

INFINIDAT BRINGS MISSION-CRITICAL STORAGE TO EVERY ENTERPRISE

INFINIDAT'S MOMENTUM

Infinidat's journey through the storage industry has been unique. Where other enterprise infrastructure providers may begin with a modest offering and scale up over time, Infinidat has taken the opposite approach. The company serves the high-capacity, high-performance needs of the mission-critical workloads prevalent across the Fortune 1000.

Infinidat no longer targets just the Fortune 1000, however. Over the past decade, the storage needs of nearly every size organization have exploded at a staggering rate. As a result, workloads requiring low-latency, high-throughput access to consolidated data of more than a petabyte have become common. Infinidat now serves organizations of every size with its InfiniBox storage solutions and its InfiniGuard purpose-built data-protection appliance.

Infinidat's focus on high-performance storage has led to growth. Under the stewardship of CEO Phil Bullinger, who joined Infinidat in early 2021, the company reported an increase in bookings of over 40% for the year. In addition, during the final quarter of 2021, the company said it grew bookings by more than 68% year-over-year. The story is even better among Infinidat's Fortune 100 customers, where the company saw 130% revenue growth. These metrics demonstrate that Infinidat's solutions are more than meeting the needs of data-hungry IT shops across every enterprise.

Infinidat's momentum is the direct result of a unique storage architecture that allows the company to service the needs of workloads that legacy storage offerings currently can't.

INFINIBOX

It is a challenge to consolidate storage from multiple siloed arrays into a single solution while satisfying enterprise-critical workloads' rigid capacity, performance, cyber resilience, and availability requirements. Infinidat's answer is InfiniBox, the brainchild of the company's founder and storage industry veteran Moshe Yanai.

InfiniBox is a unified storage device supporting fiber channel and iSCSI block storage, as well as NFSv3 and SMB for filer needs. This multiprotocol support is enabled simultaneously, allowing for easy, unified workload consolidation.

INFINIBOX ARCHITECTURE

The Infinidat team designed a storage architecture to deliver against seven basic design principles:

1. **Reliability:** Mission-critical workloads must never fail.
2. **Cyber Resilience:** Storage solutions must protect against internal and external threats, such as cyber-attacks.
3. **Performance:** Data delivery must meet or exceed the applications' throughput and latency requirements.
4. **Capacity:** Storage must keep up with the continuously expanding volume of data inherent in nearly every modern enterprise.
5. **Consolidation:** Must include increased TCO and simplicity of deployment, architected for scalability without compromise.
6. **Simplicity:** Must be easy to manage and integrate into enterprise DevOps workflows.
7. **Cost:** A solution meeting these design goals must remain affordable for procurement and operation.

Infinidat was successful in engineering a platform that meets these seven design goals. Moreover, InfiniBox does so with a feature set that is very competitive in the enterprise storage array market.

Infinidat's InfiniBox has simple and powerful manageability features, including a robust REST API for integrating modern DevOps and AIOps tools. In addition, it supports multi-tenant environments and the quality-of-service capabilities that facilitate service-level coordination across tenants, workloads, and volumes.

The InfiniBox product line can scale from 375 TB effective in the InfiniBox F2300 to 10 PB effective in the high-end F6300. This capacity includes up to 92TB of flash cache and over 3TB of DRAM. InfiniBox's Neural Cache uses DRAM and flash to provide better performance and latency numbers than are achievable with flash alone.

InfiniBox also delivers what may be the industry's highest availability storage platform, a claim Infinidat backs with its 100% data availability guarantee. Infinidat's InfiniSafe technology, which includes several cyber resilience features, is built into the availability features of InfiniBox. The Infinidat website has the complete [InfiniBox feature set](#).

Architected for Performance

The secret to delivering these design goals is a software stack centered around an intelligent, machine-learning trained cache architecture, the Neural Cache. The Neural Cache within each InfiniBox predicts future I/O requests based on its ongoing observation of the access patterns to the data stored on each array.

The Neural Cache allows InfiniBox to stage data into a DRAM cache preemptively and enables an application to access data with more than 100x lower latency than flash storage.

But it isn't just about caching. A critical component of any storage system's performance is how that system manages metadata. InfiniBox's performance architecture is tuned to reduce the latency that metadata access can impart on any workload. InfiniBox stores all metadata in DRAM, which accelerates both reads and writes. The system also utilizes a patented approach to metadata placement and organization that allows all metadata operations to execute at a consistent latency.

According to Infinidat, an InfiniBox equipped with a mixture of flash storage and traditional hard drives can deliver up to 25 GB/second of throughput, 2M IOPS, at 50-microsecond latency. The all-flash InfiniBox SSA II also delivers latency as low as 35 microseconds. At the time of writing this report, no other solutions on the market claim provide this level of latency performance and scalability.

Reliability Engineered-In

InfiniBox includes a unique triple active-controller architecture. There are three layers of controller redundancy, coupled with a self-healing architecture based on Infinidat's patented InfiniRAID data layout and predictive failure analytics.

