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# The Business Value of Infinidat Storage



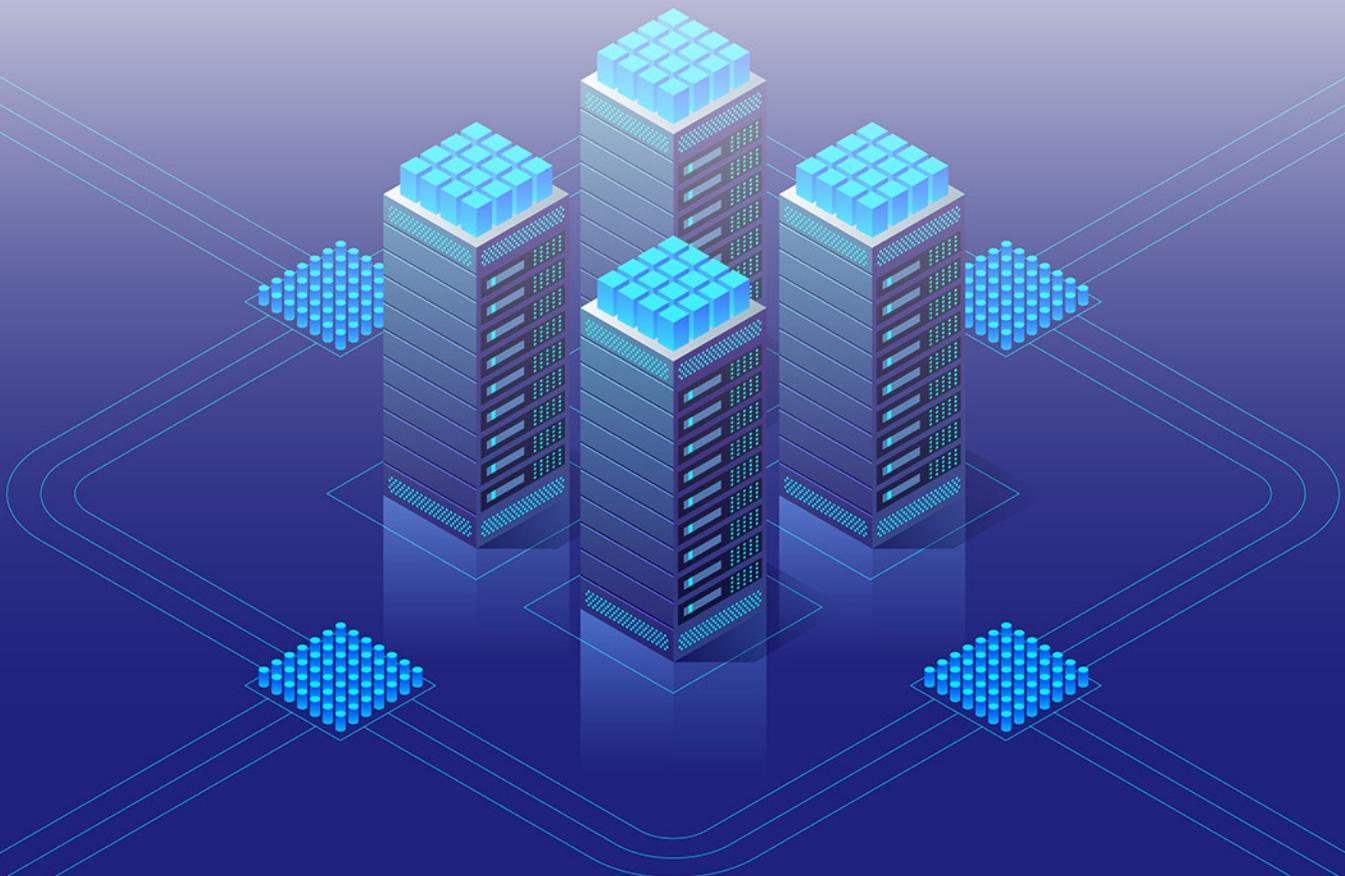
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# Executive Summary

IDC research shows that organizations plan to continue investing in server, storage, and network hardware despite the challenging economic climate. However, budget tightening means many will face pressure to achieve a quick return on their investments. Infinidat offers a portfolio of enterprise-grade storage systems designed to cost-effectively address requirements for high performance, availability, and scalability at a time when companies are increasingly consolidating workloads and deploying demanding analytics and artificial intelligence (AI) applications as part of digital transformation initiatives. Infinidat's InfiniBox hybrid and all-flash storage arrays run on commodity hardware to lower costs and use the same software-defined architecture, InfuzeOS operating system, and Neural Cache deep-learning algorithms to deliver most data from high-speed caching tiers. They also share a common management platform, InfiniMetrics telemetrics technology, and InfiniVerse cloud-based predictive analytics to ease administration.

IDC conducted research that explored the value and benefits for organizations of using Infinidat InfiniBox to support the full range of their storage operations.

**Through a series of in-depth customer interviews and a methodology for determining business value, IDC's analysis found that these companies realized significant value from the offering, with annual average benefits per organization of \$1.29 million (\$166,700 per PB), a 162% five-year return on investment (ROI), and payback within 11 months by:**

- Providing a robust and cost-effective infrastructure for more efficient storage management, including significantly improved data compression functionality
- Improving the efficiency of storage management and performance teams to increase agility in deploying the resources needed for business operations
- Minimizing the effects of storage-related unplanned downtime to increase end-user productivity
- Improving business results and operations, leading to quantified financial gains

## Business Value Highlights

*Click each highlight below to navigate to related content within this document.*

-  **162%**  
5-year ROI
-  **11 months**  
to payback
-  **48%**  
less storage operations costs
-  **54%**  
quicker storage upgrades
-  **55%**  
more efficient storage performance monitoring team productivity
-  **70%**  
help desk time saved
-  **49%**  
improved backup time
-  **89%**  
improvement in unplanned downtime
-  **19%**  
faster time to market

# Situation Overview

Digital transformation efforts are driving enterprises to refresh and modernize their server, storage, and/or data protection infrastructure, and workload consolidation is often a key priority. Densely consolidating workloads can lead to significant cost savings, but organizations also must ensure that the new systems can meet the performance, availability, scalability, and security requirements of the individual applications that were running in discrete systems. Digital-first enterprises that are consolidating workloads and using analytics and AI applications to gain greater business value from their data have increasingly turned to storage systems equipped with solid-state storage to deliver the performance they need. Storage arrays that support block and/or file storage protocols are often their top choices, but object systems also now offer all-flash options to handle performance-sensitive workloads that require S3 API support. Another alternative that has seen substantial revenue growth is hyperconverged infrastructure combining virtualization, compute, storage, and networking resources.

Large enterprises, service providers, and hyperscalers often face cost and scaling challenges in updating their storage infrastructure as their data volumes grow to multiple petabytes. Software-defined storage can help ease the scalability hurdle, but organizations with ever-expanding data needs may find all-flash storage costs prohibitive on a price-per-GB basis. Some can make a compelling case for flash storage based on total-cost-of-ownership (TCO) considerations such as drive reliability and power. Emerging quad-level cell (QLC) flash options can also help boost density and lower costs. However, QLC-based solid state drives (SSDs) still come at a cost-per-GB price premium over hard disk drives (HDDs), prompting some organizations to seek alternatives. Hybrid flash arrays that mix SSDs and slower HDDs work for some workloads, but enterprises that require high infrastructure operations (IOPs) and low latency can encounter problems in delivering predictable, consistent performance for mission-critical workloads.

