

# Virtualization Performance Leverages iStor Networks, IP SAN and VMware as a Storage Foundation for Hosted Services

## The Challenge: Rising Costs and Expectations versus Limited Budgets and Resources

Virtualization Performance, a leading provider of server virtualization products and services based in Tampa, Florida was at a crossroads. The company's growing portfolio of server virtualization, storage, hosting, backup, and disaster recovery services put pressure on the company's IT infrastructure. Virtualization Performance's customer base expanded rapidly with the growing popularity of virtualization. As a result the capital costs of added servers, storage and networking gear required to meet customer demand was spiraling out of control. Additionally, ongoing data center operating costs for power, cooling, and rack space were also increasing exponentially.



Rising costs were only half of the problem. Virtualization Performance customers include mid-market and publicly traded companies that are looking to leverage virtualization and other advanced technologies. Often they lack the time, IT resources or expertise necessary to implement and manage them. "Our clients have Enterprise needs and expectations," said Stephen Ames, President, Virtualization

Performance. "They have business critical applications to support national marketing, sales, accounting, operations, and human resources departments that run 24 x 7. Distributed work forces, regulatory requirements, and other changing needs only add to the complexity."

Eventually it became obvious to company executives that throwing money at the problem wasn't going to make things better. Two events really illustrated the need for change. "First, we received a letter from the data center announcing that our data center bill was going to double due to rising fuel and energy costs for power and cooling. Second, we reached the 1 TB storage capacity limit of our NAS appliance," said Ames.

It became imperative to accomplish three specific objectives:

- Meet customer expectations for growth by adding capacity on demand
- Achieve 99.99% uptime
- Control hardware and operating costs

## The Solution: The iStor integraStor iS325 and iS512 with VMware Virtual Infrastructure

Virtualization Performance assessed the situation and decided that a virtualized data center with iStor integraStor iS325 and iS512 SAN's and VMware Virtual Infrastructure would meet the requirements. In evaluating technology options, company executives realized that it would take a balanced combination of storage, network switches, servers, and virtualization software working together to achieve success.

The company started with storage because it is the foundation of virtualization. "We had to evaluate capacity, speed, price, expansion, complexity, and support when selecting a solution. For our first SAN, we looked for systems with 1 – 10 TB of raw storage. That would give us plenty of storage for the foreseeable future. It needed to be fast to support virtual machines that need high bandwidth, low latency access to the data store. We chose iSCSI instead of Fibre Channel to leverage our gigabit network and avoid the cost of fiber switches, directors, drives, and cabling. Finally we needed to keep costs low and EMC's quote of \$175k was just not in the budget," according to Ames.



Virtualization Performance evaluated offerings from several vendors but ran into interconnect issues. One product offered 12 drives in single chassis, but only had two Gigabit Ethernet (GbE) network ports. After doing the math, engineers realized that with a data transfer rate of 1 GB every two minutes, it would take 400 hours to move 12 TB of data onto the SAN. “That time frame wasn’t acceptable to our customers and wasn’t practical in the eight hour nightly backup window. It would be like trying to drain The Great Lakes with a garden hose,” comments Ames.

After additional searching, Ames found iStor Networks, an Irvine, California-based IP SAN storage networking company. “We were looking for a fast, affordable solution that had the features we wanted. The iStor iS325 and iS512 SAN’s were the only credible solutions that had everything we needed for under \$30k,” said Ames.

The iS325 iSCSI SAN offers 15 drives with either eight 1 GbE ports or a single 10 GbE port. The iS512 is a scalable iSCSI SAN storage solution, addressing high-availability needs with dual controllers, SAS or SATA drive support, and it is expandable to 36 drives. A single controller delivers in excess of 80,000 I/O per second. Both models offer advanced storage virtualization features, including support for dynamic RAID migration, resizing live volumes, and an application aware configuration wizard that automatically optimizes the volume for the application load profile.

“Speed was also very important to us to support virtualization. The iS325 is very fast and can transfer 825 MB / sec — more than what four servers can do under ideal circumstances. We’ve been able to use the iS325 quite successfully in our environment, and immediately the SAN was twice as fast as direct-attached storage,” said Ames.

