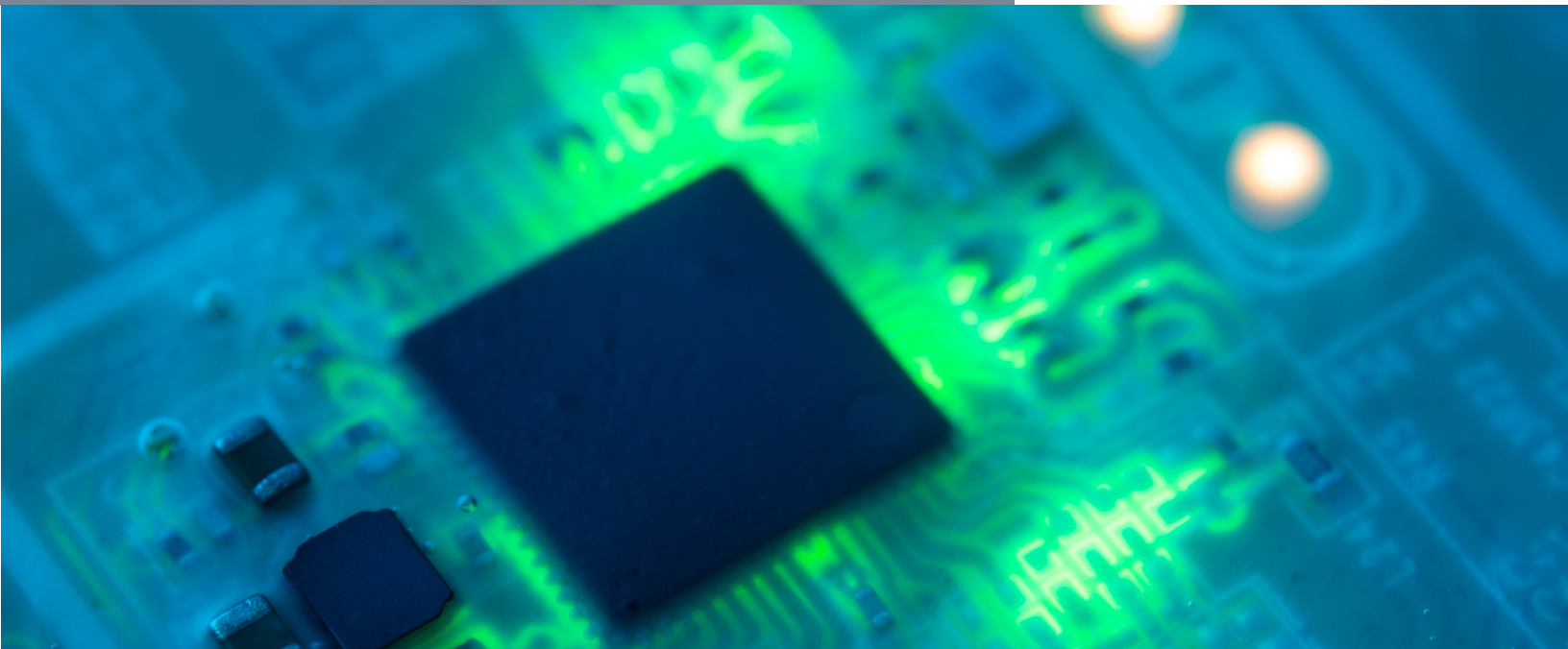


AMD Speeds Simulation Tests by 5x and Reduces Storage Footprint by 67% With Tintri VMstore™



AMD is a semiconductor design innovator leading the next era of vivid digital experiences with its groundbreaking 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 Challenge

Poor Performance and Scalability

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.

AMD had been using standard infrastructure in the form of traditional EMC iSCSI storage systems in its virtualization environment. As the databases grew, multiple storage systems 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."

The Solution

Tintri VMstore T540

Alaspa came across VMstore 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 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 VMstore and brought in a T540 system for evaluation to

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

Ross Alaspa, application server architect at AMD

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

Solution

Tintri VMstore T540

Results

Simulation tests run five times faster on Tintri, dramatically reducing completion times

Storage space footprint at primary site is reduced by 67%

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 reduces operational costs

prove its mettle in our environment," said Alaspa. "We moved one of our largest Oracle databases—1.5TB—to VMstore during the PoC."

The difference between standard infrastructure and Intelligent Infrastructure became apparent immediately. "We chose the VMstore T540 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 VMstore T540. Two cluster pods are deployed in an active-active configuration.

The Results

Simplified Management and Reduced Operating Expense

"A single VMstore T540 can deliver more performance than multiple iSCSI-based systems, 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 VMstore systems on it as well." Consolidating multiple workloads on a single storage system reduces both capital and operating expenditures.

VMstore'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 VMstore, we 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 simplifies administration."

"Consistent performance, simple manageability, and the small footprint of VMstore 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."

With VMstore, AMD can consolidate multiple storage systems 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.

"VMstore is impressively fast, not just by few percentage

points, but by a factor of five over our previous solution,” said Alaspa. “The small footprint of the VMstore system allows us to contain the data center footprint in remote site deployments.”

Experience the Tintri difference! For more information on how Tintri VM-aware systems can turbo-charge your business success through simple, intelligent data management, visit tintri.com.



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