Condusiv Technologies

National Mortgage Lender Eliminates Sluggish MS-SQL Applications with V-locity I/O Reduction Software

SUPREME LENDING

Loan officers were complaining about sluggish performance of the most important application in the business: a loan origination system sitting on top of MS-SQL. Despite being supported by new Nimble hybrid storage arrays, Supreme Lending didn't want to throw hundreds of thousands of dollars at new all-flash arrays to get better performance.

CHALLENGES

- User complaints related to sluggish MS-SQL performance
- Expensive fork-lift upgrades to all-flash was not an option

V-LOCITY BENEFITS

- 50% or greater application performance improvement—with no additional hardware
- Latency and throughput dramatically improved
- True "set and forget" 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 VM to storage

THE CUSTOMER

Supreme Lending is a leading mortgage banker and broker based in Dallas, Texas. With over 100 branches throughout the country, they offer customers a wide variety of loan products and a commitment to help them achieve their dream of home ownership.

THE CHALLENGE

The most mission-critical application at Supreme Lending is their home-grown loan origination system that sits on top of a MS-SQL database. It's the application their loan officers use daily to do their job efficiently and provide the best possible customer care. However, with the growth of users and data, Supreme Lending was pushing the I/O boundaries of their infrastructure and needed help.

"Our common workloads are supported by our older Dell Compellent arrays, but all of our MS-SQL workloads are supported by newer Nimble storage arrays. As great as Nimble performs from a 'cost per performance' standpoint, it simply wasn't enough with the growth of data and users we had been experiencing. Loan officers were complaining about slow queries taking five to ten minutes to run reports, and up to five seconds to advance from screen to screen within the loan origination system," said Chuck Keith, Director of Infrastructure, Supreme Lending.

"At the time, we thought our only solution was to invest hundreds of thousands of dollars into new all-flash arrays to get the performance we needed. No matter how well your business is doing, no one wants to have a million-dollar conversation that's not in budget. We needed to see how we could maximize performance on the hardware we already had, which led to a conversation with Condusiv," said Keith.

Keith continued, "It wasn't until we spoke with Condusiv® and heard what they did for other virtualized customers like ourselves that we began to consider the real root cause to our performance issues – small, fractured, random I/O characteristics that were akin to pouring molasses on our systems."

CASE STUDY

ENVIRONMENT

- Key application – home-grown loan app on MS-SQL
- Servers – Dell PowerEdge / 25 Hosts support 250+ VMs
- Operating System – Windows Server 2012R2
- Hypervisor – VMware vSphere 6.0
- Storage – Dell Compellent and Nimble (hybrid of SSD+HDD)
- Network – 10GbE network

V-LOCITY FEATURES

IntelliWrite® 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 only idle, available server memory.

"Time Saved" Benefits Dashboard shows ongoing benefit of the software by revealing the amount of I/O offloaded from storage and how much time that saves.

Benefit Analyzer™ embedded benchmark tool provides before/after performance comparisons prior to installing V-locity and after.

THE SOLUTION

Condusiv's V-locity® I/O reduction software is "set and forget" software that runs transparently in the background on Windows servers and automatically offloads I/O from underlying storage, then streamlines the I/O traffic that remains. All of this is done with near-zero overhead to the CPU. First, V-locity eliminates excessively small, fractured writes and reads, replacing them with large, clean contiguous writes, so more payload is carried with every I/O operation. Second, V-locity establishes a tier-0 caching strategy by using idle, available DRAM to serve hot reads. Nothing has to be allocated for cache, since V-locity dynamically adjusts to only what is otherwise unused. With as little of 2GB of available memory, many customers serve as much as 50% of their read traffic. As a result, most V-locity customers experience at least 50% faster application performance, with many workloads getting much more, depending on the extent of Windows write inefficiencies and how much memory is available.

Since V-locity I/O reduction software is free to evaluate, it was a "no brainer" for Chuck and his team to try the software on their most troublesome MS-SQL systems and see what it could do.

THE RESULT

"We examined a couple server-side caching players including Pernix Data and Infinio, but since Condusiv's V-locity does so much more than server-side caching, its proof of concept came out the clear winner on both performance and price. And we didn't have to add any additional hardware, since we already had a good amount of DRAM," said Keith.

"Right off the bat, MS-SQL reporting that used to take five to ten minutes dropped to 30 seconds with V-locity, and all user complaints about sluggishness disappeared. We couldn't believe it," said Keith.

Moreover, the typical 30-second load times to log into the software package dropped to ten seconds – a 3X improvement. The five-second wait to advance from screen to screen also disappeared, so that users could load each screen almost instantly.

"Not only did V-locity solve our 'death by a thousand cuts' issue of excessively small, tiny writes and reads from Windows VMs, but their DRAM caching engine provided huge gains on top of that by offloading a good percentage of hot reads from our underlying Nimble storage. It made a huge difference in response time and gave back a big chunk of IOPS to our Nimble storage to be used for other things. We saved hundreds of thousands of dollars by being able to squeeze significantly more performance from the hardware stack we already have." said Keith.

Keith continued, "With V-locity I/O reduction software on our servers and Nimble storage for our backend, we feel we are getting best of breed performance at lowest possible cost."

Download a 30-day evaluation ->

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