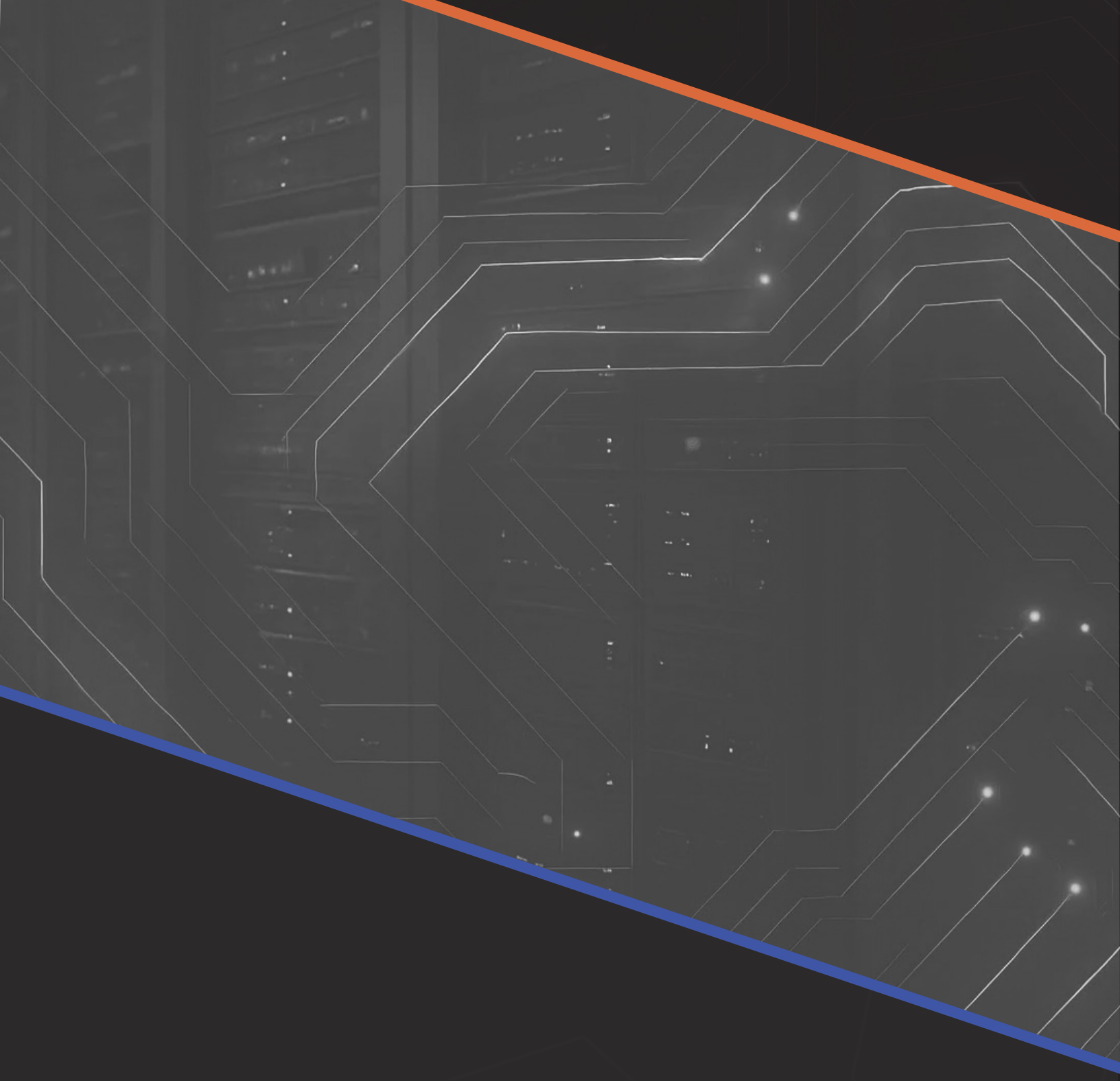

CASE STUDY

# St. Clair County RESA

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St. Clair County RESA is one of Michigan's 56 intermediate school districts, serving as the centralized IT backbone for five school districts, a local community college, and seven municipalities. With a mission to provide cost-effective, high-quality services, the IT team is responsible for delivering infrastructure that supports everything from classroom instruction to video security systems across multiple geographically dispersed sites.

