

Finance Company Deploys DymaxIO I/O Transformation Software for Blazing Fast VDI



New Mexico Mortgage Finance Authority (MFA) needed the fastest possible user experience from their Horizon View VDI implementation supported by an EMC flash storage array. After deploying DymaxIO® I/O transformation software, DymaxIO was able to eliminate 40% of I/O traffic to storage that was nothing but mere noise unnecessarily wasting precious IOPS and throughput. After helping MFA ensure a pristine VDI experience, they deployed DymaxIO to the rest of their Windows server environment to see the same benefit on MS-Exchange, MS-SQL, SharePoint, and more.

THE CUSTOMER

The New Mexico Mortgage Finance Authority is a self-supporting quasi-governmental entity that provides financing to make quality affordable housing and other related services available to low- and moderate-income New Mexicans. MFA provides resources to build affordable rental communities, rehabilitate aging homes, supply down payment assistance and affordable mortgages, offer emergency shelter and administer rental assistance and subsidies.

CHALLENGES

- Performance on Tier-1 applications like VDI, MS-SQL, Exchange, SharePoint

DYMAXIO 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 largest virtual, physical, or cloud environments in just 5 clicks
- Before-and-after performance reporting to validate performance gains
- Enterprise-wide visibility into I/O performance, from VM to storage

THE CHALLENGE

The MFA decided to move away from the use of physical PCs and migrate to a virtual desktop infrastructure via VMware Horizon View to better support their users. Although often a preferred strategy for standardization and ease of use, the biggest challenge most organizations face in the rollout is ensuring an endpoint experience that rivals or even improves upon the performance users are accustomed to seeing on their physical PCs.

“Anytime an organization starts talking about VDI, the immediate concern in the IT shop is how well we will be able to support it from a performance standpoint to ensure a pristine end user experience. Although supported by EMC VNXe flash storage with high IOPS, one of our primary concerns had to do with Windows write inefficiencies that chews up a large percentage of flash IOPS unnecessarily. When you’re rolling out a VDI initiative, the one thing you can’t afford to waste is IOPS,” said Joseph Navarrete, CIO, MFA.

“With the DymaxIO software running on our VDI instances, users no longer have to wait extra time. The same is now true for our other mission critical applications like MS-SQL.”

JOSEPH NAVARRETE, CIO

ENVIRONMENT

- Key applications – VMware Horizon View 7 - VDI, MS-SQL, Exchange, SharePoint
- Servers – Cisco UCS
- Operating System – Windows Server 2012R2, 2019
- Hypervisor – VMware 7.0
- Storage – Nimble AF40 All Flash, HF20 Hybrid
- Network – Cisco 10GbE

DYMAXIO 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 provides before/after performance comparisons prior to installing DymaxIO and after.

Set-It-and-Forget-It® functionality ensures V-locity is completely nondisruptive as it operates quietly in the background optimizing the I/O stream in real-time and doesn’t even need a reboot to install or upgrade.

THE SOLUTION

ConduSiv’s patented DymaxIO I/O transformation software is “Set-It-and-Forget-It®” 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, DymaxIO eliminates excessively small, fractured writes and reads and replaces them with large, clean contiguous writes so more payload is carried with every I/O operation to maximize server and storage performance. Second, DymaxIO establishes a tier-0 caching strategy by using idle, available DRAM to serve hot reads. Nothing has to be allocated for cache since DymaxIO dynamically adjusts to only what is otherwise unused. With as little of 2-4GB of available memory, many customers serve as much as 50% of their read traffic from memory, which is 15X faster than SSD and opens up even more IOPS and bandwidth from storage. DymaxIO customers who add even more memory (e.g. 8-16GB) to key systems with a read bias to get even more help from DymaxIO, invariably serve 50-99% of read traffic and simply tune their memory allocations according to their performance needs.

THE RESULT

After Joseph bumped up the memory allocation for his VDI instances to get even more performance from DymaxIO I/O transformation software, DymaxIO was able to offload 40% of I/O from storage and ensure a blazing fast VDI experience to his users.

He then demo’d DymaxIO on his MS-SQL server instances in which DymaxIO eliminated 39% of his read I/O traffic from storage due to DRAM read caching and another 40% of write I/O operations by solving Windows write inefficiencies at the source. After seeing the performance boost and increased efficiency to his hardware stack, Joseph ensured DymaxIO was running across all his systems like MS-Exchange, SharePoint, and more.

“With DymaxIO I/O transformation software running on our VDI instances, users no longer have to wait extra time. The same is now true for our other mission critical applications like MS-SQL. The dashboard within the DymaxIO UI provides all the necessary analytics about our environment and view into what the software is actually doing for us. The fact that all of this runs quietly in the background with near-zero overhead impact and no longer requires a reboot to install or upgrade makes the software truly “set and forget,” said Navarrete.

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ConduSiv Technologies

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