

WHITE PAPER

Storage Challenges in the Age of Petabyte-Scale **Digital Transformation**



Overview

Digital transformation is a business enabler, one that also translates to an increase in the demand for greater storage capacity and performance. This increasing demand requires IT organizations to re-examine their data storage strategy as the growth in capacity doesn't align with a shrinking IT budget. To support the growth of the business and remain competitive in a global digital market, CIOs are asked more than ever to "do more with less," while improving performance and availability at the same time.

"We were convinced we needed all-flash, until we tested the InfiniBox. [It far out-performed the competition in terms of performance, availability, and cost.] We've seen improved performance [across all of our applications] without the additional cost of an all-flash solution."

Francesco De Simone, Director of IT, TAS Group

Doing more with less requires new thinking, one which traditional architectures were never designed to provide. Making a trade-off between high capacity, high performance, or low cost is no longer acceptable, as all three are expected in a competitive enterprise storage solution. At the same time, enterprise IT operations are facing competition from cloud providers, who can leverage their scale to reduce the up-front cost of infrastructure.

To meet this challenge, Moshe Yanai founded Infinidat in 2011. Yanai is a proven storage innovator, known as the driving force behind EMC's Symmetrix, IBM's XIV, and Diligent's deduplication technologies. His goal was to create a storage array that would bring the economics of the hyperscalers (Google, Facebook, Microsoft, and Amazon) to the enterprise data center, while at the same time providing the performance, availability and rich feature set that cloud providers often lack.

What is InfiniBox®?

InfiniBox is an enterprise storage array designed from the ground up to meet the combined challenges of capacity and performance at the best possible total cost of ownership.

InfiniBox is sold as a fully integrated, resilient appliance with optimized integration of software and hardware. All hardware is carefully selected and qualified to provide our customers with the best of both worlds: a software-defined storage system which efficiently utilizes commodity hardware to minimize cost and maximize "serviceability", and a fully integrated solution that provides a thoroughly tested, plug-and-play, resilient solution with no effort required from the customer.

What Makes the InfiniBox Stand Out?



PERFORMANCE

Similar to the hyperscalers, InfiniBox takes a software-centric approach to performance acceleration. Our machine learning algorithm, Neural Cache, automatically tunes the cache management and prefetch functions to each IO pattern, covering traditional IT, big data or AI workloads. This patented algorithm allows the InfiniBox to leverage commodity hardware while providing higher performance than All-Flash-Arrays (AFAs). In simple terms, we ensure that DRAM and flash are used intensively for active workloads, while inactive data is safely stored on economic high-capacity media.



RELIABILITY, AVAILABILITY, SERVICEABILITY

InfiniBox has a symmetric Active-Active-Active architecture, allowing it to achieve seven nines availability (99.99999% uptime), two orders of magnitude greater than the industry standard for enterprise storage platforms. This availability is not limited to the controller's all critical components (network, power, battery backup) which are triple-redundant.

In the event of a media failure, even a dual-disk failure, data is reassembled from redundant copies. The system can sustain up to 12 disk failures before maintenance is required. This resiliency minimizes the need for service calls and eliminates additional opportunities for human error. The result is bullet-proof storage capable of supporting the most business-critical applications.



CAPACITY

A single InfiniBox rack can provide up to 8.3PB effective capacity. This high capacity allows our customers to consolidate multiple existing arrays into one, reducing floor space, power, cooling and administrative costs—further saving on their OpEx.



EASY TO MANAGE

Modern enterprises require more than just performance/cost/capacity—they require a full suite of features to meet their data protection, and operational and regulatory requirements. InfiniBox offers these features with a focus on ease-of-use, to reduce administration overhead and allow IT staff to manage higher capacity with fewer engineers.



COST

Through an optimal mix of high-performance and high-capacity storage media, the InfiniBox offers a pricepoint unmatched by traditional enterprise storage platforms. This financial engineering allows our customers, particularly those running a private or public cloud, to compete with the leading cloud providers on cost while providing value-added services and service levels to their customers. The result is both a competitive advantage and a higher margin with no compromise between the two.

InfiniBox also offers a flexible cost model. From simple CapEx deals to Capacity on Demand, and a flexible “as a service” OpEx-based model, we work closely with our customers to provide a financial structure that best aligns with their business requirements.



ECOSYSTEM INTEGRATION

InfiniBox is fully integrated with all the leading ecosystem players, cutting complex deployment cycles down to a single day or a few hours, and providing all of the needed monitoring out-of-the-box.



AUTOMATION

As businesses shift from a high-touch model to a more automated DevOps-like model, automation is key to business agility. To simplify automation, InfiniBox comes with a set of host-side tools for all standard operating systems, as well as a full Software Development Kit (SDK) to allow our customers to accelerate their automation adoption with ease.

Conclusion

When CIOs are tasked with pushing the business forward using rich data infrastructure, driving cost down while increasing capacity and performance are the first steps in building a successful IT infrastructure. Most modern storage solutions only satisfy two of these three requirements, creating an ever-growing gap between the needs of the business and the infrastructure's capabilities.

InfiniBox is the first storage solution to close that gap—providing higher capacity and higher performance while significantly reducing the total cost of ownership.