



Leading microprocessor manufacturer speeds simulation tests by 5x and reduces storage footprint by 67% with Tintri

Overview

AMD is a semiconductor design innovator leading the next era of vivid digital experiences with its ground-breaking AMD Fusion Accelerated Processing Units (APUs). AMD's graphics and computing technologies power a variety of solutions including PCs, game consoles and servers that drive the Internet and businesses.

The storage deployed to support virtual environments at AMD could not meet performance requirements, and made it difficult to scale for remote sites. AMD wanted to create a pod-based infrastructure that could be replicated at remote sites. It also wanted to leverage a flash-based storage system that would satisfy the performance needs of the integrated circuit-testing databases and reduce the storage footprint in their virtual environment. AMD also wanted visibility into VM performance metrics at the storage layer.

Key Customer Challenges

AMD used traditional EMC iSCSI storage systems in its virtualization environment. As the databases grew, multiple storage arrays were needed to satisfy performance requirements. "Our existing storage did not meet the performance requirements of our growing databases, even with multiple storage systems supporting one instance of an application," said Ross Alaspa, application server architect.

Deploying multiple arrays to support one application instance took a lot of rack space. "The form factor of the storage system was an important consideration because we wanted to deploy compute and storage as a self-contained cluster. We also wanted space-efficient infrastructure we could replicate in other data-center locations to streamline application deployment and reduce costs," said Alaspa.

Management was another critical consideration. "Managing VM infrastructure on existing block-based storage was cumbersome at best," said Alaspa. "Our existing storage forced us to create and manage LUNs. As the databases grew we had to create more LUNs on multiple storage arrays, so we had very little visibility into performance metrics at a VM level," said Alaspa. "This made monitoring and troubleshooting a nightmare."

Tintri Solves Performance Issues

Alaspa came across Tintri when he was looking to refresh storage for the virtual environment. "We eliminated general-purpose storage systems from consideration as we could not find anything that fit our performance and space footprint requirements at the same time," said Alaspa. He was impressed by the performance Tintri VMstore appliance delivered in a small form-factor, and its rich VM-aware functionality, and he wanted to do a proof-of-concept. "We saw a demo of Tintri VMstore and brought in a T540 system for evaluation to prove its mettle in our environment," said Alaspa. "We moved one of our largest Oracle databases—1.5 TB—to the Tintri appliance during the POC."



Industry

High technology

Virtualization environment

- VMware® vSphere™ 4.x
- HP DL385 servers (AMD-based) for vSphere hosts
- Prior to Tintri: EMC CLARiiON with iSCSI

VM profile

- Solaris servers running Oracle 10g R2, internally developed applications for testing integrated circuits, VMware® vCenter server.

Key challenges

- Insufficient performance made it difficult to run large simulation tests successfully.
- Lack of useful metrics for monitoring and troubleshooting the virtual environment.
- Storage for remote locations required significant space, creating challenges at smaller sites.

Tintri solution

Tintri VMstore™ T540 dual-controller 13.5TB storage appliance in a pod-based architecture.

Primary use case

Self-contained units of compute and storage for running critical database applications at both the primary and remote sites.

Business benefits

- Simulation tests run five times faster on Tintri, dramatically reducing completion times.
- Storage space footprint at primary site is reduced by 67 percent.
- Performance and capacity metrics on a per-VM basis allow granular monitoring and troubleshooting, saving time.
- Ability to create pod based architecture with high VM density for remote locations to reduce operational costs.

“We chose the Tintri T540 storage appliance mainly because of the performance it delivered in such a small form-factor,” said Alaspa. “Management simplicity with per-VM monitoring and troubleshooting is icing on the cake.” AMD is planned to deploy storage and compute as a cluster, which consists of two to four HP DL385 compute servers and one Tintri T540 appliance. Two cluster pods are deployed in an active-active configuration.

Business Benefits

“A single Tintri T540 appliance can deliver more performance than multiple iSCSI-based arrays, and meets the performance needs of our largest databases,” said Alaspa. “We still have performance headroom to spare on the appliance and are looking to deploy other VM systems on it as well.” Consolidating multiple workloads on a single storage system reduces both capital and operating expenditures.

Tintri’s intelligent use of flash for performance, per-VM management and troubleshooting, and single datastore per appliance feature allows AMD to consolidate storage in its virtual environment, and eliminate complexity. “With Tintri, can also reduce the storage footprint from nine rack units to three rack units,” said Alaspa. “The single datastore per cluster model and per-VM monitoring and troubleshooting dramatically simplified administration.”

“Consistent performance, simple manageability, and the small footprint of Tintri VMstore appliances allow us to deploy compute and storage together as a cluster in remote locations,” said Alaspa. “We can substantially reduce operating costs by leveraging a consistent architecture in all of our remote sites.”

Summary

With Tintri, AMD can consolidate multiple storage arrays into one, dramatically simplify storage management and meet the performance requirements of its critical database applications. This has allowed AMD to reduce operational costs by creating a flexible pod-based architecture for virtualizing performance-intensive business-critical applications that can be easily replicated across sites.

“Tintri is impressively fast, not just by few percentage points, but by a factor of five over our existing solution,” said Alaspa. “The small footprint of the Tintri appliance allows us to contain the datacenter footprint in remote site deployments.”

“A single Tintri T540 appliance can deliver more performance than multiple iSCSI-based arrays, and meets the performance needs of our 1.5 TB Oracle database. We still have performance headroom to spare on the appliance and are looking to deploy other VM systems on it as well.”

—**Ross Alaspa**, application server architect at AMD



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