

Case Studies | Education

Business Solutions Powered by DataCore™

Rocklin Unified School District, a California school district, sets the pace in the Education Sector for Its Forward-looking Approach to Data Management through Virtual Infrastructure, for speed.



The Challenge

Rocklin's "need" was to have a SAN that would make it easy to provision, migrate and move virtual machines, while providing high availability and disaster recovery functionality to better protect their data assets.

"This all started when we began implementing VMware in earnest using ESX and Infrastructure 3," said Glenn Baker, Systems Engineer, Rocklin Unified School District. "We knew in order to fully support our consolidation efforts and to support the new capabilities like VMotion that we needed to add a new level of storage flexibility and data protection. We had to put in place a virtual storage network that had the agility to keep up, while also providing the needed fault tolerant failover protection to safeguard our storage and maximize overall system uptime. Now, we have rolled out a new VMware and Citrix 4.5 infrastructure in support of our applications. And DataCore's SANmelody is the underlying foundation for all of it."

Rocklin's Systems Engineer explained that his enterprise could not go out and implement a typical storage area network like HP or EMC due to the high costs involved – especially for auto recovery storage systems needed to support VMware environments. "Even if we could have afforded these products, we did not like what we were seeing in terms of being tied to specific hardware. It appeared that a lot of the hardware arrays and the disk technologies would soon become dated as new technologies at new price points hit the marketplace."

The Solution

With DataCore, we gained the flexibility and maneuverability needed to let us keep up with technology changes and storage growth," stated Baker. When looking for a SAN solution at the right price and running on the right hardware for their needs, Rocklin benefited from learning about SANmelody through a DataCore authorized partner, solutions provider AccessFlow, which played a key role in orchestrating the match-making of Rocklin's needs with DataCore's solution. "SANmelody has worked really well for us so far," added Baker. "It is a great solution for the money. Not only do we have redundancy with the SAN, utilizing high-speed synchronous mirroring across two different nodes, but we have the long distance replication or AIM [asynchronous mirroring] capability in place as well. To implement a solution like this from one of the big storage hardware guys would be big money compared to DataCore's economical solution."

A Poster Child for Total Enterprise Virtualization – Citrix, VMware and DataCore

The existing IT infrastructure at Rocklin Unified School District includes a Citrix server farm. In addition, Baker and his team are running 35+ physical servers and the goal was to virtualize those. Now with VMware in place and a DataCore virtual SAN to support that deployment, Rocklin has found more and more areas to virtualize. "Except for certain special situations, "I do not see any reason at this point to load anything on our hardware apart from VMware ESX," explained Baker. "The standard going forward should be to go with virtual machines and virtual storage. If there is an exception for putting Linux or Windows or dedicated storage on a physical machine, we really need to have them justify why."

Rocklin Unified School District supports 10,000 students and has roughly 1,200 staff. It serves 15 different schools, a district office and a maintenance/transportation department. Its "customers" are the administrative staff, teachers and of course students. Rocklin is a very progressive district. With all the new building and expansion in the district it serves, the school district is able financially to be able to implement new technologies. For example, all of its new sites are being rolled out with voice over IP (VoIP). A lot of other school districts might covet these resources as well as the vision of Rocklin USD. "There is a lot that we do here that many other school districts don't," commented Steve Bradley, network administrator, Rocklin Unified School District. "We have a very pro-technology

superintendent, who is very much behind these projects. And these technology investments are supported from the top.”

For the IT team at Rocklin USD, the true benefit offered by a virtual infrastructure, powered by SANmelody, is the ease with which they can roll out new servers and both provision and support their storage needs in a timely fashion. “It is just awesome,” said Baker. “We are rolling out a new library system, which required new servers for the migration. I was able to get this done in an hour. Through VMware, supported by SANmelody, it is amazingly easy to roll out new systems.”

The Environment

Rocklin has two nodes in the central office that are fully redundant, each running SANmelody in a fault tolerant set up. SANmelody is currently used to deliver high-availability and for managing and automatically thin provisioning over 3 terabytes of virtual capacity over the Fibre Channel network. In the future, Rocklin will leverage a third node at a remote site for disaster recovery (DR). Everything within the IT environment is centralized from the central office, connected via a wide area network (WAN) links to other sites. Apart from a few specific servers at two of the district's high schools, all servers are centrally located and managed at the central office.

Overriding Benefits – More Capacity, Consolidation of Storage, Flexibility

“SANmelody consolidates and manages my storage. And by doing so, we use less storage,” concluded Baker. “Beyond providing me consolidation and capacity, SANmelody currently supports the whole VMware infrastructure at Rocklin USD and it is working very well. One of the biggest things I have seen so far is the flexible way that I can manage my environment. I can look at all my servers at-a-glance and see whether we are having problems with one, or whether any are over-taxed. Again, with DataCore thin provisioning and optimizing the storage utilization in support of our VMware systems, I get excellent utilization of servers and storage and I see no reason to add more physical machines from here on out. Going virtual is good.”

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