

ACCELERATING VMWARE WORKLOADS WITH VEXATA



Vexata VX-100F Scalable NVMe Flash Array Accelerates VMs

- Breakthrough Economics**
 The VX-100F reduces investment in virtualization by delivering more performance at lower costs than leading all flash arrays (AFAs).
- Performance at Scale**
 Vexata offers a resilient and high-performance enterprise storage solution, with linear scaling of performance as capacity scales.
- Expandable**
 VMs are provided with NVMe-based storage, that expands capacity from TB's to PB's and unlocks the full potential of modern solid state media. Vexata enables the consolidation of multiple simultaneous workloads to one array without sacrificing capacity or performance.

"After many months of testing, I confidently say the Vexata Array is outstanding in both performance and stability."

Dan Pollack, Chief Storage Architect, Oath/AOL

Companies are transforming to a virtualized data center to improve capacity, efficiency and utilization, but there remain concerns on moving mission-critical workloads to a virtualized environment because of performance challenges. Traditional AFA architectures create bottlenecks that limit performance of mission-critical workloads running on virtual machines (VMs) requiring IT architects to add AFA nodes and servers. This results in the VMs having a very long response times, poor performance, and increased total cost of ownership.

Unmatched Performance Density for VM Consolidation






The Vexata VX-100 unleashes the full potential of NVMe solid state media with a purpose-built architecture that gives VMware infrastructure a ten-fold performance improvement over existing AFAs at much lower cost points. The VX-100F Scalable NVMe Flash Array provides VMs with massive throughput, ultra-low latency, 99.9999% availability, and enterprise data services, delivering high-performance I/O to VMs with bare-metal performance for mission critical workloads.

The parallel access of the VX-100 to the NVMe media results in VMs accessing data with dramatically higher query and ingest rates compared to a conventional AFA. This enables IT to consolidate multiple VMs to a single storage system while giving each VM a significant improvement in performance and operational efficiency. Vexata also enables IT to reduce the number of servers and their associated software licenses that are dedicated to the VMs. The VX-100F Scalable NVMe Flash Array is certified for VMware ESXi and supports Microsoft Hyper V, Citrix XenServer, Oracle/RHEL Virtualization, and KVM.

Eliminating VM Contention and Improving VM Security

Running different applications on AFAs often causes one VM to utilize an unfair share of the I/O resources, requiring IT to tweak the AFA, the offending VMs, or the hypervisor. This goes away with Vexata, which provides ultra-high-performance data services to every application regardless of load.

VM data is critical and most customers protect it with snapshots or encryption. Using these services on most AFAs cause a slowdown I/O performance, which impacts VMs. Not true with Vexata, the snapshots are instantaneous, and all VM data is secured with an AES 256-bit algorithm, and both operate without any performance degradation.

				
BREAKTHROUGH ECONOMICS	PERFORMANCE AT SCALE	FLEXIBLE EXPANDABILITY	ENTERPRISE VM FEATURES	SIMPLIFIED MANAGEMENT
Reduce per-VM spend <ul style="list-style-type: none"> • Half cost of AFAs • >4X reduction in servers • Dramatic reduction in software licenses • Multi-chassis management reduces management cost 	Accelerate per-VM performance <ul style="list-style-type: none"> • 10X lower latency than AFAs across 100s of TB • 5X higher DB query/update performance per server • Ingest at 1.5TB/m • Throughput of 3TB/m • Non-disruptive scaling from TBs to PBs and to millions of IOPS all in a compact 6U chassis • Boosts VM I/O acceleration by supporting VAAI/Block 	Broadest range of interfaces in industry, with built-in balancing of capacity and performance <ul style="list-style-type: none"> • SCSI-FC, NVMe-FC, and NVMe Ethernet • 32Gb FC or 40Gb Ethernet 	All enterprise features included <ul style="list-style-type: none"> • Immutable instant snapshots and clones • Always-on encryption • N+2 data protection • Continuous operations • 99.9999% availability • Non-disruptive rolling upgrades • Call-home & predictive analysis 	Consolidate VM workloads with unified monitoring and management <ul style="list-style-type: none"> • Consolidate storage services for all your VMs • Monitor & manage storage services across the hall or across the world • Multi-chassis management

