

## CASE STUDY

# TRUENAS® CONSOLIDATES A&C MOLD'S STORAGE INFRASTRUCTURE WITH VMWARE

St. Charles, IL | [acmold.com](http://acmold.com)  
Manufacturing / Injection Moulding



## Summary

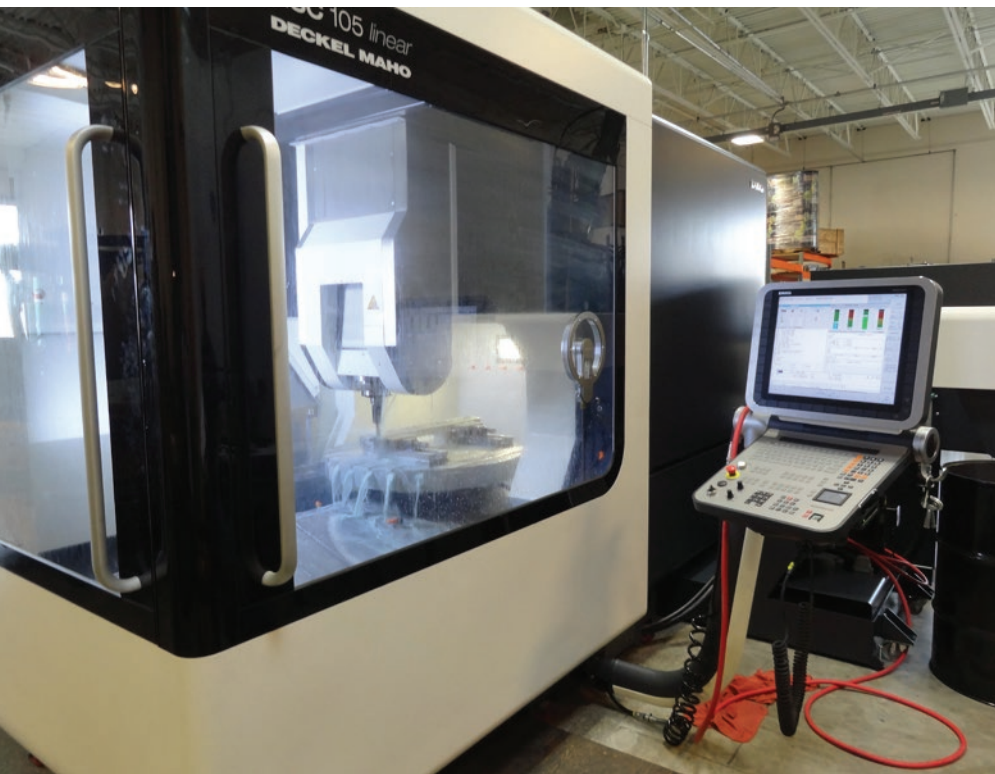
**Challenge:** Lack of Scalability / Legacy Storage

**Solution:** TrueNAS

**Use Case:** Virtualization

## Benefits

- Data Consolidation
- Balanced Redundancy and Performance
- Reduced Spending



“TrueNAS allowed us to virtualize everything we do in our manufacturing operations from just a single storage unit. We are running VMware instances to multiple client systems on the production floor and throughout our entire operation as fast as our network allows. TrueNAS gives us an edge.”

- John Konc, Head of Computing and Information Systems

## THE STORAGE CHALLENGE

A&C Mold was running their production floor equipment off of a combination of Direct Attached Storage (DAS) and task-specific workstations. As their DAS and workstations began to age, A&C Mold began looking for a new long-term storage solution that was capable of working with various types of machining equipment in their facility and as a central storage repository for their employees.

Because total cost of ownership (TCO) was a concern, the solution needed to meet their growing needs, fit their storage budget, and

have the ability to scale seamlessly as their operations continued to grow.

A&C Mold’s Head of Computing and Information Systems, John Konc, knew he needed to find a new storage array that could better meet his company’s growing requirements. He looked into alternative server solutions but had difficulty finding a storage array that fit all of A&C Mold’s needs without breaking the bank. John remembered he had worked with FreeNAS in the past and decided to put it to the test for his company. While FreeNAS had the necessary features for their operations, A&C Mold required a solution with fully

integrated hardware and support to ensure maximum reliability. While testing FreeNAS, John discovered that iXsystems, the company behind FreeNAS®, also developed TrueNAS as an enterprise storage platform.

## CONSOLIDATING A MANUFACTURING ENVIRONMENT WITH VMWARE AND TRUENAS

A&C Mold reached out to iXsystems and worked with the sales team to design a solution that would fit their budget and scale easily with their plans for future growth.

“The difference between talking to iXsystems and Dell was like humans versus robots. The sales team at iXsystems knew what they were talking about, but Dell was just a salesman trying to push product and didn’t hear what I was asking for. iXsystems actually listened and was able to provide a system that fit our needs.