Beyond platform-level reliability, data integrity and cyber resilience are critical enterprise storage needs. In addition to its encryption in-flight and at rest with no performance penalty, InfiniBox delivers cyber resilience with its InfiniSafe technology software (available on InfiniBox, InfiniBox SSA II, and Infinidat's purpose-built backup appliance – InfiniGuard). InfiniSafe, included at no extra charge with Infinidat's all-inclusive licensing model, has multiple cyber resilience features:

- Immutable snapshots
- Logical local and remote air-gapping
- A fenced forensic environment
- Near-instantaneous recovery

While rapid response and recovery from a cyber-attack or other event requiring cyber resiliency is a critical priority for any IT organization, no primary storage vendor has offered recovery-time guarantees. Infinidat has changed that, recently announcing its InfiniSafe Cyber Storage guarantee.

The InfiniSafe Cyber Storage guarantee makes Infinidat the only¹ primary storage vendor to offer a recovery-time guarantee. Infinidat claims its new offering ensures its customers can recover and restore data at near-instantaneous speed by using an immutable snapshot with a guaranteed recovery time of one minute or less. This is a nice addition to Infinidat's existing 100% availability guarantee.

INFINIBOX SSA II

Infinidat released its first all-flash InfiniBox SSA in 2021, bringing a new level of performance and storage density. InfiniBox SSA II followed in early 2022 with improved capabilities.

InfiniBox SSA II is built on the well-proven InfiniBox architecture, tuned for the performance that Infinidat's Neural Cache and the latest-generation Intel Xeon processors can deliver. As a result, InfiniBox SSA II's performance is among the best in the industry, providing high throughput with latency as low as 35µs.

Infinidat recently expanded its SLA program to include new performance guarantees across its InfiniBox platforms. Infinidat works closely with customers to identify their specific needs for performance and to analyze the requirements for each specific workload. Once the workload performance requirements are profiled, Infinidat will provide service level agreements aligned to them.

Infinidat claims its performance guarantee assures customers that Infinidat primary storage platforms will outperform their existing storage products in their production environments. At minimum, the guarantee should assure the performance requirements underpinning its SLAs are met.

¹ As of the time of paper publication.

INFINIGUARD WITH INFINISAFE

Enterprises face a daily struggle to protect data from an increasing and ever-present set of cyber threats. Delivering a fully cyber resilient data protection capability that protects against typical operational failures while maintaining the availability and performance required by business-critical applications is no small challenge.

Infinidat addresses data protection with its InfiniGuard products. InfiniGuard combines its InfiniBox and InfiniSafe technology to deliver an industry-leading purpose-built data protection solution. As a result, InfiniGuard should meet the needs of the most demanding enterprise.

The latest-generation InfiniGuard can ingest data at up to 180 TB/hour, with an average throughput of over 4 GB/second. In addition, recovery is near-instantaneous, regardless of the backup repository size.

InfiniGuard solutions scale up to 50 PB of effective capacity. Additionally, the solution includes embedded deduplication engines in a fully active/active configuration with a ready standby node built in.

Backed-up data is kept safe against cyber threats with various protections enabled by InfiniGuard's InfiniSafe technology. InfiniGuard's immutable snapshots ensure that backups are protected. InfiniGuard also allows for logical air-gapped protection.

InfiniGuard also provides a fully isolated, fenced forensic environment unique among data protection products. This ability allows IT to restore a suspect copy of data to inspect, test, or recover without putting any production resources at risk.

Bringing together the performance and scalability of InfiniBox, along with InfiniSafe's cyber storage immutable snapshot guarantee, makes InfiniGuard one of the most attractive data protection solutions on the market.

FLEXIBLE CONSUMPTION MODELS

Perhaps the most disruptive trend impacting enterprise IT over the past half-decade isn't related to technology but rather the rise of flexible consumption models for IT infrastructure. While many organizations buy equipment in on-prem data centers, others prefer more flexible procurement models that allow for budget-friendly capacity- or usage-based payment approaches.

Infinidat offers a range of innovative consumption models with flexible options to meet the needs of any organization. Its elastic pricing enables an IT organization to buy a storage system from Infinidat with a base capacity level while offering options when the organization needs additional capacity. Customers can pay for additional capacity outright or pay an OpEx "rental" fee for the extra storage, an ideal solution when short-term storage needs require more storage capacity.

Finally, Infinidat offers a cloud-like consumption-based model, InfiniBox FLX. This allows an IT shop to bring InfiniBox storage into the on-premises data center while only paying a contractual rate for capacity.

THE ANALYST'S TAKE

Infinidat has met its stringent design goals and delivered a solution that consolidates storage for high-performance, high-capacity mission-critical applications. As a result, it has proven itself in some of the most demanding enterprises in the world.

Multi-petabyte-scale storage is no longer a requirement isolated to large enterprises. Organizations of every size are now managing data at this scale. Infinidat's InfiniBox architecture, recently updated with its next-generation all-flash InfiniBox SSA II, offers compelling functionality with performance and reliability capabilities nearly unmatched within the industry.

IT organizations across nearly every industry have taken notice of Infinidat. As a result, the company is experiencing record growth, outpacing the overall storage industry. Moreover, Infinidat's momentum may continue for quite some time, if traditional storage providers remain locked into legacy storage architectures with limitations.

Organizations needing to consolidate multi-petabyte data or deliver data to mission-critical workloads with high-performance should include Infinidat in any evaluation. Its InfiniBox SSA has the lowest latency, 35 μ s, of any SAN product currently on the market. InfiniBox's 100% data availability guarantee is equally unmatched.

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