



CASE STUDY

Top Dialysis Services Company Taps Tintri IntelliFlash™ for Citrix® Xen® Virtualization



IntelliFlash



Renal Ventures Management, LLC

Renal Ventures Management, LLC is a leading provider of dialysis services, providing management expertise and patient-focused care operations to a network of clinic partners around the country.

The Challenge: Incumbent Storage is Inadequate for Virtualized Server Environment

As part of a recent server virtualization initiative to migrate its HP servers to Citrix XenServer and XenApp, Renal Ventures discovered that its incumbent storage was inadequate for the higher IOPS demands of a virtualized server environment.

The Solution: Tintri IntelliFlash

The company considered upgrading to solid-state storage as well as alternatives from other vendors. But on the recommendation of Citrix, the company evaluation also included Tintri's IntelliFlash. In the evaluation against other storage vendors, Casterlin said that there were three main factors that tipped the scales in favor of IntelliFlash: performance, flexibility, and the reputation of the company. Casterlin said Tintri's reputation was crucial in their purchase decision, particularly when competing against established vendors.

Renal Ventures installed an IntelliFlash system configured as Network Attached Storage running the NFS protocol. Renal Ventures currently has virtual machines running under XenServer and the IntelliFlash system has performed just as promised during the sales process, said Randy Casterlin, Citrix/Windows server engineer at Renal Ventures.

The system leverages the performance of SSD and low cost-per-TB of high-capacity disk drives to deliver up to seven times the performance and up to 75% less capacity required than legacy systems. The current solution combines the IntelliFlash operating environment with high-performance DRAM, solid-state flash, and Intel Xeon processors, resulting in higher capacity and significantly higher performance. Maximizing capacity, on-the-fly deduplication, and data compression enables more virtual machines for a lower investment in storage and network infrastructure.

Renal Ventures considered attaching the IntelliFlash array to the Citrix servers with 10-Gigabit Ethernet but found that Gigabit Ethernet was provided sufficient throughput for their environment. "Doing the benchmarking on the existing environment and talking to other folks that have similar environments, we found that the performance was adequate. Some day we may go the 10Gb route, but right now it wasn't cost-effective." In addition, the array includes twelve individual Gigabit Ethernet ports with link aggregation to support higher speeds if needed.

Casterlin said that IntelliFlash offered the best value proposition with the required IOPS performance to support the Citrix virtualized environment but without the high price of other products that would cripple efforts to deploy a well-balanced IT environment without glaring bottlenecks. "We really like the performance, but we discovered that a lot of best practices are put by the wayside in favor of budgetary constraints. We didn't want to have a bottleneck with the storage and IntelliFlash made it very cost-effective for us to get into a very nice high-performance NAS. We found we really didn't have to scrimp like we thought we would and have everything else be fully powered—solid HP servers, plenty of RAM and processor power—only to be crippled by a storage IOPS bottleneck. We really didn't want to put ourselves in that position."

Challenges

- Incumbent legacy storage arrays inadequate for the higher IOPS demands of a virtualized server environment

Solution

- Tintri IntelliFlash

Results

- Performance
- Flexibility
- Drop-in storage upgrade without network infrastructure expenditure



Tintri
Intelligent Infrastructure

The Results: High Performance with Flexibility and Low Expenditure

"The flexibility and future-proofing built into the IntelliFlash arrays were distinct differentiating advantages," according to Casterlin. The IntelliFlash architecture not only supports multiple storage protocols, but simultaneous connections of Fibre Channel, iSCSI, NFS and CIFS. It supports Gigabit and 10-Gigabit Ethernet and 8Gb Fibre Channel. They also offer expansion shelves with 18, 26 or 72TB of additional storage, protecting the initial investment in IntelliFlash hardware while sustaining a customer's growing storage environment.

"We really like the flexibility," said Casterlin. "Right now we're using NFS but down the road we may want to use CIFS or iSCSI. Being able to make those decisions quickly and not having to purchase something new or an add-on having it all be available to us now from day one was great."

The simplicity of NFS was an ideal fit for Renal Ventures, providing a drop-in storage upgrade that didn't require any network infrastructure expenditure. "We wanted to have high performance throughput and IOPS between our Citrix environment and the storage, but we also didn't want to spend a lot of time and money on education to make one of us on the IT team a storage expert, which is kind of prerequisite for using iSCSI or Fibre Channel," said Casterlin. "We like the simplicity of NFS, quick learning curve and the ease of implementation. We found that to be very satisfactory for us."

"The flexibility and future-proofing built into the IntelliFlash system were distinct differentiating advantages."

Randy Casterlin, Citrix/Windows Server Engineer, Renal Ventures

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