



VENDOR PROFILE

Proven HFA Vendor Nimble Storage Achieving Rapid Success in the AFA Market

Eric Burgener

IDC OPINION

Flash has permeated enterprise storage in small, medium-sized, and large enterprises as well as among webscale customers like cloud and service providers. It is available in a variety of different system architectures, including internal storage, hyperconverged and converged platforms, and shared storage arrays. Revenue driven by shared storage arrays, of both the hybrid flash array (HFA) and the all-flash array (AFA) type, is much larger than from other segments today and will continue to dominate enterprise storage spend through at least 2020. Customers purchasing flash-optimized shared storage arrays prize them for their performance, enterprise-class data services, and the efficiencies of centralized management. As the flash-optimized array market has matured, it is becoming increasingly clear that vendors that can offer a range of flash-optimized options, including both HFA and AFA platforms, are better able to meet the wide range of customer requirements than those vendors that can only offer one or the other. Vendors that share a common management environment and use a common set of data services across their HFA and AFA solutions bring significant management advantages to the table, giving customers more options to cost-effectively meet their performance and capacity requirements across a range of enterprise storage workloads. Nimble Storage has been one of the more successful HFA vendors over the past six years, with well over 8,500 customers across Fortune 5000, service providers, and midsize enterprises, and in early 2016, it entered the AFA market with a very competitive offering that runs the same, mature Nimble OS as the company's proven HFA platforms. As customers consider how best to leverage flash in their general-purpose storage infrastructures, overarching strategic objectives must be considered, namely:

- To meet the increasing storage performance requirements of datacenter workloads, what is the best way to integrate flash into our storage infrastructure?
- Should primary workloads run on a dedicated storage platform or should primary and secondary workloads be mixed for management efficiencies?
- How will disaster recovery for mission-critical workloads be cost-effectively handled?
- Should we be consciously winnowing down the number of enterprise storage providers with which we deal?

This IDC Vendor Profile summarizes the state of the flash-optimized enterprise array market and then takes a closer look at Nimble Storage as one of the market leaders in this space.

IN THIS VENDOR PROFILE

This IDC Vendor Profile examines Nimble Storage, an enterprise storage vendor offering purpose-built, flash-optimized all-flash arrays (AFAs) and hybrid flash arrays (HFAs). Nimble Storage's offerings include the AF Series and CS Series – enterprise-class general-purpose storage platforms that share

a highly flash-optimized design, complement each other well to comprehensively handle both primary and secondary storage workloads, include a suite of common enterprise-class data services, and leverage cloud-based predictive analytics for high management efficiencies and system availability. This IDC Vendor Profile provides a high-level discussion of the evolving AFA and HFA markets as well as Nimble Storage's technology offerings, business and technical value propositions, target markets and customers, and go-to-market strategies.

SITUATION OVERVIEW

Enterprise storage has perennially required high performance, particularly for workloads that have been directly related to key business metrics such as revenue generation, customer service, and how quickly new products and services can be brought to market. In the mid-2000s, storage vendors first began to leverage flash media in enterprise-class storage arrays to boost performance. In that time frame, flash was typically added as a caching (i.e., nonpersistent) tier to existing arrays to increase read performance. Nimble Storage was one of the first vendors to ship an enterprise-class array that had been purpose-built with flash storage in mind, resulting in a highly flash-optimized array leveraging both flash and spinning disk media in a hybrid design to provide a cost-effective, high-performance general-purpose array. The company's first system was the CS200 Series, an HFA that shipped in 2010.

Enterprise customers were eager to get the performance boosts associated with flash and began to buy these HFAs. An increasing use of virtualization in this time frame, as well as the general benefits of lower latency and higher throughput relative to hard disk drive (HDD)-based systems, were driving the strong interest in HFAs. Intelligent caching and tiering algorithms allowed systems with only a small percentage of flash media (which during this time frame was still generally 5-10 times the cost of 15,000rpm hard disk drives on a cost-per-gigabyte [GB] basis) to deliver significantly better performance at what was actually a reduced price per gigabyte (due to the mix of 7,200rpm SATA HDDs and flash). These systems often included data services necessary in mixed enterprise workload environments like snapshots and replication.