Vendors that have attempted to address the cost, performance, and scaling challenges of organizations with PB-scale data needs include Infinidat. Infinidat's innovative architecture blends dynamic random-access memory (DRAM) and flash caching layers on the front end, high-capacity HDDs on the back end, and deep-learning Neural Cache algorithms to enable its InfiniBox hybrid system to deliver most data at sub-millisecond latency from the fastest DRAM tier. Accessing data from DRAM enables InfiniBox to outperform many competing systems in terms of average latency, and storing colder data in cost-effective HDDs helps keep costs down. The newer Infinidat InfiniBox SSA system adds an all-solid-state option for organizations that require consistent sub-millisecond latency for every I/O.

# Infinidat Infinibox Platform Overview

Storage visionary Moshe Yanai founded Infinidat in 2011 with the goal of balancing performance, availability, and cost in a system that could address ever-escalating volumes of data. Yanai had previously architected the EMC Symmetrix system that helped establish the enterprise storage market and subsequently founded XIV, which IBM acquired in 2008 in sync with its shift to software-defined storage. Infinidat's InfiniBox platform takes a software-defined approach with the InfuzeOS operating system and commodity hardware. The original InfiniBox hybrid design employs innovative DRAM and SSD caching tiers on the front end to speed data reads and writes. Infinidat's Neural Cache deep-learning algorithms help optimize data placement and enable read-cache hit rates in excess of 90% from the fastest DRAM cache, backed by a lower-cost, higher-capacity SSD cache. The Infinidat InfiniBox hybrid system can outperform many competing arrays on average latency and offers a 100% availability guarantee with its active-active-active controller architecture and N+2 design. HDDs facilitate cost-effective petabyte-scale storage on the InfiniBox back end and offset the higher cost of the DRAM modules and flash-based SSDs to offer a lower price per GB than many competitive alternatives. Infinidat also employs time-stamped metadata, rather than data locks, to improve scalability.

Infinidat introduced the all-solid-state InfiniBox SSA in 2021 to address customer requests for an all-flash array (AFA) that would support consistent sub-millisecond latency on 100% of the I/O for their most demanding "Tier 0" applications. In the infrequent instances when the original InfiniBox hybrid system has to access data from HDDs on a cache miss, latency can exceed a millisecond; however, Infinidat designed the InfiniBox SSA to deliver sub-millisecond latency even if the system has to access data from the back-end SSDs. The InfiniBox SSA uses the same redundant hardware architecture, InfuzeOS operating system, enterprise-class data services, and management tools as the HDD-based InfiniBox, but it eliminates the SSD caching tier in favor of all-SSD back-end storage. Customers can mix and match the InfiniBox and the all-solid-state InfiniBox SSA, shifting and replicating data between them, to improve total cost of ownership.

The launch of the InfiniBox SSA II in April 2022 increased the CPU core count and cache memory to improve performance by 30%, provided an additional InfiniBand card to expand back-end storage bandwidth, and added support for 32Gb Fibre Channel networking. Infinidat says that customer telemetry data shows the InfiniBox SSA II can deliver latencies as low as 35 microseconds. With the introduction of the InfiniBox SSA II, Infinidat also added InfiniOps technology for AIOps, DevOps, and Kubernetes support.

InfiniBox systems offer a wide range of enterprise storage software functionality, including data compression and encryption, distributed dual-parity redundant array of independent

disks (RAID), thin provisioning, quality-of-service controls, synchronous and asynchronous replication, and immutable snapshots via Infinidat's InfiniSafe cyber-resilience technology. Policy-driven storage management can help ease administration, and Infinidat's InfiniMetrics telemetrics platform provides performance monitoring and analysis tools to assist customers with workload consolidation, capacity planning, and storage optimization. Infinidat's InfiniVerse leverages the InfiniMetrics telemetry data for cloud-based predictive analytics, support, monitoring, and reporting capabilities.

Installations of Infinidat storage systems can start at 250TB, but more typically, customers deploy at least 500TB and generally expand beyond 1PB. The most common use case is high-capacity primary storage for mission-critical applications and databases in the financial, telecommunications, energy, manufacturing, and healthcare industries. Although Infinidat designed the InfiniBox platform with a single block- and file-based stack, most customers use it for high-performance enterprise block storage. Infinidat makes the InfiniBox and InfiniBox SSA platforms available through traditional purchasing as well as its capacity on demand–based Elastic Pricing and FLX storage-as-a-service models. Customers get 100% availability and performance guarantees with Infinidat products that have a valid support services agreement. Infinidat also recently added InfiniSafe Cyber Storage guarantees, whereby enterprises and service providers can recover and restore data in a minute or less in the event of a cyberattack by using Infinidat's immutable snapshot technology.

Infinidat also offers an InfiniGuard purpose-built backup appliance based on the same architecture, InfuzeOS software, and management technology as the InfiniBox platform. Having a common management paradigm for primary and secondary storage can offer a significant advantage for customers. InfiniGuard supports global, inline, and variable-length deduplication and enables more than 50PB of effective capacity. Backup application integration includes Veritas NetBackup, IBM Spectrum Protect, Commvault, Veeam, Oracle RMAN Backup, and many other backup applications.

# The Business Value of Infinidat Infinibox

## Study Demographics

IDC conducted research to explore the value and benefits of organizations' using Infinidat InfiniBox to manage their storage operations. The project included seven in-depth interviews with organizations that were using InfiniBox hybrid arrays; two of those customers also had limited all-flash InfiniBox SSA deployments. Interviewed managers and executives all had experience with and knowledge about the benefits of Infinidat InfiniBox storage and responded to quantitative and qualitative questions about its impacts on their IT/storage operations, core businesses, and costs.

**Table 1** presents study demographics. The organizations IDC interviewed had an average base of 14,504 employees, indicating the involvement of several large companies in the study. This workforce was supported, on average, by an IT staff of 735 engaged in managing 272 business applications and supporting 1.17 million external users/customers. In terms of geographical distribution, three companies were based in the United States, with the remainder in Sweden, Finland, and Israel. Vertical markets represented included retail, informational technology, education, energy, and professional services.

**TABLE 1**  
**Firmographics of Interviewed Organizations**

|                                    | Range  | Average | Median   |
|------------------------------------|--|---------|----------|
| Number of employees                | 380 to 70,000  | 14,504  | 2,000    |
| Number of IT staff                 | 70 to 3,500  | 735     | 210      |
| Number of external users/customers | 200 to 4.0M  | 1.17M   | 3,400    |
| Number of business applications    | 50 to 800  | 272     | 160      |
| Revenue per year                   | \$40.0M to \$23.0B   | \$6.48B | \$425.0M |
| Countries                          | United States (3), Sweden (2), Finland, Israel                                     |         |          |
| Industries                         | Retail (2), informational technology (2), education, energy, professional services |         |          |

Source: IDC Business Value Research, November 2022

## Selection and Use of Infinidat InfiniBox

The organizations IDC interviewed described typical patterns for their ongoing use of Infinidat InfiniBox. They discussed their reasons for choosing it as a cost-effective platform to manage their storage infrastructure and operations. Interviewed companies noted the platform's exceptional price/performance advantage over competing solutions. They also called out the extensive range of workloads it supports without affecting customer support capabilities and appreciated the range of specific business needs they can accommodate. Other benefits they cited included ease of use in terms of dashboard and management functionality.

