

Tegile hybrid storage arrays make the grade at Colorado School district



Tegile comes to the rescue after VDI implementation with HP SAN crashes on first day of school



Challenges

- Virtual Desktops taking 18 minutes to boot in classroom environment
- Incumbent vendor could not deploy a fix in less than 30 days

Solutions

- Tegile Intelliflash Hybrid Arrays

Results

- Boot times reduced from 18 minutes to 14 seconds
- Modernization projects accelerated due to lowered costs
- 90% data reduction rates

School District 27J provides educational services to approximately 16,000 students residing in the City of Brighton, Colorado and portions of the cities of Aurora, Commerce City and Thornton, the City and County of Broomfield, and unincorporated areas of Adams and Weld Counties. The 1,600 staff and educators of School District 27J work to ensure that all students have the knowledge, skills and attitudes needed for present and future competence and success. As part of this commitment, the district sought to create an online computing environment that leveraged a virtual desktop infrastructure. This deployment would ensure that teachers have access to their district resources at all times, allowing them to fully support students both inside and outside the classroom.

The Challenge: Quick Replacement Needed After Hardware Failure

The district launched its VDI environment with a 100-desktop pilot program with the expectation that it would later scale to 800 desktops to complete the first of a three-phase rollout. Having had experience with a virtual SAN server environment before, it designed and implemented an architecture featuring an HP P6300 Enterprise Virtual Array. As the system went live on the first day of the school year, the resulting bootstorm from teachers logging in crashed the backend of the infrastructure. A VMware consultant who was onsite for the launch did some whiteboard calculations that revealed that the HP SAN was undersized and basically was not going to work.

"We had all these teachers who needed to do their jobs and we were basically dying," said Jeremy Heide, CIO of School District 27J.

Heide and his staff began looking at other storage options that could quickly overcome the hardware failure they had experienced. One option was to try for more IOPS by inserting a tray of solid-state drives into the EVA but that was going to take HP 30 days to deliver and the district needed help sooner than later. Heide also looked at products from Dell and Nexsan before taking a 'leap of faith' and trusting a solution from Tegile Systems to overcome the issues they were facing.

"Tegile came out and looked at what we had, assessed our needs in the timeframe we had and implemented a solution in the middle of an outage," said Heide. "They worked with the VMware engineer that was helping us to design a storage system that would address our unique challenges and was able to deliver the hybrid array within a week of us placing the order."

Heide said that it was difficult at first to comprehend how Tegile was going to implement its storage architecture because it was basically a night-and-day fundamental difference over the traditional approach. While understanding the theory beyond Tegile's system but never having seen it in action, he was initially apprehensive about adopting something new when they were already bleeding from a traditional solution that didn't live up to the commitment. But after being told that they needed to switch their way of thinking and believe that the optimization provided by the Tegile units would fit their needs, the district staff was rewarded for their trust in the new approach.

"It's all magic to me how all that works," said Heide.

The Solution: Tegile's Hybrid Arrays Take New, Improved Approach to VDI Hosting

Tegile's IntelliFlash is an advanced hybrid storage array that combines high-performance DRAM and Flash SSD with less-expensive hard disk and a comprehensive set of data management and protection features to deliver both speed and capacity at an affordable price.

Tegile's unique IntelliFlash technology accelerates storage performance and utilizes SSD very efficiently. Rather than storing data and metadata together, with metadata being interspersed amongst data on the disk, IntelliFlash organizes and stores metadata on high-speed devices with optimized retrieval paths. This accelerates

every storage function within the system, raising the performance of near-line SAS hard disk drives beyond the level of extremely expensive high-RPM SAS or Fibre Channel drives.

Tegile uses DRAM as an extremely fast Level-1 read cache and uses Flash SSDs as a second level of non-volatile read and write cache. Unlike systems that rely entirely on Flash for data storage (with an inherent danger of data loss), Tegile arrays always protect user data by storing it permanently on spinning disks, while using faster Flash and even faster DRAM as high-speed caches.

Tegile hybrid storage arrays are designed to make the management of VDI easier, faster, more reliable, more scalable and less expensive. Whether used in conjunction with VMware View, Microsoft Terminal Services, Citrix Xen or other solutions, Tegile arrays allow organizations like School District 27J to centralize operations, manage more machines without sacrificing capacity, mitigate the disruption of boot storms, protect data at a vastly reduced cost compared to other arrays, eliminate wear leveling problems and data integrity issues and deliver seven times more IOPS with considerably lower latency.

The Result: Improved Performance Leads to Accelerated Long-term Deployment Roadmap

School District 27J currently is utilizing two Tegile units for two pools to support 866 virtual desktops. Desktop delivery times

that were initially measured in hours on the HP system now only take 14 seconds with Tegile. With its built-in compression and deduplication features, the school district was able to reduce the 25 TB of storage written to their hybrid array by 90% to only 2.5 TB. And the units' performance enhancements have convinced staff that they can successfully accelerate their 3-year plan for offering VDI from teachers to libraries to students.

"With the success that we've found with the Tegile arrays in our environment, we're able to accelerate Year 3 to Year 2 for some of our schools," said Heide. "Working with Tegile to continue to expand our environment means we're able to do that a year early in order to deliver what students need. We took that leap of faith and we're very happy with it."

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