

## CASE STUDY: STANDARD CALIBRATIONS, INC (SCI)

### PAINLESS HARDWARE UPGRADES WITH TRUENAS®



#### THE STORAGE CHALLENGE

In 2014 Standard Calibrations, Inc. (SCI) needed to find a storage solution that could serve multiple virtual machines (VMs) for their new virtualization environment. When talking to their usual vendor about these VM requirements, the vendor recommended that SCI use FreeNAS® with their hardware as this was the best solution to the problem. As SCI looked into FreeNAS, they found that iXsystems was the developer of FreeNAS and offered a commercially supported storage solution: TrueNAS. They priced out a TrueNAS storage array and found that, with iXsystems, they would get an enterprise-grade storage array for significantly less than they could get from their usual storage vendor.

SCI found TrueNAS to be more powerful and more economical than the alternative, and the fact that it is derived from FreeNAS, the world's leading Open Source software defined storage operating system, made TrueNAS very appealing to SCI. During the sales process, SCI had many questions about TrueNAS, so they consulted with an iXsystems sales engineer to get their questions answered. The engineer helped them design a storage solution that met their specific needs. Due to the quality of the platform and the consultative process SCI experienced, they decided to go with a TrueNAS storage array.

*“TrueNAS just works. I don't have to mess with it and I don't have to go back and screw around with it because it broke. This saves us a lot of operational overhead.”*

- **Daniel Weiss,**  
*LAN Support*

*“When I had an issue or a question on TrueNAS I was put on the phone with a person very experienced with TrueNAS to answer my oddball and left field questions about highly unlikely use cases for TrueNAS. This was before I had actually bought anything from iXsystems and was still shopping around. It’s hard to find that kind of support up front.”*

**- Daniel Weiss,**  
*LAN Support*

## **PAINLESS UPGRADE TO HIGH AVAILABILITY AND IMPROVED POOL PERFORMANCE WITH FLASH DEVICES**

TrueNAS hardware solutions are designed to scale with minimal operational overhead. SCI’s configuration was designed for lightweight Linux servers and a couple of Windows Server test environments. After providing storage for their virtual machines for almost two years, their use case evolved and their TrueNAS needed greater performance to keep up with that evolution. What they found was that they needed to frequently create and restore SQL data regularly on the virtualized windows servers. To improve performance on these virtual machines, SCI non-disruptively added a write cache (SLOG) device, which improved performance for all their virtual machines. They also moved their windows virtual machines to a flash environment, and non-disruptively added several 500GB SSDs for their Windows virtual machines that ran SQL. Upgrading was a simple matter of inserting the new devices into the TrueNAS and then configuring them in the user interface.

In addition, SCI had purchased a TrueNAS with High Availability (HA) in 2015, nearly eliminating the risk of downtime for their production system. Increasing demands on their TrueNAS made them decide to add the security of High Availability to that system as well. TrueNAS is designed for scalability on multiple fronts, so upgrading to HA after initial deployment only required inserting a second storage controller.



*“Upgrading our TrueNAS to High Availability was just a matter of adding the new storage controller and running a software upgrade. All in all the whole process was really easy and we were back up and running very quickly.”*

**- Daniel Weiss,**  
*LAN Support*

*“Before the TrueNAS cache and SSD upgrade we either had to plan when large queries would be run, or deal with the 30+ second response time on neighboring VMs. Now we can run queries whenever we want with no issue. iXsystems designed TrueNAS to meet growing demands with ease.”*

**- Daniel Weiss,**  
*LAN Support*

## IMPROVED PERFORMANCE AND RELIABILITY WITH HIGH AVAILABILITY IN A VIRTUAL ENVIRONMENT

Since the upgrade, SCI's TrueNAS storage array handles the I/O requirements of their virtual machines without issue. Having a dedicated flash pool for their virtual SQL servers means that large imports and exports no longer impact the performance of their other virtual machines. Their system connects to their network over aggregated, dual 1GbE ports to a Cisco 5000 series switch. SCI also has added 10GbE ports to their TrueNAS as they are planning on upgrading their network infrastructure to 10GbE in the future.

SCI uses NFS to access TrueNAS as backend storage for two permanent servers. TrueNAS also provides general storage for VMs, supports additional test servers that are created as needed, and runs backups managed through vCenter. TrueNAS provides improved stability over SCI's previous solutions of Apple Xserves running off of modified versions of OS X Server. With its fully engineered and supported virtualization capabilities, TrueNAS gives SCI greater peace of mind.

SCI also found that TrueNAS greatly reduces their administration overhead with its intuitive user interface. Previously, SCI had everything stored locally and IT had to go to the host server to perform storage administration. Since everything was stored locally, remote users could not access the data. TrueNAS allows SCI to grant network-wide access to about 80 internal users, improving operational efficiency.



*“There was an occasion where our email server went down. We used the TrueNAS system to pull the data over, then recreate the mail server with minimal performance impact. People didn’t notice any performance impact, even with the Z20 pulling double duty. That couldn’t have been done with any other piece of hardware we have.”*

**- Daniel Weiss,**  
*LAN Support*

*“Support doesn’t have a problem answering in-depth questions, going the extra mile. I like to know how things work, so if something ‘explodes’, I know enough to immediately troubleshoot the problem. Normally support teams just say ‘well it just works, call us if you have a problem’, but iXsystems takes the time to educate me.”*

**- Daniel Weiss,**  
*LAN Support*

## TOP TIER SUPPORT FROM SALES TO POST-DEPLOYMENT

iXsystems’ white-glove support ensures that SCI speaks with a local support engineer who has access to the people who design and build the products. This includes access to knowledgeable sales staff and sales engineers for answering questions. iXsystems provided assistance to SCI from initial deployment to cache, storage, and HA upgrades, ensuring everything went smoothly. The TrueNAS support team works very closely with SCI to support its edge use case applications. With the TrueNAS development team in-house, the iXsystems support team is able to quickly escalate any issues SCI might have as needed, rather than wading through third-party channels for advisement.

## CONCLUSION

iXsystems has designed TrueNAS to work in any environment and to easily adapt to changing and growing needs. This allows for customers like SCI to implement solutions that meet very specific needs without having to worry about costly forklift upgrades and other changes down the road. Whether they need additional capacity, performance, or availability, TrueNAS is designed to grow and change without unnecessary complication or cost. The staff at iXsystems works to provide the knowledge and assistance needed to accommodate these changes and ensure a quality experience in the process.

## ABOUT STANDARD CALIBRATIONS, INC.

Standard Calibrations, Inc. (SCI) is a full service and sales provider of maritime and industrial instrumentation and control systems, serving the Department of Defense as well as Industrial/Commercial Industries. It is a certified small business concern with the state of Virginia's SWaM (Small, Women, & Minority Owned), VDMBE (Virginia Department of Minority Business Enterprise) business program.

SCI has 26-plus years of measurement science technology experience in the field of application design, procurement, installation, calibration (Laboratory & On-Site), repair, outage support, and technical assistance with measurement and control areas of plant automation to support your industrial market. Their core philosophy of "If it controls, indicates, or alarms, we service it" has focused their efforts and guided their decisions as they built lasting relationships with customers, employees, suppliers and equipment manufacturers over the years.



## 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.

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