Vendor Profile

INFINIDAT: Seven-Nines Storage with Commodity Hardware

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IDC OPINION

Datacenter economics are currently affected by a couple of fundamental and contrasting drivers, forcing end users to find their way in a more complex environment than ever – with an increasing amount of data to deal with and declining or, at best, stable resources at their disposal.

Digital transformation and the emergence of new workloads such as Big Data, the Internet of Things (IoT), and mobile applications are putting pressure on today's datacenter, while the challenges that IT departments used to wrestle with (such as siloed environments, management complexity, and shrinking budgets) have increased.

This situation has encouraged storage vendors to come up with innovative solutions. Flash storage, integrated systems, and software-defined storage (SDS) are disrupting the datacenter, each of them offering an efficient solution to some challenges but unable to solve multiple problems. As a result, storage buyers often find themselves struggling between different trade-offs such as low cost versus enterprise-grade reliability, or high performance versus high scalability.

INFINIDAT aims to solve the trade-off issues between cost, capacity, performance, and enterprise-grade reliability, providing a highly scalable, low-cost hybrid storage system running on commodity hardware, all featuring a hard-to-match seven nines of data availability.

In particular, IDC believes the ability to maintain high resiliency and performance standards even at maximum capacity is becoming fundamental to cope with the challenges brought about by digital transformation and 3rd Platform workloads. In fact, enterprise-grade reliability at commodity-level price is exactly what storage managers are required to deliver.

INFINIDAT has succeeded in breaking off the typical datacenter's trade-offs by merging the advantages of SDS architectures (i.e., lower cost, higher scalability, and ease of use) with enterprise-level resiliency, once only the prerogative of expensive, complex proprietary systems.

This has enabled the company to reach a unique "cost to performance" positioning, setting new industry standards on constant reliability at a high scale while also lowering costs.

IN THIS VENDOR PROFILE

This IDC Vendor Profile analyzes INFINIDAT's strategy and portfolio and examines how the company has reached its competitive advantages in terms of reliability and high scalability in an increasingly challenging datacenter environment.

SITUATION OVERVIEW

Enterprise data is quickly becoming one of INFINIDAT's most valuable assets, with IT for the first time actively involved in value creation.

This has been prompted by the emergence of new workloads such as Big Data and IoT that, coupled with more stringent retention policies on personal data, have impacted the amount of data to be processed and kept by a company.

This is well reflected on IDC's annual European datacenter survey, where IDC interviewed 500 companies based in major European countries about their attitudes toward their datacenter infrastructure.

In the 2016 survey, new workloads became an important force of change in European datacenters for the first time. When respondents were asked to rank their top 3 challenges in terms of storage infrastructure, "We are adding new data sources (e.g., sensor-generated data, machine-generated data, web 2.0 data, etc.)" was regarded as a top 3 challenge by 26% and number 1 by about 9%, in the third position after "running out of capacity" and "need to improve IT staff productivity."

Moreover, the real impact of this emerges when comparing how the same response featured in the previous year's survey, in which "adding new data sources" was chosen by 22% and had the last spot as number 1, chosen by only 6% of respondents.

Such jump proves that new workloads are rapidly spreading over the datacenter, taking on more storage space and requiring high performance and reliability when processed through Big Data tools and real-time analytics.

In light of new, more compelling needs from storage, the old challenges that IT departments used to wrestle with have increased.

Storage systems in particular are required to keep up with capacity growth while maintaining performance predictability, ease of use, and without increasing cost exponentially.

New solutions such as flash storage, integrated systems, and SDS are providing efficient solutions to many of these challenges but sometimes at the expense of others, and it becomes hard for IT managers to find the right solution without incurring unwanted trade-offs.

Taking a second glance at IDC's survey, the other main challenges have remained the same:

- Running out of capacity (which received even higher consensus than in 2015)
- Improving IT staff productivity
- Complexity in hardware integration
- Complex storage infrastructure management