## OVERCOMING A 1-2-3 INFRASTRUCTURE PUNCH

Before adopting VergeOS, RESA ran a 14-node VMware environment across two data centers. Their storage infrastructure was built on SolidFire arrays, which had previously replaced a legacy NetApp FAS system. Scalability limits drove the transition from NetApp—they had reached their maximum capacity of nine-disk shelves and could no longer expand. While the SolidFire-based architecture provided the scale-out capabilities they needed, it came at a high cost. With storage growth requiring the addition of one to two storage nodes per year and a five-year lifecycle triggering regular hardware refreshes, the environment became increasingly expensive to maintain. Budget constraints left little flexibility to absorb rising costs. This was the first "punch."

The second blow to RESA's infrastructure strategy came with Broadcom's acquisition of VMware. This introduced a wave of uncertainty—licensing costs spiked, patches and updates were suspended, and customers faced an increased risk of audit notices. In response, the team began evaluating alternatives, including Nutanix, Proxmox, and Hyper-V. However, a deeper analysis revealed that each option came with trade-offs. Whether due to missing features, limited manageability, or architectural shortcomings, none of the platforms could match the performance, flexibility, or operational maturity RESA required to support its school districts.

The third and final blow came from the mounting complexity of hardware and supply chain challenges within RESA's Cisco UCS environment. The platform's high level of integration made it difficult to manage and even more challenging to scale quickly in response to changing needs. When components failed or upgrades were needed, lead times were long and unpredictable. Hardware maintenance costs were substantial, adding significant financial pressure to a constrained budget. The hardware lacked the agility RESA needed, making it clear that continuing with a traditional, complex hardware stack was no longer sustainable. To recover from the one-two-three punch—and to avoid being hit again—James Marsack, Senior Network Engineer at RESA, was tasked with finding a long-term solution. It quickly became clear that a simple hypervisor swap wouldn't be enough. What RESA needed was a complete reevaluation of its infrastructure strategy.

The turning point came when Cambridge Computer introduced Marsack to VergeOS. Unlike other alternatives, VergeOS didn't require RESA to compromise on performance or functionality. Instead, it preserved the capabilities they relied on and extended them. With VergeOS, RESA was able to consolidate infrastructure, simplify management, reduce licensing costs, and improve performance and resilience. What began as a search for a replacement evolved into a comprehensive IT modernization initiative.

While RESA adopted new, efficient hardware, VergeOS gave them the flexibility to repurpose older equipment. The secondary hardware market is full of commodity systems that are inexpensive and easy to deploy. With the proper planning, such as maintaining a stock of spare parts, organizations can extend the life of their hardware while avoiding costly support renewals.

By timing hardware refresh cycles strategically, RESA was able to combine compute and storage into a single, orchestrated purchase. VergeOS streamlined this consolidation, helping reduce energy consumption, rack space, insurance, management overhead, and cooling requirements. The cost savings were substantial—funds that could be redirected toward a stronger disaster recovery strategy. With VergeOS, that DR plan wasn't just a remote backup—it became a complete, rapidly restorable environment capable of running the entire data center in a fraction of the time a manual restore would require.

## VERGEOS PROOF OF CONCEPT

During their proof of concept, RESA repurposed their existing SolidFire nodes by running VergeOS directly on them, demonstrating VergeIO's hardware flexibility firsthand. What were once dedicated storage nodes became fully functional compute and storage resources under VergeOS. In addition to this architectural versatility, VergeOS delivered significant efficiency gains: its VSAN with Global Inline Deduplication achieved a 16:1 deduplication ratio, far surpassing the 3.7:1 ratio they had previously seen with SolidFire.

