

# Makino Virtualizes Mission-Critical SQL Server and SAP Applications with Tintri VMstore™

VMstore



Makino is a global leader in the manufacture of high-performance machining centers and a provider of turnkey, engineering, and integration services. Makino produces machine tools that let manufacturers make specific parts for a diverse range of products. The aerospace, die/mold, automotive, medical, construction, and mining industries use Makino's machines to produce precision components.

## The Challenges: Virtualization Not Possible with Underperforming Storage Systems

Storage performance issues prevented Makino from virtualizing its business-critical applications. Managing dozens of data stores and LUNs in the existing virtual infrastructure was increasingly cumbersome. IT looked to replace Makino's storage with a solution that would satisfy both the performance needs of its business-critical applications and enable generalist administrators to manage the entire virtual infrastructure, including the storage.

Makino was using Fibre Channel (FC) block-storage systems to support its virtual environment. The company had stopped short of virtualizing its business-critical applications because of concerns about storage performance. Makino relied on physical servers and direct-attached storage for running mission-critical applications.

"We had maxed out performance on our existing storage and we would have had to add much more just to meet our performance requirements for our business-critical applications," said Glenn Hensley, IT Infrastructure Manager at Makino. "Overprovisioning storage was expensive. We looked for storage purpose-built for virtual environments that could also leverage flash for performance."

"Managing our existing storage was another problem area," said Andy Chambers, System Administrator at Makino. "Creating more than forty LUNs and data stores and mapping those to hosts forced us to constantly juggle resources as the applications' needs changed. We have a small IT team, so we wanted to move to a storage system that eliminated the need to create dozens of LUNs and data stores. Ideally, we wanted to manage the VMs directly."

Makino also struggled to troubleshoot storage performance problems with its virtual infrastructure. "Pinpointing problems involved a lot of guesswork, so any new storage solution needed to make it easier to troubleshoot VM performance and be tightly integrated with VMware," said Chambers.

## The Solution: Tintri VMstore

"We had two main criteria for selecting storage for virtualizing our business-critical applications. First, we wanted a high-performance, cost-effective storage system. Second, we wanted storage that was purpose-built for virtual machines and could be managed by an IT generalist," said Hensley. "We wanted to avoid deploying general-purpose storage in our virtual environment. We were introduced to VMstore by our solution provider, Pride Technologies, and we decided to do a PoC."

"We chose the Tintri VMstore system for our virtual environment for its cost-effective performance and management simplicity," said Hensley. "Setting up VMstore could not have been any easier," said Chambers. "Tintri support even helped me with issues I had elsewhere in the infrastructure during the process." Makino's deployment consists of two HP DL385 G7 compute servers, one Tintri VMstore system, and dedicated Intelligent Infrastructure.

## Challenges

- Storage performance issues stalled virtualization plans
- Managing a large number of data stores on existing FC storage was challenging
- Managing and troubleshooting VM-level performance was cumbersome

## Solution

- Tintri VMstore

## Results

- Cost-effective performance for virtualizing mission-critical applications
- Reduced number of data stores in the environment by a factor of four, eliminating administrative burden
- Granular reporting at the VM and virtual disk level for increased visibility and simplified troubleshooting

## The Result: Successful Virtualization of Mission-Critical Applications

With Tintri VMstore, Makino was able to successfully virtualize business-critical applications like SAP and Microsoft SQL Server databases. Makino also realized operational cost savings by increasing its server consolidation ratio. "With one 3U Tintri VMstore system, we've been able to virtualize our business-critical servers such as SAP, SQL Server, and Citrix XenApp servers," said Chambers. "And thanks to VMstore's flash-based architecture, we get more than sufficient performance. We have moved most of our virtual infrastructure onto VMstore and still have plenty of performance available to add more VMs."

Tintri VMstore also helped Makino simplify its infrastructure with simple setup and VM-level management. "VMstore has allowed me to get part of my day back with dramatically simplified storage management. The number of data stores in my environment went from forty to one, and I no longer have to keep moving VMs around to meet performance needs," said Chambers. "Tintri's proactive monitoring of our VMstore combined with excellent technical support gives us great peace of mind in running business-critical applications. VMstore exceeded our expectations on all fronts."

With Tintri VMstore, Makino was able to virtualize its mission-critical applications and provide consistent performance. Because Tintri VMstore is purpose-built for virtualization, Makino is now able to manage performance metrics on a per-VM and per-vDisk basis, and has instant end-to-end visibility in to VM-level latency. "VMstore simplifies monitoring and troubleshooting in our environment, and provides fast and reliable storage purpose-built for VMs at a competitive price. It's easy for our team to use and we get enterprise-class support," said Hensley.

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*Andy Chambers, System Administrator, Makino*

Experience Different! For more information on how Tintri VMstore can turbo-charge your business success through a simple, Intelligent Infrastructure, visit [tintri.com/vmstore](http://tintri.com/vmstore).