### Study participants made detailed comments on these and other benefits:

#### **Meets performance needs cost-effectively (North America, information technology):**

*"We had problems with certain workloads that existing commodity storage couldn't provide in terms of performance. They couldn't provide the necessary value for the price, so it was cost that made us look at Infinidat InfiniBox. We needed something that was faster and had better performance that was also in line with the cheaper commodity storage on the market."*

#### **Can run any workload whenever needed (EMEA, retail):**

*"They were one of the few vendors that said, 'We don't care what kind of workload you are running. We just run with what we've got.' ... All the other vendors were asking us a lot of questions about our workloads and whether we were going to change them in the future. They also needed to know all this to be able to support us going forward. They weren't really keen that we might change applications or workloads because then it would be really difficult to support us. But Infinidat just said we can run whatever we want, whenever we want it, and that was a really big game changer since we had used one of the larger storage companies previously."*

#### **Storage architecture that can handle a range of business needs (EMEA, retail):**

*"In reviewing next-generation offerings, we realized the cost was high compared to what we thought we could do if we went to an RFI/RFP process. The Infinidat InfiniBox architecture was very interesting. ... We went through an RFP process, and Infinidat was one of the few that could demonstrate the ability to solve all our business needs. And they came in at a price point that was significantly lower than the competition, so it was a slam dunk."*

#### **Cost-effective solution that is easier to manage (North America, professional services):**

*"The specific challenges were typical infrastructure, hardware life-cycle challenges with hardware maintenance costs versus the opportunity to refresh. A big part of it was the financials, as well as the ease of day-to-day storage management. Given the environment we replaced, we drastically simplified our storage environment by moving to a single management interface, so that played a big role."*

**Table 2** provides a snapshot of Infinidat InfiniBox usage and the IT environments of interviewed companies. On average, they had 8PB of storage capacity supporting 2,237 databases, 247 applications, and 5,988 internal end users. Especially noteworthy is the fact that InfiniBox supported a very substantial portion of the revenue base of interviewed companies (67%). Additional metrics are below.

**TABLE 2**  
**Organizational Usage of Infinidat InfiniBox**

|  | Average | Median |
|--|---------|--------|
| Number of PBs  | 8       | 6      |
| Number of arrays   | 6       | 5      |
| Number of databases  | 2,237   | 300    |
| Number of applications   | 247     | 140    |
| Number of internal users   | 5,988   | 525    |
| Percentage of revenue supported by applications supported by Infinidat InfiniBox | 67%     | 75%    |

Source: IDC Business Value Research, November 2022

## Business Value and Quantified Benefits

IDC's Business Value methodology evaluated and quantified the benefits that companies realized after adopting Infinidat InfiniBox as a highly cost-effective platform for their storage operations. Interviewed companies uniformly found that InfiniBox provided a robust infrastructure for more efficient storage management and significantly improved data compression, with high value at low cost. In addition, InfiniBox improved the efficiency of storage management and storage performance teams and increased the agility and responsiveness they require to deploy necessary resources for business use. It also minimized storage-related unplanned downtime to improve end-user productivity. These core storage infrastructure improvements collectively boosted business operations and results, with quantified financial gains as described in this paper.

### Study participants highlighted these and other significant benefits:

#### **Ease of management (North America, professional services):**

*"The biggest benefit is the ease of management. It just runs, and it's extremely reliable. We found basically everything the Infinidat InfiniBox sales team pitched to us was true. It works as advertised, which is huge."*

#### **Improved performance and ease of use (EMEA, retail):**

*"The benefit for us is ease of use and superior support. We have had these for around six years, and we've had zero incidents. Infinidat InfiniBox support proactively contacts our sourcing partner, highlighting problems in our SAN infrastructure or server infrastructure. I've worked in this business for 30 years, and I've never had that happen. The platform is exceedingly simple to manage."*

#### **Can scale capacity without worry (EMEA, retail):**

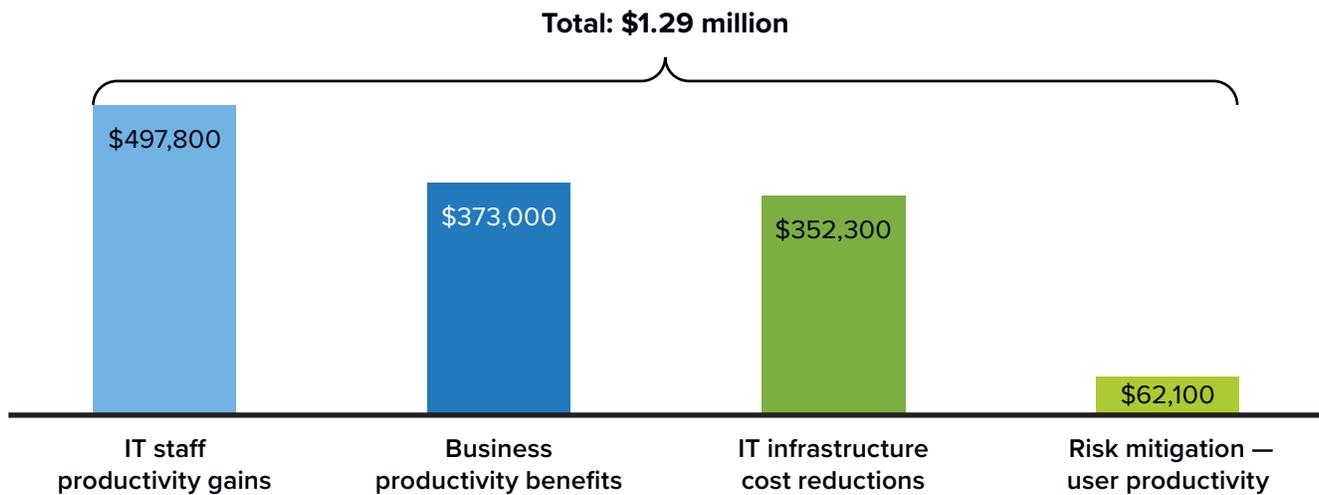
*"The cost efficiency of this solution made it possible for us to actually buy large enough systems to fit the performance and capacity needs. We have a very complex internal billing structure, which means I have to track every single krona that we spend. And because this is basically just one big bucket of storage and it's very cost-effective, we could buy larger systems and just keep provisioning the business. We removed the complex business model. There are no tiers of storage. They just consume storage. The compression ratio and the capacity are so good that they don't have to do much in the way of capacity planning."*

#### **Capacity-on-demand model eases expansion (North America, professional services):**

*"The capacity-on-demand model made it extremely easy to augment our capacity earlier this year, and it was much easier than before. It sailed through approvals due to the low cost. All we had to do was turn on a license and the capacity was available. Again, it's just so much easier to run on a day-to-day basis and reliable. Their support organization has been wonderful so far. We estimated at the time we were pitching the proposal that we projected saving \$3 million over five years."*

Based on interviews with the seven large users of Infinidat InfiniBox, IDC quantified the value that study participants will receive at an average annual benefit of \$1.29 million over five years (see **Figure 1**). IDC further calculated that adoption would yield benefits of \$166,900 per PB of storage capacity.