Other vendors quickly entered this market space as well; some by flash optimizing their existing arrays to use flash more efficiently, and others by introducing new platforms built from the ground up with flash in mind. By 2015, the HFA market had grown to \$10.8 billion in revenue, making up 41.7% of the overall external enterprise storage market's \$25.9 billion in revenue that year. All HDD-based array revenue was shrinking rapidly and being replaced by HFAs as well as a new class of systems called AFAs that used only flash media – no spinning disk. The first AFAs shipped in 2011 and were typically smaller-capacity systems purchased for a single application that required the highest performance, regardless of cost. HFAs, meanwhile, were in many cases being purchased as direct replacements for legacy storage running mixed workloads, making them the new enterprise storage workhorse.

Flash costs were plummeting rapidly, however, and AFA revenue was growing at an even faster rate than HFA revenue (which was likewise significantly outpacing growth of the overall enterprise storage market). By 2014, dropping flash costs were encouraging some customers to purchase AFAs for a different use case – mixed workload consolidation – than the original "dedicated application" one. AFA vendors added capabilities like increased capacity, enterprise-class data services, and scripting interfaces to their arrays to allow them to be more easily integrated into datacenter workflows as a general-purpose storage platform. Flash costs were still higher than spinning disk, though, and even customers that were using AFAs for mixed workload consolidation were generally only using them with what they considered to be "primary" storage applications. Less performance-sensitive but more cost- and capacity-conscious "secondary" workloads were generally hosted on separate platforms.

As these markets developed, customers that wanted a dedicated mixed primary storage platform could consider either AFAs or HFAs, while those that wanted to cost-effectively consolidate both primary and secondary workloads on a single platform for centralized management chose HFAs. Management software that allowed particular workloads to be "locked into" flash on HFAs ensured that those applications that needed all-flash performance all the time could get it on a hybrid, while less performance-sensitive applications could be much more cost-effectively hosted on spinning disk media. HFAs also offered easier data protection and disaster recovery options, enabling replication between systems with a more cost-effective storage option available at a remote site that could still provide all-flash performance for selected applications when necessary.

As user preferences evolved, what became clear was that a vendor that only offered AFAs or HFAs but not both was at a significant disadvantage in competing against vendors that had both. AFA revenue is growing faster than HFA revenue, but even by 2020, AFA revenue will only be \$7.74 billion compared with HFA's \$11.91 billion that same year (out of a total \$26.3 billion for the external enterprise storage market as a whole). For most IT organizations, somewhere from 20% to 30% of their capacity is considered primary storage, with the remainder being secondary storage (less latency-sensitive applications, copies of primary data, backups, disaster recovery, archives, etc.). The need to accommodate the much higher secondary storage capacities is what has kept HFA revenue consistently higher than AFA revenue, but AFAs will be driving more and more primary storage spend each year.

As these markets develop, there is one other consideration rating high on end-user purchase criteria: a simplified environment. Customers buying an AFA from a vendor that only offers that type of platform will clearly need to buy another platform for their secondary storage. This means a separate vendor and a separate management interface. When a vendor offers both types of platforms, particularly when the platforms can all be managed from a single pane of glass with a common set of data services and management capabilities, this offers good options for customers. When disaster recovery is a requirement, customers may want to place an AFA at a primary site for primary workloads but replicate from that system to a less expensive HFA at a remote site. Dedicated AFA vendors typically only support replication between their AFAs, requiring some kind of a separate or third-party product for customers that want to replicate from the AFA to some other type of system (e.g., an HFA from a different product line at a remote site). Vendors with a common management environment across their AFAs and HFAs offer a simpler, less costly disaster recovery solution that gives customers good options for designing lower-cost configurations that still meet their needs.