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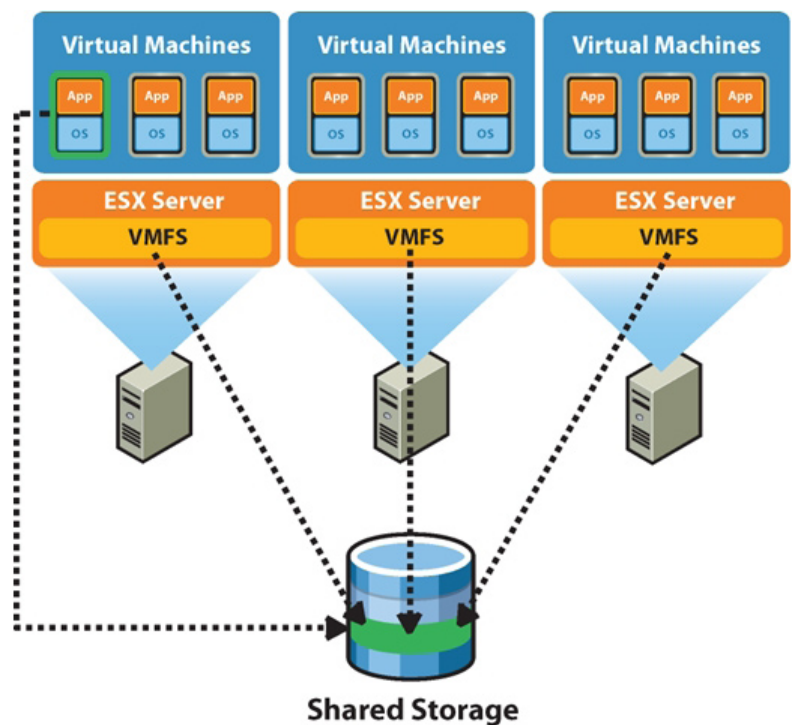
*— Stephen Ames, Virtualization Performance*

Price was also a factor for Virtualization Performance. Enterprise SAN’s can cost \$10k per TB, but the iS325 is only \$1k per TB, so price per terabyte makes iStor the 10-to-1 favorite. Looking at it from a speed perspective, you would have to spend a lot more money to get something faster.

Once management settled on the iStor iS325 for low utilization virtual machines and disk-based backup and the iS512 for mission critical applications, engineers were able to add an enterprise gigabit switch infrastructure from Enterasys and HP Proliant servers to run VMware.

The complete solution allows Virtualization Performance to add capacity for new and existing customers on demand with virtual machine templates in a matter of minutes. When customers need additional capacity in the accounting department during quarter end, it’s easy to dynamically add memory, CPU or disk capacity. The iStor SAN’s allow the company to dynamically add storage for new or growing virtual machines. Centralized storage enables advanced features like VMware VMotion live virtual machine migration and VMware High Availability automatic failover that allow for zero downtime for maintenance or hardware failure.

“The best part about this is that we don’t have to buy as many physical servers. We have achieved a 19 to 1 virtual machine to server consolidation ratio. That’s 19 times I don’t need to ask Finance and Accounting for capital dollars for servers. Our power and cooling bill is also lower because we only pay to power one server instead of 19. We are now running more virtual machines in less rack space than ever before,” said Ames.



## Customer Validation: NYSE Company Achieves DR and Compliance Objectives

Virtualization Performance validated the strength of the iStor iSCSI SAN solution when it took on a project with a NYSE publicly traded company. The client required a disaster recovery plan to meet its obligations to the Securities and Exchange Commission, auditors and shareholders. At the time, all of the company's critical IT resources were housed in its Tampa Bay headquarters.

The customer engaged Virtualization Performance's professional services to virtualize their entire critical IT infrastructure, including servers, software and data. "We migrated them to the data center where they have access to as much storage as needed on the iStor SAN's. Their in-house IT staff can focus on end user support and day-to-day operations," says Ames. In case of a disaster or outage, the virtual machines can failover to the disaster recovery site quickly to ensure minimal downtime.

Since the move, the customer credits Virtualization Performance with helping it achieve multiple business objectives, including:

- Providing the necessary technologies for a viable disaster recovery and business continuity plan
- Lowering IT costs and total cost of ownership
- Substantially improving its backups
- Providing 99.99% uptime
- Significantly improving end user satisfaction

"Our IT outsourcing agreement with this customer included storage, data center space, virtualization, bandwidth and professional services," says Ames. "They acquired enterprise-strength IT services for their business while controlling costs. Sarbanes-Oxley requirements have been met, uptime and user satisfaction have gone way up, and they actually spend less money than they were spending before. At the customer level, the iStor solution assisted us to meet our goals by meeting our client's goals."

## About iStor

iStor Networks, Inc. is an innovative technology leader that provides leading edge network storage solutions that are scalable, flexible, and high performing. iStor has professional storage solutions for small to medium business enterprise environments that are recognized for bringing leading edge iSCSI technology to the marketplace, setting new standards for cost effectiveness, world class performance, and ease of use. iSCSI IP-based Storage Area Networks (SAN) represent the fastest growing segment of the storage industry and iStor is uniquely positioned to provide the next generation of network storage technology to the marketplace.

The iStor integraStor family of products addresses customers' broad range of business-critical needs for flexibility, affordability, and high performance iSCSI Storage. The cost-effective iStor iSCSI storage includes entry level SATA appliances and scalable storage supporting SATA/SAS tiered storage for high availability primary storage applications.

integraStor technology is built on the foundation of a purpose-built ASIC designed for high performance and low energy consumption and complemented by a comprehensive storage management firmware stack featuring volume virtualization. Volume virtualization brings compelling features to the data center, including online capacity expansion, RAID level migration, free space defragmentation, read-only volumes, and ACL security on the volume levels, in addition to efficiently managing user data stored on the media.