**FIGURE 1**  
**Annual Average Benefits per Organization**  
 (\$)



Source: IDC Business Value Research, November 2022

## Improved IT Storage Infrastructure

To meet the needs of digital transformation, enterprise organizations are now challenged to modernize their IT storage infrastructure to ensure optimal availability and reliability for their business-critical applications. The InfiniBox platform is designed to help companies meet these challenges by providing high performance coupled with high availability, cyber-storage resilience, and innovative management features. A key value proposition of InfiniBox is the ability to deliver robust price/performance ratios using a storage architecture that combines DRAM and SSD caching layers on the front end and a multi-PB capacity tier of HDDs to store data on the back end.

In their comments to IDC, interviewed organizations identified the core benefits that Infinidat InfiniBox brought to their organizations. They noted that consolidated storage systems are easier to manage and appreciated that they can avoid buying additional storage because the solution’s free over-provisioning enables them to avoid the need to backfill. They also called out the advantage of built-in tools related to data compression that help them keep storage costs low.

## Study participants commented in detail on these and other benefits:

### **Consolidated storage systems are easier to manage (EMEA, education):**

*“The complexity of handling all the hardware is gone. [Before Infinidat InfiniBox] we had multiple disks failing every day, so we had to take care of replacing them. The engineers had to work with third-party vendors to set up the contracts to have RMAs [return merchandise authorizations], and sometimes we needed new areas in the datacenter for space. We had to find which application needed to sit on which storage array and make a lot of allocation decisions because we had so many storage machines. ... Now, we have one machine in this datacenter, and it’s giving us a very good dashboard of status, performance, and capacity. There are fewer disk and hardware issues that we need to take care of with RMAs. Everything is just much easier. The dashboard is very easy to read; there are multiple APIs for automating.”*

### **Eliminates need to buy additional storage (EMEA, retail):**

*“The other systems had a limitation in over-provisioning, which means that you have to backfill with real physical storage capacity to be able to provision even more when it comes to over-provisioning. Infinidat InfiniBox has free over-provisioning, which means that we don’t have to backfill the system. They can track everything, so with that in mind and with the performance in mind, you don’t have to buy extra engines or more memory or more flash space to have a specific ratio. They have a fixed ratio, and it works perfectly for us. We probably saved around SEK 20 million [approximately US\$1.9 million] so far by not having to purchase more capacity, and we saved about 20 to 30 PBs.”*

### **Built-in tools help save storage costs (North America, professional services):**

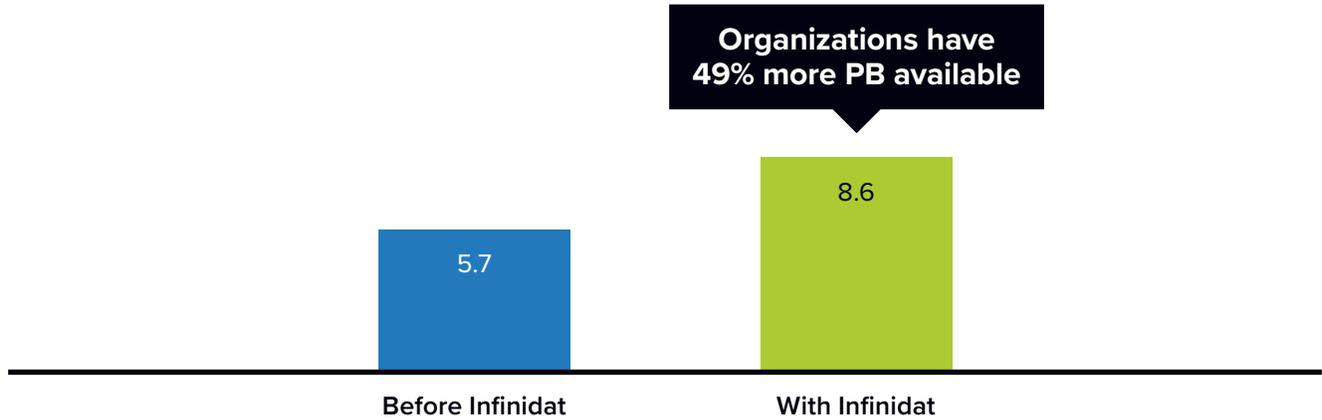
*“We use Infinidat InfiniBox’s capacity-on-demand pricing, and we get all the benefit of compression. And it [gives] us the ability to take snapshots at no cost to us.”*

### **Frees up time for business-oriented projects (North America, information technology):**

*“We were able to do other projects as a result of doing less management. It shortened our implementation time, for example, on data protection modernization initiatives.”*

IDC evaluated and quantified a series of post-adoption operational impacts, starting with storage capacity. Interviewed organizations reported that InfiniBox’s value for cost was attractive enough for them to buy more petabytes of storage that they could use to support business needs. **Figure 2** (next page) quantifies these storage capacity benefits, showing that after adoption, 49% more petabytes of capacity were available to support business needs and future growth.

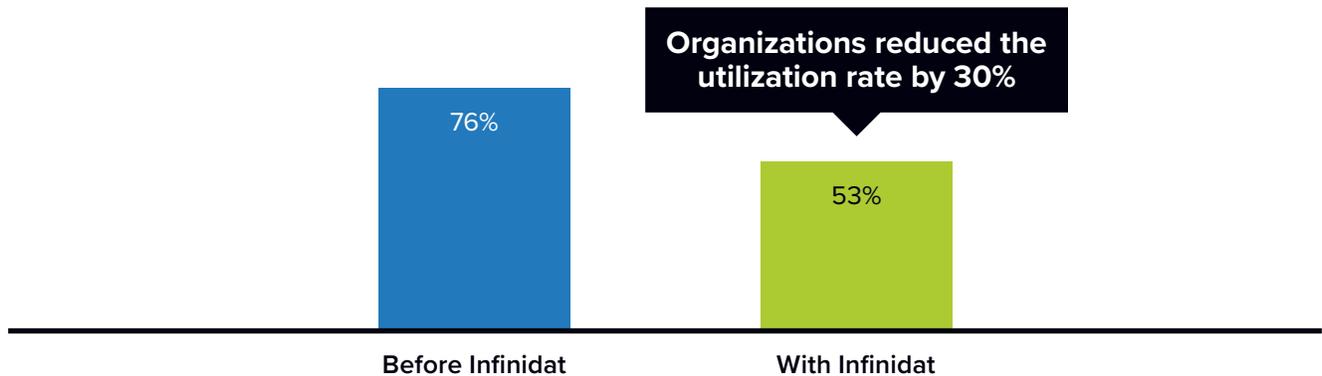
**FIGURE 2**  
**Storage Capacity**  
(Number of PB available)



n = 7; Source: IDC Business Value Research, November 2022

Study participants also identified improvements such as better storage system utilization. With InfiniBox snapshots and data reduction features, organizations found that they did not need to utilize as much of their storage as they did previously, thereby freeing up more capacity to support growing and changing workloads. As shown in **Figure 3**, interviewed organizations were able to improve their average utilization rates by 30% after adopting Infinidat InfiniBox.