FIGURE 1

Top 3 Challenges in Storage Infrastructure

Q.   What are the top 3 challenges that your company experienced with regard to your storage infrastructure requirements?
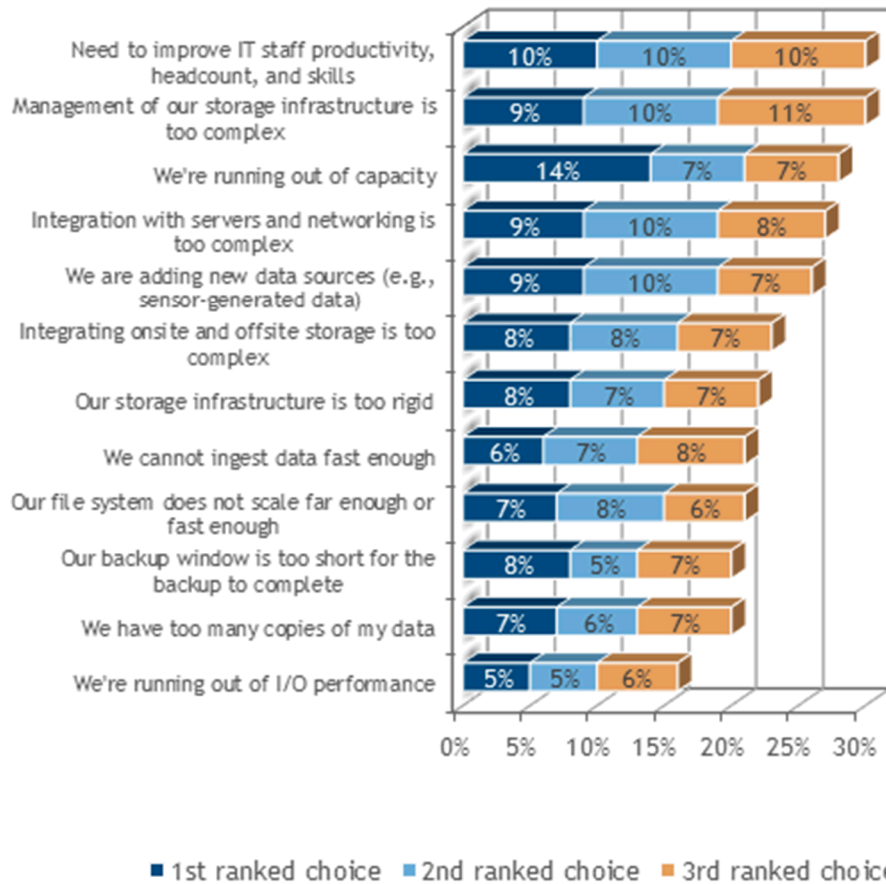
Source: IDC, 2016

Complexity in the datacenter space is increasing, which keeps IT staff busy with integrating old and new systems or with mundane tasks that are not automated enough.

Legacy storage systems — though often proven trustworthy when it comes to enterprise-grade reliability, hardware-defined as they are — have triggered the emergence of the siloed and complex datacenter environment that many storage buyers are currently wrestling with. Moreover, they often struggle to keep pace with growing capacity needs, either through scalability issues or experiencing performance degradation when scaling.

In response to this situation, newer architectures based on the SDS paradigm, where the software (often open source) runs on commodity hardware, are naturally easier to deploy and born to scale, and therefore better suited to meet the flexibility requirements and low-budget constraints of IT departments.

According to IDC's 2016 survey, scalability was the second most important factor when purchasing a flash storage system, just below performance and above total cost of ownership (TCO) and $/GB. This shows that scalability in business-critical, primary workloads is quickly becoming a fundamental requirement.

However, as many end users have experienced, SDS systems can be hard to fine-tune to match the performance and availability required.

The end result of a do-it-yourself approach is an exploding, unbudgeted amount of time and resources needed to meet the enterprise requirements, eventually turning SDS investment into a poor one. In fact, respondents lamented that SDS systems are "hard to deploy" (34%) while also fearing "vendor support concerns" (33%).

The reality is that SDS systems are indeed a good solution offering scalability, low cost, and flexibility. Although they can run on commodity hardware, they still have to be fine-tuned to meet performance and availability needs, so as to fully appreciate their cost and performance benefits. Otherwise, users will have to trade-off between low-cost, scalable storage and expensive, siloed, but more reliable legacy systems.

INFINIDAT aims to solve the trade-off issues between cost, capacity, performance, and enterprise-grade reliability for users, providing a highly scalable, low-cost hybrid storage system running on commodity hardware, and featuring seven nines of data availability.

Company Overview

INFINIDAT was founded in 2011 by Moshe Yanai, who led the development of EMC Symmetrix and later co-founded the Israeli start-up XIV (acquired by IBM in January 2008).

The company shipped its first product in late 2013. With 400 employees worldwide, it closed 2Q16 with over 100% year-over-year growth in sales. INFINIDAT prides itself in having filed 180 patents for its product, InfiniBox. Its target verticals are healthcare, utilities, service providers, and financial institutions.

The company entered the European market in mid-2014, setting its European headquarters in London and opening sales offices in nearly every European country.

InfiniBox, INFINIDAT's hybrid storage appliance, comes in three sizes:

- InfiniBox F2000: scales up to 500TB with over 500,000 IOPS
- InfiniBox F4000: scales up to 1PB with over 750,000 IOPS
- InfiniBox F6000: scales up to 2.75PB with over 1,000,000 IOPS

All InfiniBox models support SAN and NAS protocols. They can be integrated with OpenStack and VMware and feature Host PowerTools, INFINIDAT's proprietary software management tool, as well as a real-time performance monitoring tool (InfiniMetrics).

