TENNESSEE COUNTY SCHOOL SYSTEM RUNS TRUENAS

TrueNAS All Flash Storage in a Virtualized Database Environment

"We were having trouble with our heavy disk I/O and low latency storage and needed something that could do the job required. TrueNAS has handled the task flawlessly."

- Preston Fisher,
Systems Administrator

THE STORAGE CHALLENGE

A County School System in Tennessee serves the needs of multiple K-12 schools with tens of thousands of students and thousands of staff members, requiring substantial hardware to maintain school district records and databases. Previously, the School System had been using Dell EqualLogic servers for their SAN storage, but they could not handle the load and would get daily timeouts, resulting in their virtual servers going down on a weekly basis. This left important services and information unavailable to students and faculty until IT staff could reboot the servers.

The School System needed a solution that could handle their heavy I/O databases and minimize downtime for system crashes and maintenance. They were looking for solid state storage with low latency and high performance. They looked at solutions from Nimble, EqualLogic and Lenovo. They considered using Nimble Storage, who advertised very good performance numbers, but found those numbers did not apply to their random I/O use cases and would not be what they needed. This left them uncertain as to what they would be getting from that solution, and all 3 vendors' acquisition costs were prohibitive. Having purchased servers from iXsystems in the past, they decided to evaluate TrueNAS as a solution to their problem. In the end, TrueNAS won out because of its ability to provide superior performance with low-latency, solid state storage, all for fewer dollars per gigabyte than the competition.

iX systems™

"What we were looking for is something that had solid state performance. We looked at several vendors, but TrueNAS came with a lower acquisition cost, more storage, and better performance."

- Preston Fisher

LOW LATENCY, HIGH AVAILABILITY DATABASE STORAGE WITH TRUENAS

After evaluating all their options, the County School System decided to replace their EqualLogic servers with the all-flash TrueNAS Z50 TrueFlash High Availability (HA) Storage Appliance for their most performance intensive virtual servers. They also purchased a second, hybrid storage TrueNAS HA solution for additional VMware hosting. The TrueNAS was pre-configured for the school system with 5TB of usable storage in a RAID 10 configuration. Their hybrid storage solution is configured with 40TB of usable storage in a RAID 10 configuration, as well as a high performance L2ARC read cache and a separate, high performance ZFS SLOG for synchronous writes. Both TrueNAS systems are configured with dual port 10 GbE interfaces with Multipath I/O for network availability.

TrueNAS effortlessly runs the school's large databases, including an Oracle database for PowerSchool and a custom database for their library lookup software, Alexandria Librarian, as well as hosting Exchange 2010 and their Aplus database. The hybrid storage HA unit serves mostly Server 2012 and Server 2008 VMs running various applications and services. Together, both TrueNAS systems host and protect more than 100 virtual servers with VMware over iSCSI.

"When we had our Aplus and Alexandria custom databases running on our Dell EqualLogic PS6510 we would get such high disk latency that our WhatsupGold server monitor would become unavailable. Now that we are using TrueNAS, we have not had a single WhatsupGold service interruption due to disk latency."

- Preston Fisher

IMPROVED PERFORMANCE WITH TRUENAS

Since implementing TrueNAS, the School System has had none of the outages they experienced with their EqualLogic solutions. Having High Availability ensures they can do system maintenance with no downtime. Restore times for their PowerSchool database using an Equallogic solution used to take nearly 5 hours. Now, with TrueNAS a restore takes about 1 hour 45 minutes, nearly tripling performance. Backup times for Windows VMs are nearly twice as fast, taking 30-50% less time. The IT staff for CMCSS also saved time on administration compared to their EqualLogic solution.

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"We found turnaround time on support issues to be better than with Dell. The support staff is very knowledgable and they really helped us out on a server side project. They were fantastic."

- Preston Fisher

QUALITY CUSTOMER EXPERIENCE WITH IXSYSTEMS

The sales staff at iXsystems are knowledgeable about the customer's environment, and provided a solution that meets the specific needs of the School System rather than pushing one size fits all configurations. Having the development team for TrueNAS in-house also means that sales and support have more direct lines of communication with the development team than they have found with other storage vendors.

CONCLUSION

Serving the storage needs of tens of thousands of students and staff requires a high performing and reliable solution. When the County School System's EqualLogic storage solution was not living up to their needs, they turned to iXsystems and TrueNAS. The All-Flash TrueNAS storage array with TrueFlash technology handles their heavy workload without missing a beat, and provides additional VM storage at near all-flash performance. TrueNAS not only meets their needs, but greatly improves upon their previous solution's performance at lower acquisition costs.

ABOUT THE COUNTY SCHOOL SYSTEM

The County School System is located in Northern Tennessee and serves a local population of over 147,000. It consists of 39 schools, over 30,000 students and over 4,000 staff members. The School System is rated in the top 2% of School Districts internationally and is one of nine school districts in the nation with ISO 9001:2008 quality certification, which measures efficiency and effectiveness.

ABOUT IXSYSTEMS

By leveraging decades of expertise in hardware design, its contributions to many Open Source software communities, and corporate stewardship of leading Open Source projects (FreeNAS and TrueOS), iXsystems has become an industry leader in building innovative storage solutions and superior enterprise servers for a global marketplace that relies on open technology.

Thousands of companies, universities, and government organizations have come to rely on iXsystems' storage, servers, and consultative approach to doing business. Headquartered in the heart of Silicon Valley since its founding in 1996, the dedication to white-glove customer service, industry-leading support, and transparent technological contributions has never wavered and continues to help lay the foundation for a new era powered by open technology.