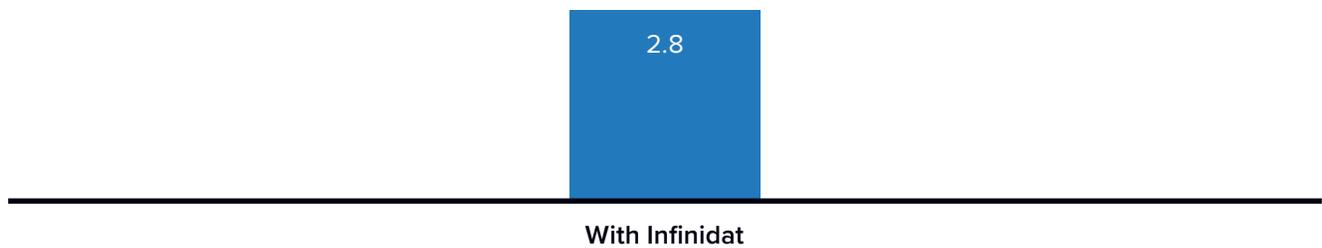
**FIGURE 3**  
**Average Utilization Rate**  
(%)



n = 7; Source: IDC Business Value Research, November 2022

IDC then examined improvements with respect to data reduction rates. The InfiniBox platform has implemented data reduction in a completely different way than traditional storage approaches. InfiniBox is designed to serve I/O at performance levels that can meet or surpass the performance of many competing hybrid and all-flash arrays by not compressing data in the extensive cache layer. Interviewed organizations reported seeing higher compression rates. **Figure 4** quantifies these improvements, showing that, on average, interviewed companies achieved a 2.8 data compression ratio after adoption.

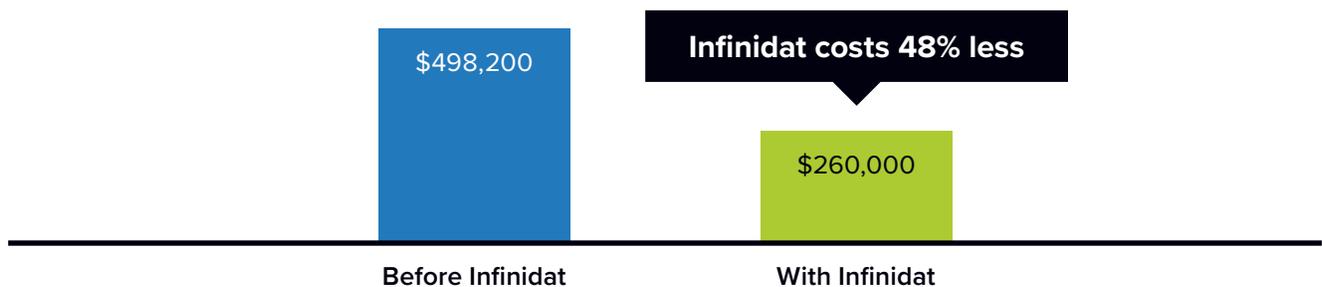
**FIGURE 4**  
**Data Reduction Impact**  
(Data compression ratio)



n = 7; Source: IDC Business Value Research, November 2022

Infinidat stresses cost-effectiveness as a major value proposition. The solution is designed to run on certified commodity components using a large cache tier with mainframe-like reliability at a fraction of the price of today's AFA and legacy storage products. Pricing includes three years of support and all software licensing. IDC confirmed this cost-effectiveness, with interviewed organizations noting that they could, on average, cut their infrastructure costs by nearly half (48%), as shown in **Figure 5**.

**FIGURE 5**  
**Storage Infrastructure Savings per PB, 5 Years**  
(\$, cost of Infinidat/other infrastructure)



n = 7; Source: IDC Business Value Research, November 2022

Another key aspect of InfiniBox’s value proposition is simplified management. InfiniBox employs a neural network–based caching approach, designed to optimize performance even when system capacity is maxed out. This functionality drives better productivity and lowers operating costs. Study participants reported that storage infrastructure teams were able to take advantage of streamlined and user-friendly storage management features to improve productivity.

IDC quantified storage team staff productivity among the seven interviewed InfiniBox customers. As shown in **Table 3**, average productivity increased significantly (48%) after adoption. These improvements translated into an average annual salary savings of \$255,100 for each organization.

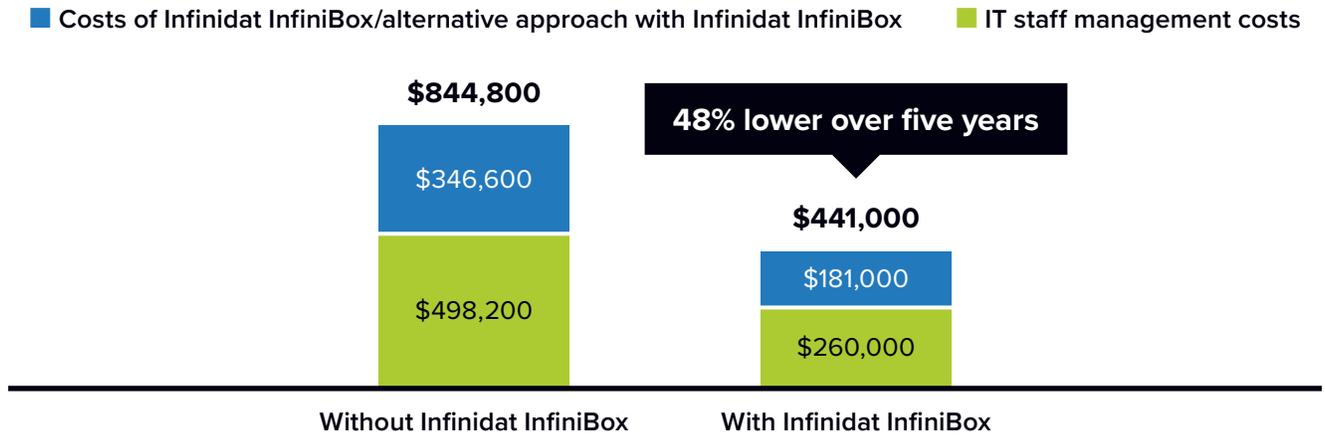
**TABLE 3**  
**Storage Management Staff Impact**

|  | Before Infinidat InfiniBox | With Infinidat InfiniBox | Difference | % Benefit |
|--|----------------------------|--------------------------|------------|-----------|
| Storage management, FTE equivalent per organization per year | 5.3                        | 2.8                      | 2.5        | 48%       |
| Equivalent value of staff time per year                      | \$533,800                  | \$278,900                | \$255,100  | 48%       |

Source: IDC Business Value Research, November 2022

IDC then looked at the total cost of operations over a five-year period, including both staffing savings and reduced infrastructure costs. Overall, the interviewed organizations reduced their operational costs for storage infrastructure by 48%, based on enhanced staff efficiencies and the use of cost-effective infrastructure (see **Figure 6**, next page), in comparison with the cost of alternative or legacy storage systems.