We provide our customers with a wide variety of tools to meet their various needs for custom parts and needed a solution that positioned us for future growth. TrueNAS provides us with the versatility and scalability we need to stay ahead of the competition.”

- John Konc

iXsystems recommended that A&C Mold use a TrueNAS Storage Array with TrueCache™ hybrid technology, which combines RAM with high-speed SSDs and HDDs. TrueNAS provides A&C Mold with near all-flash performance with the storage capacity and price point of HDDs. The sales team took the time to understand their storage needs and recommended a RAID 10 equivalent configuration to provide the right balance of redundancy and performance.

Since moving to TrueNAS, A&C Mold’s data continues to grow rapidly and protecting it is ever more demanding. TrueNAS uses OpenZFS, a self-healing, Open Source file system with automated instantaneous point-in-time snapshots that let A&C Mold protect data locally and remotely with low operational overhead.

TrueNAS snapshots integrate seamlessly with vSphere snapshots and the built-in TrueNAS vCenter plugin makes snapshot management even easier. A&C Mold’s production facility supports 250 network devices, with 50 concurrent office users and 45 floor workers that access data stored on their TrueNAS storage array over NFS.

The TrueNAS storage solution currently holds six server-class VMware instances and 14 desktop instances to support their floor workstations and CNC (Computer Numerical Control) machines, and

also holds thousands of files for their manufacturing floor workers. A&C Mold’s TrueNAS array is configured with a dual-port 10GbE SFP+ network interface to maximize network throughput. Their system connects to a 10GbE, 24-port switch as a backbone for storage and virtual communication, which is then connected to two Cisco 1GbE switches for client access.

## TRUENAS PROVIDES FAST & RELIABLE STORAGE

A&C Mold’s virtualized production environment uses VMware and NFS. This combination is an ideal use case for TrueNAS with TrueCache technology. TrueNAS utilizes the underlying OpenZFS file system’s separate ZFS Intent Log (SLOG), which is placed on a high-performance flash drive. This ensures that virtual machines get maximum performance while guarding against lost data. A&C Mold’s TrueNAS also came configured with a high-performance L2ARC read cache.

The combination of these high-performance TrueCache devices provides A&C Mold with near all-flash performance across their entire network. This allows their workers on the floor to access their file repository at any available workstation. The head unit built into their TrueNAS can hold up to 160TB of raw, spinning disk

“You expect some issues to come up with any solution you buy, but what really matters is the response you get from support. That sets one company apart from another and iXsystems has shown they’re up to the task.”

- John Konc



storage. TrueNAS units can be scaled up to ten petabytes with optional expansion shelves. This is why DCIG, an industry analyst, says that TrueNAS has one of the highest storage densities of any enterprise storage array. TrueNAS also supports link aggregation for maximum performance in enterprise environments. To provide an additional level of data protection and improve availability, A&C Mold does backups of their NFS and VMs via a third party application, Trilead.

TrueNAS allows them to run nightly backups cost-effectively and minimizes the impact of potential hardware outages. A&C Mold plans to improve upon this method by moving to TrueSync™ technology with snapshots and replication, which allows for nearly instantaneous backing up of data without the performance overhead of standard backup methods. The TrueNAS storage array supports a High Availability option, which adds another safeguard against downtime. OpenZFS has additional data integrity checks running at the file system level to guard against data corruption. iXsystems provides A&C Mold with enterprise-grade support for TrueNAS, keeps them running smoothly, and provides extra peace of mind. If A&C Mold has a problem down the road, iXsystems has a specialized team of support technicians waiting to help resolve any issues that may arise.

## CONCLUSION

A&C Mold needed a scalable solution that would give them optimal performance with a reasonable price tag. TrueNAS includes all of the enterprise features needed, including VMware support, thin provisioning, inline compression, snapshots, and replication, with no hidden licensing costs, and comes with award-winning customer support from iXsystems in case A&C Mold needs some help down the road.

## ABOUT A&C MOLD

Established in 1993, A&C Mold has maintained a dedication to customer satisfaction since its outset. Their state of the art facility is located in St. Charles, IL and houses a variety of CNC machining, engineering, horizontal boring, and injection press services. It is one of the few companies in the industry capable of creating mold bases for metal bonded to rubber. You can find a listing of available equipment and product samples at their website: <http://www.acmold.com/>.



## ABOUT IXSYSTEMS

Through decades of expertise in system design and development of Open Source software (FreeNAS, FreeBSD, OpenZFS and TrueOS), iXsystems has become an innovation leader in a global marketplace that relies on Open Source solutions, high availability storage and servers, technology partnerships, and expert support.

Since its founding in 2002, thousands of companies, universities, and government organizations have come to rely on iXsystems' enterprise servers, TrueNAS Unified Storage, and consultative approach to building IT infrastructure and Private Clouds with Open Source economics. Millions of tech-savvy users also download and deploy our Open Source software each year. More information can be found at [www.iXsystems.com](http://www.iXsystems.com).

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