



COMPANY

Systems Solution, Inc. (SSI) is a King of Prussia, Pennsylvania-based information technology (IT) solutions and support provider focused on meeting the needs of small and medium businesses. Originally founded in 1988, SSI has proven over the last 20 years that they are a trusted resource for comprehensive network infrastructure, computer solutions, and knowledgeable, prompt support. Always looking to leverage emerging technologies for the benefit of their clients, SSI has introduced MySecureCloud™, a hosted infrastructure solution that provides more cost-effective options than ever for those looking to outsource their IT operations to eliminate capital expenditures, enable a more flexible “pay as you go” model, and very efficiently support rapid growth.

INDUSTRY

Outsourcing and IT solutions delivery

CHALLENGES

- Continuing to meet I/O performance requirements while scaling their hosted infrastructure offerings
- Meeting customer objectives with the most cost-effective IT infrastructure

SOLUTION

Microsoft Windows Server 2008 R2 Hyper-V with Virsto One

RESULT

Creating a scalable, cost-effective infrastructure blueprint for SSI's outsourcing business built on Hyper-V and Virsto One that delivers high I/O performance and increased VM density with a given set of resources

“Virsto lets me get a lot more out of the hardware that I've already paid for, and translates directly into an ability to support more clients out of a given infrastructure investment.”

Scott Urofsky
CTO

CHALLENGES

SSI's MySecureCloud hosted infrastructure solutions are based around Microsoft's Hyper-V server virtualization technology. Key design considerations for this infrastructure included scalable performance, enterprise-class reliability and recoverability, and cost efficiency that would enable them to price their “infrastructure as a service” offerings very competitively. Based around server blade technology from HP and Fibre Channel (FC) SANs from Promise Technology, SSI hosts a number of core business applications, including file services, mail and mail archiving services, and database services, for their North American customer base. In addition to putting scaling demands on their back end infrastructure, SSI's high growth rates for their outsourcing and cloud hosting businesses required a lot of administration to keep their environment operating at peak performance.

“Maximizing VM density on our infrastructure while continuing to meet our customers' performance objectives was a critical goal for us to keep our business competitive,” explained Scott Urofsky, SSI's Chief Technology Officer (CTO). “Performance requirements were driving us to provision our storage in a way that resulted in a lot of wasted storage capacity, driving up our costs. We were looking for a solution that would allow us to deliver high performance but would use storage much more efficiently, as opposed to trading performance and space utilization off against each other.”

SOLUTION

At first, Urofsky evaluated an appliance-based, storage virtualization solution but found that it would not really address their cost requirements. As he was researching additional options on-line, he discovered Virsto Software. What piqued his



interest in Virsto was their claim that they resolved the I/O performance problem in a way that could significantly increase the VM density his infrastructure could support. The fact that Virsto was a software only solution that would work with any storage arrays and architectures (SAN, NAS, DAS) promised to be a much better fit with his budget guidelines, and Urofsky brought Virsto One into his lab for testing. In-house benchmarks proved that the use of Virsto One would increase his I/O performance by almost 3x using the same hardware he already had deployed in production. During the testing, Urofsky's team also noted that Virsto's snapshot technology was a significant improvement over what they had been working with, offering the ability to instantly create an unlimited number of clones (clones are snapshots that are readable and writable in Virsto's parlance) without allocating any additional storage capacity. Virsto's clones are thin-provisioned and actual storage capacity is only allocated as those clones are modified.

"Virsto gave us the high performance with very efficient storage capacity consumption that we were looking for, allowing us to increase our supported VM density with our existing hardware," continued Urofsky. "What we didn't expect were some of the management advantages and administrative time savings that we obtained using Virsto's virtual storage layer."

Virsto's solution deploys at the hypervisor-level with a single software install on each Hyper-V Host, regardless of the number of supported VMs. Virsto establishes a virtual storage layer that can boost VM I/O performance by up to 3x, reduce disk consumption by 90%, cut provisioning times by 10x, and simplify VM management. Virsto One's innovative architecture offers performance, storage capacity utilization, and management advantages for either virtual server or virtual desktop

environments, helping customers to get the most out of their Hyper-V deployments.

"Virsto One integrated very well with our Hyper-V environment, supporting familiar Windows management semantics and enabling the use of a lot of key Hyper-V features like Quick Migration, Live Migration, and failover clustering that would be important to us over time," added Urofsky. "Virsto One's GUI is an MMC snap-in that fully supports Windows Management Instrumentation (WMI), giving us a lot of PowerShell options to save time on provisioning and other repetitive administrative tasks that we have to perform to keep our infrastructure humming along."

RESULT

The bottom line for SSI was simple: using Virsto One, SSI is able to get about 3x the number of VMs on each TB of storage compared to what they were getting using standard NTFS storage, and they are getting better performance than they were getting using fixed disks before. "Virsto delivered on their claims, giving us much higher I/O performance than we had without them, increasing our VM density, and providing us significantly more efficient storage capacity utilization," said Urofsky. "And we also saw the benefits of their optimized snapshot technology, which allowed us to instantly create recovery points without consuming any storage capacity and restore VMs much more rapidly than before."

"Virsto lets me get a lot more out of the hardware that I've already paid for, and this translates directly into an ability to support more clients and generate more revenue from our outsourcing model out of a given investment," concluded Urofsky. "As our business grows and we build out our infrastructure, keeping Virsto in the mix will clearly save us a lot of money."