**FIGURE 6**  
**Cost of Operations per PB, 5 Years**  
 (\$)

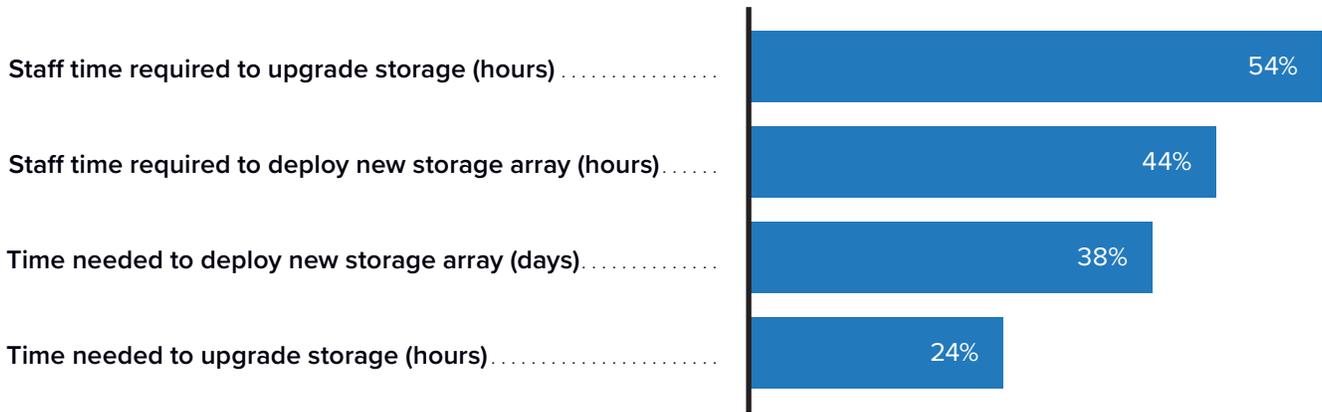


n = 7; Source: IDC Business Value Research, November 2022  
 For an accessible version of the data in this figure, see [Figure 6 Data](#) in Appendix 2.

Study participants also reported that InfiniBox offered greater agility. They noted that it was much easier and quicker to deploy new storage or upgrade capacity when needed. This kind of agility is particularly important in supporting the development and deployment of key business applications.

As shown in **Figure 7** (next page), after deployment, interviewed organizations reduced the staff time required to upgrade storage by 54% and lowered the staff time required to deploy new storage arrays by 44%. In addition, the time needed to deploy new storage arrays dropped by 38%, and the time needed to upgrade storage fell by 24%.

**FIGURE 7**  
**Storage Agility Impact**  
 (% quicker)



n = 7; Source: IDC Business Value Research, November 2022

IDC then drilled down on these storage team efficiencies, as shown in **Table 4**. After InfiniBox adoption, average productivity increased significantly (55%). These improvements translated into an average annual salary savings of \$253,800 for each organization.

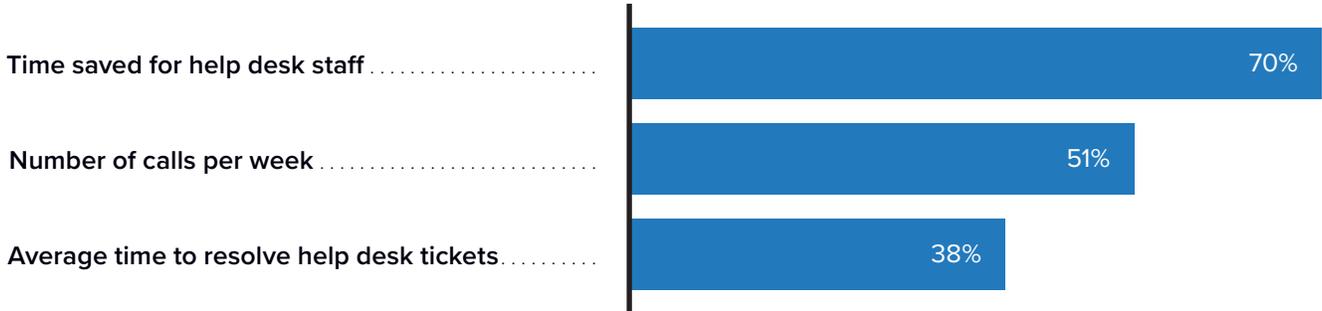
**TABLE 4**  
**Storage Performance Monitoring Staff Impact**

|  | Before Infinidat InfiniBox | With Infinidat InfiniBox | Difference | % Benefit |
|--|----------------------------|--------------------------|------------|-----------|
| Storage performance monitoring, FTE equivalent per organization per year | 4.6                        | 2.1                      | 2.5        | 55%       |
| Equivalent value of staff time per year                                  | \$426,500                  | \$208,700                | \$253,800  | 55%       |

Source: IDC Business Value Research, November 2022

More reliable performance also translated into less business disruption. Organizations noted that they saw fewer storage-related help desk calls and were more efficient in resolving reported problems with the InfiniBox platform’s robust management tools. As shown in **Figure 8** (next page), help desk staff spent 70% less time on calls after InfiniBox adoption. In addition, there were 51% fewer calls per week to manage, and the time to resolve calls plummeted by 38%.

**FIGURE 8**  
**Help Desk Impact**  
 (% improvement)



n = 7; Source: IDC Business Value Research, November 2022

## Business Improvements

Interviewed companies reported that InfiniBox-related improvements have led to positive benefits for their business operations and results. Improving storage performance and storage team productivity has paved the way for better agility, as described in previous sections, with attendant impacts on time to market and other metrics. Parlaying new efficiencies, storage teams can also pivot to work more on projects that directly support business operations. Combined, these benefits provide robust levels of support for business activities and operations. Other contributing factors include upgraded key performance indicators (KPIs) and lessening the productivity impact of unplanned downtime.

In addition to these across-the-board benefits, study participants called out specific business benefits. For example, they noted improvements in time to market and the ability to run their business analytics smoothly and efficiently. They also appreciated the added scalability to take on any size project or workload necessary to fully support changing business requirements.

### Study participants commented on these and related benefits:

**Faster time to market (EMEA, retail):**

*“We see more effective business operations because we have a much quicker time to market. People don’t need to wait because we are much more flexible.”*

**IT can focus on overall business needs (EMEA, education):**

*“Because of the fact that the storage is now a stable platform, no more time or energy is spent on all those efforts. So, whether it’s my team or on the other team, they can just focus on the overall business.”*

**Users have more capacity to work with (North America, professional services):**

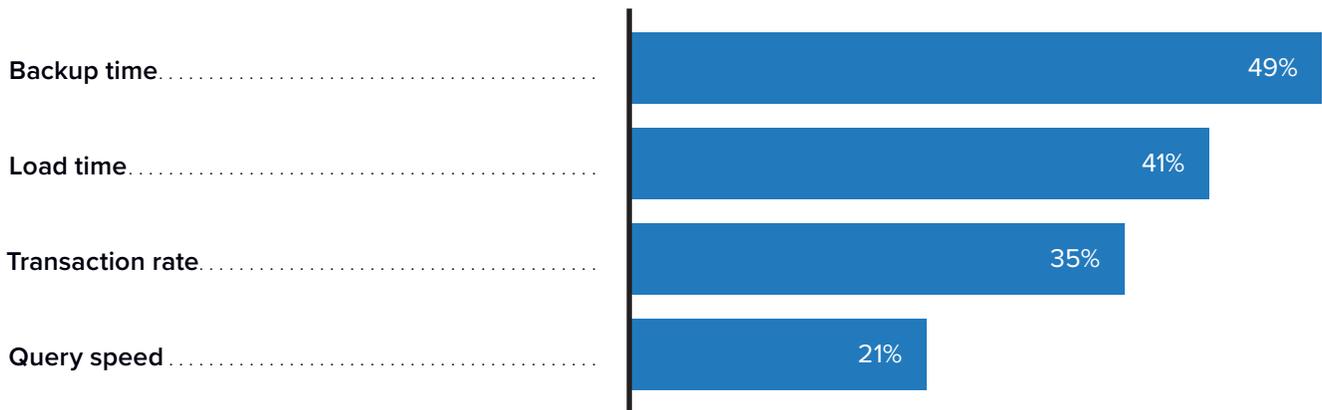
*“We have more people that now can run their analytics and things like that on these arrays because they can do proper testing. And because we have the same models for test arrays as we have for our production arrays, they will get a very good result or the result they want.”*