Company Strategy

InfiniBox meets cost and performance needs through its seven nines of availability, without degrading its performance when scaling:

- **High performance.** INFINIDAT's capability of blending flash with disc, in addition to a data distribution architecture that uses all drives all the time and a very large flash cache, can hit over 1,000,000 IOPS with more than 12GB/s throughput. This enables INFINIDAT to match or exceed the performance of some all-flash arrays while still deploying a mix of flash and HDD, making it more competitive in terms of price.

- **High scalability.** InfiniBox scales to over 5PB effective capacity (2.7PB usable capacity before compression) in a single rack.

- **High availability.** InfiniBox guarantees seven nines of availability (equivalent to less than three seconds of unplanned downtime per year). So high a reliability is unusual in the storage industry and well beyond the industry standard of five nines. The importance of this becomes known especially when compared with its high level of scalability. INFINIDAT's competitive advantage is the ability to preserve high availability in highly scalable environments, avoiding performance degradation due to "a storage system's undocumented features" popping up when scaling. Such combination of high availability and efficient scalability looks appealing to service providers, which need to offer excellent service, real-time scalability, and competitive $/GB pricing.

- **Commodity hardware optimized for reliability**. The deployment of commodity hardware enables a more competitive pricing in the market. However, as previously mentioned, it has the potential to create a compromise between cheaper hardware and enterprise-grade reliability. Any hardware needs testing and fine-tuning to unlock the software potential, and seldom do end users have the resources to invest in integrating hardware by themselves. For this reason, INFINIDAT lab-tests each hardware component to track down failure rates at different levels of scalability, offering end users the same price advantage of commodity hardware with enterprise-grade level of reliability. This also enables a quick and easy initial setup.

- **Ease of use.** Over the past decade, storage has had problems with manageability. Complex management of storage infrastructure is a common complaint from end users. Therefore, it is remarkable that InfiniBox's "granular performance monitoring, ease of use, and straightforward manageability" are some of the most valued characteristics for Brightsolid, one of INFINIDAT's clients. InfiniBox features Host PowerTools – the company's proprietary management software – to automate storage setup and provisioning, and InfiniMetrics, a performance monitoring and analysis system enabling constant and granular visibility at any given point in time.

- **Supporting an open and less siloed datacenter.** InfiniBox supports both file and block storage. It also natively integrates with OpenStack, hence it can support most workloads from a single platform.

FUTURE OUTLOOK

In an increasingly challenging datacenter environment – fiddled by trade-offs between cost and performance, or capacity and reliability – INFINIDAT strikes the right balance to help storage buyers gain savings and reach their desired quality of service.

While dichotomy between high-end and midrange storage still persists in today's datacenters, causing numerous silos of architectures to be too complex to manage, the company has succeeded in merging the advantages of SDS architectures (i.e., lower cost, higher scalability, and ease of use) with enterprise-level resiliency, once only the prerogative of expensive and complex proprietary systems.

This has enabled INFINIDAT to reach a unique "cost to performance" positioning, setting new standards on constant reliability even at a high scale while also lowering costs. This has the potential to break down many of the trade-offs between price and performance storage buyers are often being forced into.

ESSENTIAL GUIDANCE

Advice for INFINIDAT

If not well exploited, InfiniBox's virtues can also be its limitations. To maximize its competitive advantages, INFINIDAT should:

- **Broaden its reach.** Being particularly good in environments where both scalability and reliability are needed is an excellent gateway to customers, but it can be perceived as a niche product by some mainstream storage buyers. A good focus on channel and channel training can help INFINIDAT increase its awareness in companies that are not currently experiencing such needs but are just setting out with their digital transformation strategies.

- **Lock the competitive advantage.** High-capacity requirements are becoming more ubiquitous and, with flash technology getting cheaper and more advanced, traditional AFA players are becoming increasingly capable to address capacity needs as well as performance, while leveraging the lower TCO "by-product" of an AFA system. Given the high trust that AFA systems have been able to achieve in the market, INFINIDAT should plan in advance to defend its competitive advantage in the future through feature enhancement and targeted marketing activity, since even the best competitive advantage can be eroded over time.

- **Extend support for object storage across the portfolio.** As more companies are turning to object storage to lower costs (37%) and simplify storage management (30%), object storage has started expanding its reach in the European datacenter (and outside the traditional secondary storage workloads).

- **Focus on the peculiarities of local markets.** In Europe, INFINIDAT's competitive advantages are well suited for the service provider segment, which is set to become stronger in the region due to the newly introduced EU GDPR regulation and be targeted by new and legacy vendors alike. Gaining an edge in this segment is difficult, but there is strong potential, given the growth in cloud and enterprises' willingness to look at service providers' infrastructure strategies when setting out their own strategies.

LEARN MORE

Related Research

- *IDC's Worldwide Enterprise Storage Tracker, 1Q16*

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