IT Excellence in Education: Middletown Township Public School District Saves Costs and Boosts Performance with DymaxIO

A DYMAXIO CASE STUDY

CHALLENGES

- Optimizing performance in the new Nutanix environment
- Balancing IT demands with a small, multitasking team
- Maximizing overall infrastructure efficiency
- Extending aging hardware lifespan without compromising performance
- Reducing storage strain during peak workloads

RESULTS SNAPSHOT

83%
READ I/Os
ELIMINATED

SERVER ISSUES
RESOLVED

2X
HARDWARE
LIFESPAN DOUBLED

ENVIRONMENT

- ·Servers: Dell
- Operating Systems: Windows 2019 to 2022
- Hypervisor: VMware 7.0.3 & Nutanix
- Storage: Nutanix Files
- Network: HP Aruba Wired to Wireless
- Key Applications: Genesis Student Information System on Oracle, Genesis School FI (Payroll, Personnel, Financial) on Oracle, Tyler Technologies Versatrans Student Transportation Software, 374 Server (MDR; Management & Deployment), PDQ Deployment & Inventory Software, PaperCut print management software, Destiny Library Inventory Management, Surpass Library Inventory Management, Camera Servers, SQL Server 2016, DHCP, DNS, Domain Controllers, and Proctor Cache Standardized Testing

AT A GLANCE

Middletown Township Public School District in New Jersey, serving 9,000 students and 1,600 staff, faced common IT challenges like aging hardware, limited staff, and tight budgets. With Condusiv's DymaxIO® I/O optimization software, they extended hardware life, reduced disk drive failures, and boosted performance—especially in their new Nutanix environment.

THE CUSTOMER

Middletown Township Public School District (MTPS) serves students from pre-K through 12th grade in Middletown Township, Monmouth County, New Jersey. Committed to fostering lifelong learning and responsible citizenship, the district has embraced innovative solutions to maximize resources. David Siwiak, Director of Information Technology, shares how DymaxIO improved IT efficiency and cut costs for the district.

THE CHALLENGE

For over 11 years, Middletown Township Public School District has relied on Condusiv's I/O optimization software—Diskeeper®, V-locity®, and now DymaxIO®—to maximize performance and extend the lifespan of their Dell servers. "DymaxIO is no doubt a key reason for the servers' longevity," said Siwiak. In fact, MTPS continues to use these older systems as they perform well with no disk drive failures.

To address capacity and support needs, Siwiak decided to move their main production systems to Nutanix. With a small IT team managing multiple responsibilities, Siwiak needed to ensure the new Nutanix environment performed efficiently from the start, avoiding I/O bottlenecks native to Windows that could strain their resources.

THE SOLUTION

Seeing the benefits DymaxIO brought to their older systems, Siwiak and his team implemented it in their new Nutanix environment. By offloading substantial I/O activity, DymaxIO significantly boosted server and workstation performance. This proactive I/O optimization at the source, right within the Windows OS, ensures that their infrastructure consistently runs at peak efficiency.

![Condusiv Technologies logo]

DYMAXIO BENEFITS

- Over 50% improvement in application performance—without additional hardware
- Significant improvements in latency and throughput
- True "set and forget" management
- Fully compatible with SAN/NAS systems
- Simple deployment across virtual, physical, or cloud environments
- Before-and-after performance reporting to validate performance gains
- Enterprise-wide visibility into I/O performance, from VM to storage

DYMAXIO FEATURES

- IntelliWrite® boosts performance by preventing split I/Os at the source within the logical disk layer of the Windows OS, replacing random I/O with sequential I/O and eliminating the I/O Blender effect.
- IntelliMemory® utilizes intelligent caching algorithms to create a read-only cache, using only the idle, available free memory on the server.
- "Time Saved" Benefits Dashboard tracks the software's ongoing benefits by showing the I/O offloaded from storage and the corresponding time saved.
- Set-It-and-Forget-It® ensures nondisruptive, real-time optimization of I/O from the Windows OS, running seamlessly in the background without requiring reboots for installation or updates.

Download a 30-day evaluation »

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THE SOLUTION (CONTINUED) ⌄

DymaxIO optimizes I/O directly within the Windows OS on each VDI client, reducing the number of I/Os needed to write files. By preventing Windows from creating unnecessary split I/Os, DymaxIO improves throughput across servers, networks, and storage. This ensures Windows produces the most sequential I/O possible, enhancing performance across the entire infrastructure.

DymaxIO's IntelliWrite® technology prevents Windows NTFS from splitting I/Os, generating larger I/O packets for every write. This reduces random I/O traffic, replacing it with sequential I/Os that storage can process more efficiently, boosting throughput. Additionally, IntelliMemory®, a dynamic read-only cache, further minimizes I/O traffic to storage. Together, these features enhance system performance and efficiency, making DymaxIO a vital tool for Middletown's IT infrastructure.

THE RESULTS ⌄

By deploying DymaxIO on their older Windows servers as well as all VMs on their new Nutanix implementation, Middletown Township Public School District's IT department achieved significant performance improvements and cost savings. DymaxIO significantly extended the lifespan of the district's older Dell hardware, keeping it operational for over 10 years without notable disk drive failures. Its "set it and forget it" design required minimal maintenance, with only occasional updates. DymaxIO enhanced system stability and performance, reducing help desk traffic and optimizing I/O on heavily used servers, including the student information service server. This resulted in a more efficient, stable, and cost-effective IT infrastructure, enabling the district to focus on providing quality education.

DymaxIO continued to enhance performance in the new Nutanix environment after upgrading. In just 60 days, DymaxIO eliminated over 1.4 billion storage I/Os at the source, saving a cumulative 45 days of I/O processing time across 57 servers. With an average I/O latency of ~2.8 milliseconds, the time saved (1.4 billion I/Os × 0.0028 seconds) adds up to 3,920,000 seconds—equivalent to 45.37 days. By targeting inefficiencies in parallel and concurrent I/O operations, DymaxIO significantly improved throughput, minimized storage strain during peak workloads.

Siwiak highlights how DymaxIO has transformed his team's workflow: "In an educational technology environment, we're understaffed and juggle multiple roles. Not having to deal with daily server issues is fantastic. DymaxIO boosts our efficiency and lightens our daily workload—it's a game-changer." He emphasizes, "If you have fewer headaches when you're wearing multiple hats, it makes everything more efficient and easier to manage. DymaxIO provides this for us!"