Replacing the Legacy Enterprise Storage Workhorse

While there is still a market for small flash-optimized systems for a single extremely high-performance workload, most customers that experience the benefits of flash want to leverage them with additional workloads. The "land and expand" strategy is a very common one for vendors of flash-optimized storage solutions: an IT organization buys one of these systems for an Oracle environment, for example, and then over time wants to move more workloads from other systems to that newer platform, providing better performance not only for those workloads but also for workloads that stay behind on the legacy equipment (because it lightens the load on those systems). The battleground today and for the future for flash-optimized arrays is mixed workload consolidation, and those systems that best enable multitenancy at high workload densities are best positioned for success.

When evaluating solutions for use with consolidated enterprise workloads of both the primary and secondary type, customers should consider:

- **Performance and scalability.** Evaluate workload performance requirements along the metrics of latency, throughput, and bandwidth and ensure that the systems can deliver here despite growing workload density over time (as more workloads are moved to these flash-optimized systems). In HFAs, an ability to "pin" applications that need all-flash performance all the time to flash is important, as is the ability to intelligently manage storage tiers where necessary to minimize response times. While flash-enhanced read performance is a given, options for write acceleration (over that achievable with HDDs) should also exist. Look for AFA systems that deliver low latencies even in the face of widely varying workloads without causing the "noisy neighbor" problem. And ensure that the system will be able to support sufficient nondisruptive capacity expansion to easily accommodate your forecast needs over the life of the system.
- **Data integrity.** Solutions should provide flash-optimized data protection mechanisms (ECC, RAID, etc.) that can ride through multiple simultaneous failures without data loss and/or corruption while at the same time maximizing the life of flash media. Look for systems that provide this level of data integrity with minimal performance and capacity overhead.
- **Availability.** Systems should provide at least "five-nines plus" availability as established by the vendor's own telemetric data against its installed base. Ensure you understand what types of events are counted and excluded from these calculations so there are no surprises. Systems should offer the same kind of nondisruptive operations for failed component replacement, drive and controller firmware upgrades, and expansion and/or reconfiguration exhibited by legacy enterprise storage workhorses of record that are hosting mission-critical applications. Understand degraded mode performance as well.
- **Inline data reduction.** Flash latencies enable the use of inline data reduction technologies like compression and deduplication with latency-sensitive primary applications without undue performance impacts. The use of these technologies, when done right and in a flash-optimized manner, can improve performance and help maximize flash endurance. Against workloads that are common in enterprises today (and whose data tends to be very reducible), good data reduction implementations can significantly reduce the effective price per gigabyte of storage capacity, regardless of whether it is flash or HDD based.
- **Snapshots.** Flash-optimized snapshot implementations can provide a high-performance, very scalable snapshot capability that can literally change the nature of snapshot-based datacenter workflows through the conscious application of copy data management. The ability to create read-only or read/write snapshots and use and/or retain them without performance impacts can help save space, cost-effectively parallelize certain types of workflows (analytics, QA and regression testing, etc.), and provision high-performance storage to new virtual machines much more rapidly.
- **Security.** In most cases, enterprise data should be stored securely, and in many cases, specific security levels are required to meet compliance guidelines. Systems should support at least AES 256-bit security for data at rest, and it is even better if they also support encryption for replicated data in-flight. Consider whether software, controller, or drive-based encryption best meets your requirements for simplicity, key management, and performance.
- **Integration.** IT organizations generally run their environments with datacenter workflows driven by various policies. Arrays should support APIs that allow them to integrate easily into preexisting datacenter workflows for data protection, disaster recovery, batch loading, provisioning, and other administrative jobs. Scripting, virtualization, and application API support must be considered.

IT organizations should expect that flash-optimized systems will require fewer individual storage devices, need less energy and floor space, and support higher workload densities. The total cost of ownership (TCO) of these systems will clearly be lower than HDD-based arrays to meet a given performance level, adding to their already overwhelming performance benefits.