**Can accommodate any size project or workload (EMEA, retail):**

*“It’s a risk mitigation because before, when you get a large project showing up at the 11th hour, you get nervous because they always forgot to account for how well the operations and infrastructure team actually are able to deliver. We learned that this system will take whatever we throw at it with very rare exceptions. So today when they come, we say, ‘Go ahead and start and run your applications.’”*

IDC identified the performance impacts that Infinidat InfiniBox features offer in support of business operations. Interviewed companies reported significant improvements across a number of performance metrics. Study participants noted that higher performance has enabled their organizations to better access and use data. To quantify these benefits, IDC applied a series of KPIs. As shown in **Figure 9**, interviewed companies experienced the greatest gains in backup time (49%), load time (41%), and transaction rate (35%) after deployment of the InfiniBox platform.

**FIGURE 9**  
**Performance KPIs**  
 (% improvement)



n = 7; Source: IDC Business Value Research, November 2022

IDC then looked at how improved reliability affected unplanned downtime. Study participants reported that they have benefited from less operations-related downtime due to improved storage performance. As shown in **Table 5** (next page), both the frequency of disruptive events and the time to resolve them dropped substantially (67%). In turn, this led to an

89% improvement in end-user productivity and an annual productivity-based business value of \$66,900 for each organization.

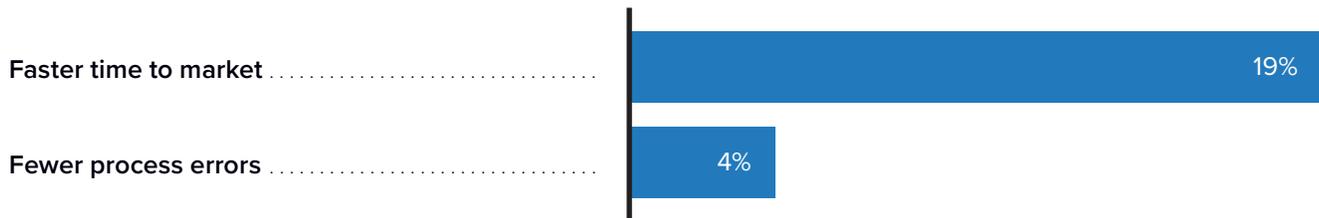
**TABLE 5**  
**Unplanned Downtime Impact**

|  | Before Infinidat InfiniBox | With Infinidat InfiniBox | Difference | % Difference |
|--|----------------------------|--------------------------|------------|--------------|
| Frequency per year                                     | 0.6                        | 0.2                      | 0.4        | 67%          |
| Time to resolve (hours)                                | 5.0                        | 1.7                      | 3.3        | 67%          |
| Hours of lost productivity time per employee per year  | 0.3                        | 0.04                     | 0.3        | 89%          |
| FTE impact, lost productivity due to unplanned outages | 1.1                        | 0.1                      | 1.0        | 89%          |
| Value of lost productivity per year                    | \$75,200                   | \$8,300                  | \$66,900   | 89%          |

Source: IDC Business Value Research, November 2022

IDC then drilled down to examine several business-related KPIs. Organizations reported a clear link between having the storage resources they need and improved marketplace agility. This agility also has helped them deploy applications and features and reduce business-related errors. As shown in **Figure 10**, companies moved 19% faster to market and had 4% fewer process errors after adopting Infinidat InfiniBox.

**FIGURE 10**  
**Business KPIs**  
(% improvement)



n = 7; Source: IDC Business Value Research, November 2022

**Table 6** shows operational cost impacts. Organizations reported that they have reduced their operational costs because, with Infinidat InfiniBox, they have benefited from having more scalable and cost-effective storage, as described in previous sections. Using its business value methodology, IDC calculated the reduction in operational costs at \$320,000, or about \$41,600 per PB.

**TABLE 6**  
**Operational Costs Impact**

|   | Per Organization | Per PB   |
|---|------------------|----------|
| <b>Business impact — reduced operational cost</b> |                  |          |
| Reduction in operational costs                    | \$320,000        | \$41,600 |

Source: IDC Business Value Research, November 2022

The final area that IDC evaluated was end-user productivity. Business impacts are foundational and are best represented at the end-user level. Study participants reported that their end users are more productive because they have a more reliable and scalable storage platform for their day-to-day tasks, fostering improved application performance and better resource agility. **Table 7** quantifies these benefits, showing average productivity gains of 1.1%, resulting in an annual business value of \$93,800.

**TABLE 7**  
**End-User Impact**

|   | Per Organization |
|---|------------------|
| Number of users impacted                                  | 123.8            |
| Average productivity gains                                | 1.1%             |
| Productive hours gained per organization                  | 2,520            |
| Productive hours gained per user                          | 0.4              |
| End-user impact, FTE equivalent per organization per year | 1.3              |
| Value of end-user time                                    | \$93,800         |

Source: IDC Business Value Research, November 2022

## ROI Summary

**Table 8** presents IDC’s return-on-investment analysis for study participants’ use of Infinidat InfiniBox. IDC projects that interviewed companies will achieve five-year discounted benefits worth an average of \$4.72 million per organization (\$613,100 per PB) through improved storage performance, IT team productivity gains, and better business operations. These benefits compare with total five-year discounted costs of \$1.80 million per organization (\$234,300 per PB). These levels of benefits and investment costs are projected to result in an average ROI of 162%, with a break-even point occurring in 11 months.

**TABLE 8**  
**5-Year ROI Analysis**

|                         | Per Organization | Per PB    |
|-------------------------|------------------|-----------|
| Benefit (discounted)    | \$4.72M          | \$613,100 |
| Investment (discounted) | \$1.80M          | \$234,300 |
| Net present value (NPV) | \$2.92M          | \$378,800 |
| ROI (NPV/investment)    | 162%             | 162%      |
| Payback (months)        | 11 months        | 11 months |
| Discount factor         | 12%              | 12%       |

Source: IDC Business Value Research, November 2022

# Challenges/Opportunities

Infinidat InfiniBox offers a differentiating customer experience with its innovative petabyte-scale storage designed to cost-effectively address high performance and availability requirements and ease scaling and management. The all-solid-state InfiniBox SSA II uses the same software-defined architecture, InfuzeOS operating system, and management tools to create expansion opportunities for customers that have an all-flash mandate or require consistent sub-millisecond latency for all I/O with especially demanding workloads. Based on the same technology as the InfiniBox systems, Infinidat's InfiniGuard purpose-built backup appliance provides customers with the final piece to meet their primary and secondary storage needs under a common management platform. Customers could further benefit if Infinidat can exploit denser and less costly flash and emerging memory technologies to potentially lower the price per GB of the InfiniBox and InfiniBox SSA models, especially to address data-intensive analytics and AI workloads.

