft SQL and Exchange were not slower after they were virtualized than they were running on physical hardware. “For these applications, DataCore mitigated any performance issues brought about by virtualization – and we never saw any performance drop-off with these mission-critical applications whatsoever.”

Moreover, he emphasized, “Our systems aren’t slow, our users are happy, and I’m not spending a fortune or living my life in my SAN to accomplish this. I’m also confident that if and/or when we decide to adopt desktop virtualization, the RAM cache DataCore uses will make it possible without any forklift upgrades.”

Virtualized IT environment “snapshot”

- DataCore Managed Capacity: 80TB (40 per node)
- Number of Users: 200 Faculty/Staff; 1,650 Students; 3,500 Parents
- Number of Virtual Servers + Hosts: 80 servers; 4 hosts
- Primary Server Vendor: SuperMicro
- Storage Vendor: All “homegrown”
- Server Virtualization Platform: VMware
- Software-Defined Storage Platform: DataCore SANsymphony-V

SUMMARY

With DataCore, the “top three” benefits received by Bellarmine College Preparatory include the following:

Reducing Storage Costs

In particular, the school has been able to avoid costly hardware lock-in and has been able to find more attractive alternatives from competing suppliers.

Reducing Time Spent on Storage-related Tasks

The school is now able to automate frequent tasks ranging from provisioning to data protection. Moreover, the IT team has gained visibility to the overall health and behavior of storage infrastructure from a central console.

Increasing Capacity Utilization

IT can now pool and thin-provision capacity from diverse assets and the school can defer or avoid additional purchases by getting the fullest use of equipment already in place.

Software-Defined Storage with DataCore – Enabling Bellarmine to Define Its Storage Their Way

Carey stresses that having the storage logic (the “intelligence”) separated from the underlying hardware is the real value that software-defined storage (SDS) brings to Bellarmine’s IT environment because it gives the IT team much more flexibility to leverage storage hardware as it advances and becomes more cost-effective.

“With DataCore, paying for the storage logic once and then using simpler storage building blocks is a very efficient and cost-effective mechanism,” stated Carey. “The efficiency and cost-effectiveness of software-defined storage is a must for a small-to-medium-sized organization like Bellarmine, where we need to stick to our primary mission and competency: **focusing on teachers and students – the core components of any educational institution.**”

About Bellarmine College Preparatory

Bellarmino College Preparatory, a Jesuit secondary school, was founded in 1851. Located in San Jose, CA, Bellarmine is a community committed to a comprehensive education that results in a lifelong search for truth. The curricular program, through its single college preparatory track and extensive co-curricular program, is designed to develop an openness to growth, experiences in leadership, the pursuit of intellectual activity, and the integration of spirituality in all aspects of the student’s life. Learn more at: www.bcp.org



About DataCore Software

DataCore is a leader in software-defined storage. The company’s storage virtualization software empowers organizations to seamlessly manage and scale their data storage architectures, delivering massive performance gains at a fraction of the cost of solutions offered by legacy storage hardware vendors. Backed by 10,000 customer sites around the world, DataCore’s adaptive and self-learning and healing technology takes the pain out of manual processes and helps deliver on the promise of the new software-defined data center through its hardware agnostic architecture. Learn more at: www.datacore.com

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