



Customer Snapshot

The virtual environment at Saginaw ISD

Saginaw ISD has deployed seven (7) VMware ESX boxes in the VMware farm – all running on HP servers. These hosts service 35-40 VMs, which span everything from a utility machine running Windows XP – to five SQL servers. For replication purposes, the mirrored site has three ESX boxes that also make up the VMware cloud between the two sites. DataCore is at the heart of the virtualized infrastructure, powering the VMware cloud in Saginaw ISD's virtual, private data center.

Storage Virtualization at Saginaw Intermediate School District

Saginaw Intermediate School District has built a flexible, virtualized cloud infrastructure utilizing DataCore Software and VMware. The addition of DataCore storage virtualization was key to the transformation of Xiotech SAN appliances into cloud storage for the district.

Challenge: Replacing a Legacy SAN & Embarking on the Path to Virtualization

Saginaw Intermediate School District (ISD) in Michigan was a legacy Xiotech customer, with a five-year-old Xiotech Magnitude Storage Area Network (SAN). Looking to expand its storage capacity and IT services county-wide, Saginaw ISD submitted a RFP—potentially looking for a Xiotech upgrade. However, it received multiple responses from vendors offering hardware SAN solutions, as well as those offering storage virtualization appliances.

Saginaw ISD saw an opportunity to embrace storage virtualization through DataCore Software, while building on Xiotech's appliances and high-performance disks, which are part of their back-end storage solution.

Because the existing Xiotech SAN had become one that was unsupported by the vendor, and because Saginaw ISD was facing both server sprawl (the Xiotech SAN had 14 servers attached to it) and capacity constraints, the path of virtualization made sense to both partner and customer, alike.

"At this point we are currently serving 30-40% of the county by way of staff and students, and that number continues to grow," explains Jeff Johnson, Director of Technical Services, Saginaw Intermediate School District. "Recently, we had a meeting with another school district, and, within one hour of talking about server costs and replacement costs, the district made the bold decision to move everything out of their data center this summer and into ours. They see that costs are just so much less when we can consolidate and put all the servers in our VMware, DataCore and Xiotech environment for them."

For more information on storage virtualization, please visit:
www.datacore.com

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Solution: A Centralized Data Center and Cloud-based Hosting Service Built on DataCore, VMware & Xiotech

The resulting implementation is one that incorporates DataCore for storage virtualization, VMware for server virtualization, and Xiotech as the hardware platform providing the actual storage. DataCore's SANmelody storage virtualization software powers two SANs that comprise DataCore software and Xiotech servers at two separate data centers, five miles apart, which are configured to mirror to each other. The data pool consists of 10 TBs on each end of the remote configuration. "Our goal was to virtualize everything and have that supported by storage," states Jeff Johnson, Director of Technical Services, Saginaw Intermediate School District.

Saginaw ISD now hosts a VMware-DataCore-based cloud for servers and storage, thereby serving as both a centralized data center and hosting service for the majority of school districts in the county. The solution at Saginaw ISD encompasses local high-availability and fault-tolerance, as well as offsite disaster recovery (DR) capabilities. In terms of delivering high-availability, Saginaw ISD serves as the central hub for most of the school districts in Saginaw County, and Saginaw Township Community Schools serves as a "sister site" for remote replication – ensuring redundancy and uptime.

Thirteen local school districts in the county currently rely on Saginaw ISD for Internet services and other technical services needs—for instance, maintaining back-ups for other school districts on Saginaw ISD's system, as well as desktop imaging and housing utility servers. Moreover, five of these districts now rely on Saginaw ISD for all of their tech-services needs – including their own, Saginaw ISD is the "Tech Dept" for six data centers. In addition to serving as the centralized data center for five districts, whereby their data assets are now being run out of Saginaw ISD's data center as part of its VMware cloud, Saginaw also hosts the servers of three additional districts that are still providing their own technical services, but are not hosting their own servers.

Because the school districts are connected via fiber, Saginaw ISD can provide storage to all of the schools, simply by presenting storage domain servers to the fiber connections. Adds Johnson, "The bottom-line is that we do not have to deploy multiple copies of SANs at each individual school. Instead, our virtualized infrastructure serves as the central hub and we provide the IT services other district schools need."

Meeting Strategic Objectives with DataCore Software

Johnson and his team were intrigued by DataCore's storage virtualization software, which allows for the management of different types of storage and – because DataCore is device-independent – the swapping of one platform for another. Ultimately, they felt more comfortable having a component-based system where storage could be provided from any vendor. "We were also really won over by the fact that DataCore is an affordable solution for achieving high availability," Johnson adds.

Saginaw ISD's strategic objectives included attaining more storage capacity and achieving uptime through a high-availability environment – objectives that would allow them to offer more services to more schools and deliver genuine cost-savings. Case in point: for one school district, seven Windows servers run out of Saginaw ISD's data center and their district no longer has any servers – not one. An unplanned, but realized, benefit came from DataCore's pioneering thin-provisioning technology, which is part and parcel of DataCore storage virtualization software.

Johnson observes that Saginaw ISD's transition to a VMware environment with DataCore's virtualizing storage on a Xiotech Emprise 5000 platform has resulted in an IT infrastructure with an eight times (8x) increase in performance. Applications that were taking two minutes to run are now firing up in under a second. While DataCore's caching abilities certainly add to performance, Johnson also feels that the new SATA disk drives have boosted performance as well.

2,000 school employees and 10,000 students are now benefiting from the virtualized infrastructure – without even knowing it.