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Case Study

VMWARE VIRTUALIZING HIGH-PERFORMANCE MEDIA DISTRIBUTION – AOL/OATH

Challenges

AOL/Oath uses multiple MySQL VMs and other applications to distribute content to a billion people worldwide. They utilized a two-tier SAN comprised of multiple AFAs to optimize performance for their media infrastructure, but scaling the infrastructure for performance, cost and complexity became challenging for their cloud content management system. Additionally, Oath was having to deal with their MySQL applications monopolizing the I/O, impacting Oracle-based business workloads (the noisy neighbor effect) requiring them to continuously tune their infrastructure.

Solution

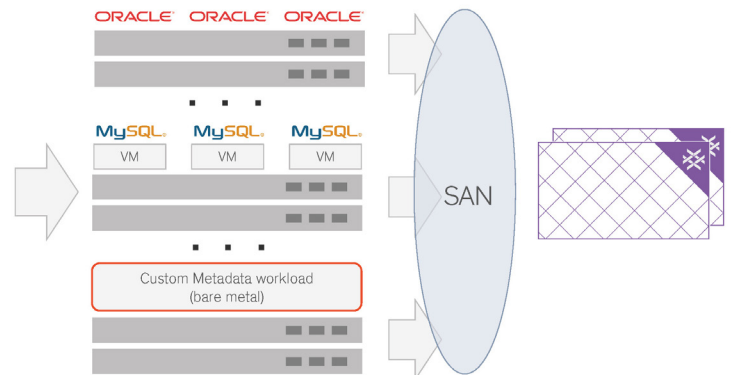
Oath replaced multiple AFAs with a single Vexata VX-100F. They saw significantly improved system performance and achieved lowered costs by deploying Vexata to reduce complexity and provide performance at scale. The Vexata system also met Oath's strict requirements for non-disruptive system scaling and in-service upgrades.

Results

Oath tested the Vexata array with traffic that emulates the worst case conditions that they encounter across their private cloud. Oath determined that Vexata significantly improved the overall system performance and lowered costs and complexity, the Oath Fibre Channel network was previously restricted by their existing all-flash arrays, but with Vexata, they measured more than 35GB/s mixed (25GB R/10GB W) throughput on their older 8Gb FC infrastructure. Additional performance advantages were seen once Oath upgraded to a 32Gb FC network which allows the VX-100F array to scale performance to keep the 32Gb FC ports fully utilized. The Vexata system also met Oath's strict requirements for non-disruptive system scaling and in-service upgrades. When Oath replaced their AFAs with one Vexata VX-100F Scalable NVMe Flash Array, the performance of their FC network doubled.

Oath has been able to increase the performance of their media distribution system while reducing system complexity, lowering capital and operational expenses. Oath also did not have to deal with MySQL impacting Oracle, removing the manual tuning and balancing necessary with the current solution. Oath moved applications from their multi-tier SAN to a single SAN running a VX-100F Scalable NVMe Flash Array.

- Half the TCO of Oath's current multiple AFA solution
- Simplified storage management reduced OPEX
- High performance of VX-100F eliminated noisy neighbor effect
- Went from underutilized to full utilization of FC infrastructure



ABOUT VEXATA: Vexata is the leader in active data management solutions. Vexata's unique breakthrough enterprise offerings enable transformative performance and scale from database and analytics applications. With unparalleled ability to consume the latest in media like NVMe Flash and now with Intel Optane™ SSDs, Vexata systems deploy simply and seamlessly into existing storage environments. Learn more at www.vexata.com

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