

Goodwill Industries[®] Doubles Throughput with V-locity I/O Reduction Software



Goodwill Industries of the Valleys was facing performance issues related to SharePoint backups and their Kronos workforce management application. They were also spending an enormous amount of time to regain space on their HP LeftHand SAN by constantly creating new data stores and migrating data, since there was no other way to shrink thin-provisioned volumes on LeftHand SANs as result of file fragmentation.

CHALLENGES

- SharePoint backups were taking four to five hours to complete and would time out as a batch job
- Kronos workforce management was sluggish during peak hours
- 40 hours a month was spent managing the LeftHand SAN due to fragmentation issues

V-LOCITY BENEFITS

- 50% or greater application performance improvement — with no additional hardware
- Latency and throughput dramatically improved
- True “Set It and Forget It[®]” management
- Compatible with all SAN/NAS systems
- Easily deploy to the largest virtual, physical or cloud environments in just five clicks
- Before-and-after performance reporting to validate performance gains
- Enterprise-wide visibility into I/O performance, from server to storage

THE CUSTOMER

Goodwill Industries of the Valleys is a non-profit organization dedicated to helping people with disabilities and disadvantages overcome barriers to employment and gain greater independence. With over 1,000 employees, Goodwill Industries of the Valleys is part of a network of local, autonomous Goodwill member organizations in the United States and Canada.

THE CHALLENGE

According to Matthew Thompson, Database Systems Administrator, backups of their SharePoint databases were “hideously slow,” taking four to five hours to complete. Since Matthew didn’t want to run backup operations during business hours due to the excessive load on the SAN, he ran them on Friday evenings. The backups required his onsite presence due to the fact that systems needed to be backed up individually since they would typically timeout as a batch job.

In addition, the Kronos workforce management system would be reduced to a crawl during peak hours. There was not enough available throughput to keep up with demand.

Perhaps the biggest struggle was the waste of Matthew’s time spent managing capacity on their HP LeftHand SAN. Matthew would spend 40 hours every month creating new data stores and migrating data, since there was no way to reclaim space or shrink volumes from thin provisioning on the LeftHand SAN. Excessive file fragmentation ballooned volumes, and he could only reduce the size by moving the data to a new, clean data store so writes could be written cleanly as a single contiguous file.

“At the time we thought our only option was a premature rip-and-replace of our SAN architecture. Since a \$300K expenditure wasn’t a luxury we could afford at the time, we needed a way to improve I/O performance on the hardware infrastructure we already had while also finding a space reclamation solution,” said Matthew.

“After V-locity was deployed, SharePoint backup times were cut in more than half. Backups that took four to five hours now take just two hours. I now have my Friday evenings back,”

MATTHEW THOMPSON
DATABASE SYSTEMS
ADMINISTRATOR

ENVIRONMENT

- VMware vSphere 5.5
- HP LeftHand SAN with SAS drives
- Windows Server 2012 R2

V-LOCITY FEATURES

IntelliWrite[®] I/O reduction technology automatically prevents split I/Os from being generated when a file is typically broken into pieces before write and sequentializes otherwise random I/O generated by the “I/O blender” effect.

IntelliMemory[®] intelligent caching technology caches active data from read requests using available server memory.

Benefit Analyzer embedded benchmark provides before/after performance comparisons, enabling IT to measure workloads and performance in a real-world environment.

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THE SOLUTION

Matthew looked into V-locity[®] I/O reduction software. Being somewhat skeptical that a 100% software solution could solve all his performance issues, Matthew reached out to the ConduSIV sales team for an evaluation of V-locity in his real-world environment.

Installed on Windows VMs at the operating system layer, V-locity nondisruptively optimizes I/O at the source — reducing the I/O requirement for any given workload which accelerates both reads and writes. The entire infrastructure derives benefit because only productive, contiguous I/O is pushed through the servers, network and storage.

With IntelliWrite[®] I/O reduction technology, V-locity sequentializes otherwise random I/O created by the “I/O blender” effect of multiple VMs funneling I/O streams down to the hypervisor. By reorganizing this random pattern to behave sequentially as a single, contiguous I/O, less I/O is required for any given file. Since more data is now processed with each I/O operation, organizations achieve far greater throughput and improved response times. Subsequent reads also benefit, since only minimum I/O is required to fulfill the data request.

With IntelliMemory[®] caching technology, V-locity further reduces I/O demand on the underlying storage layer by caching active data within available server memory.

THE RESULT

“After V-locity was deployed, SharePoint backup times were cut in more than half. Backups that took four to five hours now take just two hours. I now have my Friday evenings back,” said Matthew.

On the SharePoint servers, V-locity dropped 16,162 I/Os per GB down to 5,982. The I/Os per GB were reduced by more than half. The servers went from being able to process 86.5GB/hour to 162.7GB/hour.

The servers running Kronos workforce management software saw throughput double as well. Prior to V-locity, it took an average of 2.64 minutes to process 1GB of data with a maximum of 22.72GB per hour. After deploying V-locity, the servers running Kronos could process 1 GB of data in 1.26 minutes with maximum throughput jumping to 47.54GB per hour.

Since V-locity optimizes I/O at the VM layer, it ensures files are written in a clean sequential manner. Matthew no longer had the fragmentation issues that ballooned volumes on his HP LeftHand SAN.

“Fragmentation issues on the SAN meant that I would spend four days a month simply creating new data stores and moving data to it. It was the only way we could reclaim space and shrink thin-provisioned volumes on the LeftHand SAN. But since V-locity proactively eliminates 95-100% fragmentation at the OS layer, that means everything is written to SAN storage in a clean sequential manner. I no longer lose 40 hours a month babysitting my systems,” said Matthew.