## Conclusion

Enterprises and service providers that need to refresh or expand their storage infrastructure to consolidate workloads and address next-generation data-intensive applications such as analytics and AI need high-performance storage that can handle petabytes of data. The cost-effectiveness of the storage infrastructure takes on added importance in a challenging economic environment. Infinidat offers a portfolio of storage products that use an innovative software-defined architecture to address demanding performance, availability, and scalability requirements on low-cost commodity hardware that customers can manage with a common set of tools. Infinidat's InfuzeOS operating system and deep-learning Neural Cache algorithms provide high-speed access to most data from a high-performance cache that includes DRAM on all models and an added secondary flash-based caching tier on hybrid systems with HDDs.

IDC conducted in-depth interviews with seven customers that have multi-PB-scale installations of Infinidat InfiniBox hybrid arrays to determine the business value and benefits of using the storage systems. IDC's analysis found that the average annual benefit per organization was \$1.29 million, or \$166,700 per PB. On average, the companies achieved a payback on their investment within 11 months and a 162% five-year ROI through their deployment of cost-effective infrastructure that enabled higher performance, better resource utilization, more efficient storage management, and a reduction in unplanned downtime.

# Appendix 1: Methodology

IDC's standard Business Value/ROI methodology was utilized for this project. This methodology is based on gathering data from organizations currently using Infinidat InfiniBox as the foundation for the model.

## Based on interviews with organizations using InfiniBox, IDC performed a three-step process to calculate the ROI and payback period:

- Gathered quantitative benefit information during the interviews using a before-and-after assessment of the impact of using Infinidat InfiniBox. In this study, the benefits included staff time efficiencies, development productivity gains, reduced costs associated with risk, and higher revenue.
- Created a complete investment (five-year total cost analysis) profile based on the interviews. Investments go beyond the initial and annual costs of using Infinidat InfiniBox and can include additional costs related to migrations, planning, consulting, and staff or user training.
- Calculated the ROI and payback period. IDC conducted a depreciated cash flow analysis of the benefits and investments for the organizations' use of Infinidat InfiniBox over a five-year period. ROI is the ratio of the net present value (NPV) and the discounted investment. The payback period is the point at which cumulative benefits equal the initial investment.

## IDC bases the payback period and ROI calculations on a number of assumptions, which are summarized as follows:

- Time values are multiplied by burdened salary (salary + 28% for benefits and overhead) to quantify efficiency and manager productivity savings. For purposes of this analysis, based on the geographic locations of the interviewed organizations, IDC has used assumptions of an average fully loaded salary of \$100,000 per year for IT staff members and an average fully loaded salary of \$70,000 per year for non-IT staff members. IDC assumes that employees work 1,880 hours per year (47 weeks x 40 hours).
- The net present value of the five-year savings is calculated by subtracting the amount that would have been realized by investing the original sum in an instrument yielding a 12% return to allow for the missed opportunity cost. This accounts for both the assumed cost of money and the assumed rate of return.
- Because IT solutions require a deployment period, the full benefits of the solution are not available during deployment. To capture this reality, IDC prorates the benefits on a monthly basis and then subtracts the deployment time from the first-year savings.

*Note: All numbers in this document may not be exact due to rounding.*

# Appendix 2: Supplemental Data

The table in this appendix provides an accessible version of the data for the complex figure in this document. Click “Return to original figure” below the table to get back to the original data figure.

## FIGURE 6 DATA

### Cost of Operations per PB, 5 Years

|  | Without Infinidat InfiniBox | With Infinidat InfiniBox |
|--|-----------------------------|--------------------------|
| IT staff management costs  | \$498,200                   | \$260,000                |
| Costs of Infinidat InfiniBox/alternative approach with Infinidat InfiniBox | \$346,600                   | \$181,000                |
| <b>Total</b>   | <b>\$844,800</b>            | <b>\$441,000</b>         |

n = 7; Source: IDC Business Value Research, November 2022

[Return to original figure](#)

# About the IDC Analysts



## **Harsh Singh**

**Senior Research Analyst, Business Value Strategy Practice, IDC**

Harsh V. Singh is a senior research analyst for IDC's Business Value Strategy Practice, responsible for developing return-on-investment and cost-savings analysis on enterprise technological products. Harsh's work covers various solutions that include datacenter hardware, enterprise software, and cloud-based products and services. Harsh's research focuses on the financial and operational impact these products have on organizations that deploy and adopt them.

[More about Harsh Singh](#)



## **Carol Sliwa**

**Research Director, Infrastructure Systems, Platforms and Technologies Group, IDC**

Carol Sliwa is a Research Director for Storage Systems in IDC's Enterprise Infrastructure Practice. Her core research area spans block, file, and object storage, with a special focus on the storage of unstructured data. With more than 25 years of experience as a technology journalist, including 13 years covering enterprise storage, Carol gained extensive insight into the ways in which the industry has adapted systems over time to address the evolving needs of IT customers.

[More about Carol Silwa](#)



## **Dave Pearson**

**Research Vice President, Infrastructure Systems, Platforms and Technologies Group, IDC**

Dave Pearson is Research Vice President for Storage and Converged Systems practice within IDC's worldwide infrastructure research organization. He also oversees IDC Canada's Infrastructure Solutions research practice. Dave manages a team of analysts that cover both research domains. On the worldwide infrastructure research side, he and his team are responsible for IDC's storage, integrated, hyperconverged, and composable systems and platforms. This includes storage for performance-intensive use cases like high-performance computing, artificial intelligence, and analytics. It also includes cloud-enabled infrastructure and infrastructure used for cloud deployments. On the Canadian side, he and his team are responsible for research on compute, storage, networking, security, as well as contributing to edge, cloud, cognitive, and infrastructure software research.

[More about Dave Pearson](#)

# Message from the Sponsor

The logo for Infinidat, featuring the word "INFINIDAT" in white, uppercase, sans-serif font, centered within a solid purple rectangular background.

Infinidat is the storage solution standard in the enterprise, delivering industry-leading, innovative storage platforms that meet today's most demanding workloads. InfuzeOS powers our patented Neural Cache, with its deep-learning technology, enabling higher real-world application capacity and performance at scale within a smaller, greener footprint by reducing power usage by up to 42% per effective petabyte.

Infinidat has an established history of providing certainty to our customers when it comes to performance, availability, and cyber resilience. We offer an outstanding portfolio of best-in-class, storage-based solutions for those seeking the best in primary storage, modern data protection, DR/BC, and cyber resilience. InfiniSafe technology provides strong cyber resilience capabilities across the portfolio, and Infinidat solutions are backed by the industry's strongest guarantees for availability, performance, and cyber storage resilience. Traditional and consumption-based procurement models provide the best options to meet the capex and opex requirements of businesses today.

**To speak to us further about creating a compelling TCO/ROI proposal for your organization, please contact us at [info@infinidat.com](mailto:info@infinidat.com).**



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