The PoC started flawlessly, but during testing, a significant hardware failure occurred, resulting in several nodes going offline. Fortunately, RESA was running VergeIO's ioGuardian, which provides inline data recovery in the event of catastrophic failures. The RESA team was impressed by how smoothly it worked, to the extent that they didn't even realize there had been a failure until they checked.

## WHAT IS IOGUARDIAN?

ioGuardian is VergeIO's built-in data resilience engine, acting as a self-healing recovery server. It continuously monitors the environment and reconstructs missing or damaged data in real time if multiple nodes or drives fail simultaneously. Unlike traditional backup systems that require scheduling, storage silos, and long restore times, ioGuardian provides instant fault recovery without disruption—offering a level of availability reserved for high-end, hardware-centric systems, but delivered in software.

## ELIMINATING VEEAM AND IMPROVING RESILIENCY

ioGuardian, combined with VergeOS's ability to take hourly snapshots with zero performance impact, enabled RESA to eliminate its Veeam deployment. Since Veeam's licensing costs were nearly on par with VMware's, removing it almost doubled their savings. More importantly, they advanced their data protection strategy, shifting from once-daily backups to hourly snapshots with instant rollback capabilities. VergeOS allowed them to retire their dedicated QNAP backup array, which had previously consumed half a rack of space. The VergeOS-based backup and disaster recovery cluster not only replaced it using less space, but also added utility by providing an environment capable of hosting virtual machines when needed.

## SNAPSHOTS POWERED BY IOCLONE AND GLOBAL DEDUPLICATION

VergeOS snapshots are made possible by VergeIO's ioClone technology, which integrates with VergeOS' metadata tracking and Global Inline Deduplication. ioClone enables the creation and retention of an unlimited number of snapshots without consuming additional physical storage for duplicate data. Each snapshot is independent, not just from the production volume it was cloned from, but also from all other snapshots. This architecture eliminates snapshot chains, ensuring fast and reliable recovery points with minimal overhead. As a result, RESA can implement a much more aggressive data protection strategy than was previously feasible.

## SMOOTH MIGRATION TO PRODUCTION

The PoC was the first phase of production migration. Within 20 minutes of the initial deployment, the system was operational. Migration itself was straightforward: they used VergeOS' built-in ioMigrate to back up the VMs, removed the VMware tools, and then migrated the workloads. Along the way, they took the opportunity to segment VergeIO into its own dedicated firewall zone, which delayed the switchover slightly but let them revisit and tighten their county-wide VLAN architecture.

## INFRASTRUCTURE PERFORMANCE AND ROI

Their old SolidFire hardware, running the VergeOS PoC, consistently outperformed their newer VMware infrastructure. In production, performance has improved even further thanks to a switch to newly acquired Supermicro-based nodes. The combination of more affordable, better-performing hardware and the elimination of Veeam allowed them to achieve a full return on investment in roughly two and a half years. VergeOS's built-in capabilities enabled them to eliminate their QNAP NAS, and, as mentioned, they transitioned from daily backups to hourly ones.

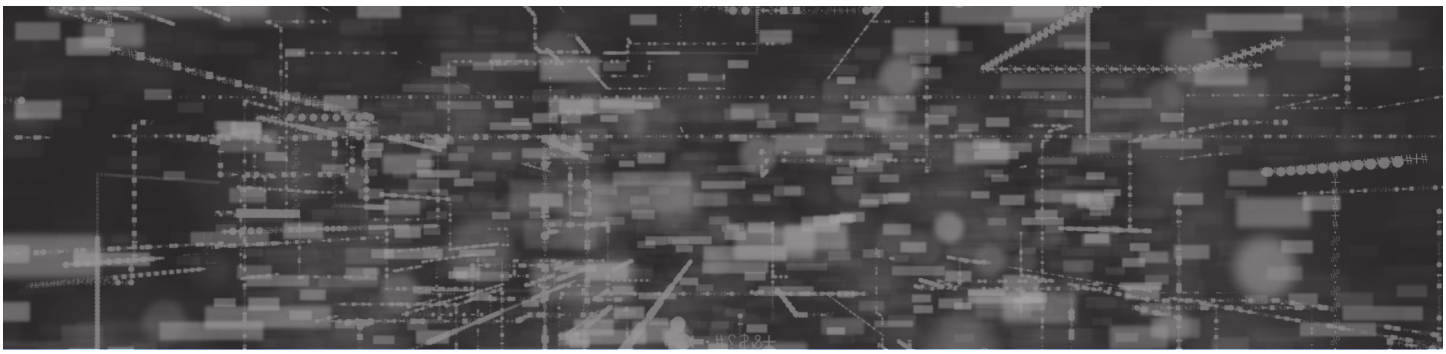
Although storage, supply chain, and Broadcom were the catalysts, Marsack's infrastructure-wide approach to their 1-2-3 punch problem enabled them to yield incredible savings versus switching storage systems or swapping out hypervisors alone.

## SELF-SERVICE FLEXIBILITY

Another key advantage RESA gained by moving to VergeOS was a dramatic improvement in secure self-service capabilities. In the previous VMware environment, providing delegated access was difficult due to authentication constraints and the complexity of permission mapping. As a result, self-service access was limited, forcing the IT team to manage even routine customer requests manually.

VergeOS solved this with its elegant and secure tenanting system. The multi-tenant architecture is easy to configure, Marsack called it "foolproof". With integrated SSO and support for two-factor authentication, even edge environments with public-facing management interfaces are far more secure than what VMware offered. Now, each district or customer can manage their virtual machines independently, reducing administrative overhead while delivering greater value and autonomy to end users.

For an organization like RESA, which supports 20 tenants and almost 600 virtual machines, self-service isn't a convenience—it's a necessity. Each entity has unique needs, operating schedules, and workloads that require rapid changes or deployments. Empowering these stakeholders to manage their environments allows RESA's IT team to focus on strategic initiatives instead of being overwhelmed by day-to-day operational tasks.



## OPERATIONAL EFFICIENCY AND SUPPORT

Operationally, VergeOS has proven to be stable and intuitive. The platform's native, secure, multi-tenant Virtual Data Center (VDC) architecture has enabled them to segment environments by district and use case, enhancing security while offering self-service without compromising oversight. Each technician can spin up isolated test environments within a VDC, which has accelerated learning and experimentation. Support from VergeIO has been "amazing"—responsive, knowledgeable, and consistent. Marsak said, "he wished all his vendors were able to provide the support that VergeIO delivers every day."

## LOOKING AHEAD: AI AND SIMPLIFIED SCALING

Looking ahead, RESA plans to continue consolidating its IT footprint. VergeOS eliminates the need to manage storage, compute, and backup as separate layers, dramatically reducing complexity. When new capacity is needed, they add a node—no need to rethink the architecture or relicense a SAN.

RESA is looking forward to VergeIQ, including the possibility of building AI-driven support agents using internal documentation, such as training a chatbot to assist users with the district's legacy library system, as well as adding contextualization to the helpdesk ticketing knowledge base. While they could make this themselves, VergeIQ will streamline and accelerate that process.

## WHAT IS VERGEIQ?

VergeIQ is VergeIO's integrated AI services layer designed to make artificial intelligence accessible without the complexity of deploying separate AI infrastructure or managing external orchestration platforms. Built directly into VergeOS, VergeIQ supports model inference, RAG (retrieval-augmented generation), virtual agents, and pipeline automation—all within the same software-defined environment. It enables organizations like RESA to harness private AI using their existing infrastructure, while maintaining full control over data privacy and eliminating the need for specialized Kubernetes or GPU frameworks.

## FINAL THOUGHTS

The RESA team describes VergeOS as more than a replacement for VMware, for them it is a step into a different category of infrastructure—one that offers operational freedom, flexibility, and simplified scaling. As Marsack put it:

> **If you have the ability, go to VergeIO. You'll have a menu of options that just don't exist under VMware.**