Company Overview

Founded in 2008, Nimble Storage built a new class of storage systems that had an operating environment specifically optimized for its blend of flash and spinning disk media. The founders expected this new system to not only offer much better storage performance than existing enterprise-class arrays but represent a more cost-effective replacement for legacy HDD-based architectures as well. The company initially targeted midrange enterprise customers, experienced rapid adoption, and grew to roughly \$100 million in revenue by its December 2013 IPO. As the enterprise storage market slowly moved in the direction of broader flash deployment, Nimble Storage spent two years building and designing an AFA with some unique benefits, a step that helped the company sell successfully to larger enterprise customers. At the same time, it was also achieving considerable success selling to cloud service providers, an important new high-growth market in enterprise storage. By the end of calendar year 2016, Nimble Storage's customer count should near 10,000 and revenue should top \$400 million as Nimble Storage continues to grow as a company at roughly the rate of the high-growth AFA niche it entered in early 2016 (which through 2020 will grow at a 21.4% CAGR).

Nimble Storage's flash-optimized portfolio is made up of three key components:

- **Unified Flash Fabric, powered by the Nimble OS.** Both the AF (all flash) and CS (hybrid flash) Series systems run the same core software platform, called Nimble OS, that includes a comprehensive set of common enterprise-class data services and enables centralized management of systems of either type in a cluster (hence the "unified" flash fabric). Workloads can be nondisruptively migrated between systems when necessary, customers can replicate from AF to CS Series systems (and vice versa) for disaster recovery and other purposes, and up to four nodes can be combined under a single system image, complete with data and metadata distributed across all systems, to create an AFA system that can deliver 1.2 million IOPS with sub-millisecond latencies and support over 8 petabytes (PB) of effective capacity (assuming a 5:1 data reduction ratio) in only 48U (300,000 IOPS and 2PB+ for a single AF9000 node in only 12U).
- **InfoSight cloud-based predictive analytics.** Nimble Storage was the first vendor to introduce cloud-based predictive analytics on an enterprise-class storage platform. Used by 95% of Nimble Storage's customers, InfoSight continuously collects metrics not only in the storage system but also all the way up to the virtual machines, securely relaying that data back to Nimble Storage's private cloud where predictive analytics are brought to bear. Usage and growth patterns, system health, data reduction ratios, and performance metrics – all are analyzed and used to optimize system operation, aid in troubleshooting when necessary, and help IT administrators make informed decisions in all manner of areas affecting system management. InfoSight was a breakthrough, changing the way system monitoring and support is done in the industry, and a number of other storage vendors have attempted to replicate the benefits of cloud-based predictive analytics to make their own systems more reliable and easier to manage.
- **Timeless Storage.** An example of the new approach to managing the support life cycle and technology refresh that flies in the face of the forklift upgrades, high maintenance, and routine replacement of all hardware and software that has been de rigueur in enterprise storage for decades, this program enables in-place, nondisruptive migration to next-generation technologies and lowers life-cycle costs.

Company Strategy

Nimble Storage has followed conscious strategies in the areas of product design, customer care, managing growth, and go to market that have contributed to its success. Delivering a storage architecture that makes very efficient use of flash media has been part of the design of both the AFA and HFA systems. Intelligent caching algorithms in its HFAs, guided by predictive analytics that are tailored to each system, ensure extremely high cache hit rates to flash. When writing to flash in its AFA, inline data reduction, write minimization, wear leveling, and other flash management techniques deliver maximum performance while promoting extremely high media endurance and effective capacity utilization. These management techniques allowed Nimble Storage to introduce triple-level cell (TLC) flash media technology in 2015 to help increase storage densities and drive down price per gigabyte while continuing to meet stringent reliability and data integrity requirements.

Delivering a standout customer experience was a way that Nimble Storage strove to differentiate itself from established enterprise storage providers early on, and it has an excellent reputation among its customers for the overall experience of buying, using, and maintaining the company's flash-optimized products. Nimble Storage has consciously managed its customer care processes, putting in place product features (like extensive predictive analytics to proactively address looming trouble situations and nondisruptive technology refresh), internal procedures in both sales and support, and hiring practices focused on producing a differentiating customer experience. The company has been able to maintain this focus as it has passed the 8,000-customer mark and in 2016 released a Net Promoter Score (NPS) of 85, the highest score for a SAN vendor ever released. NPS is a standardized customer experience metric that has proven, over the past 15 years across 220 different industries, to be highly correlated with high repeat purchase rates and future business success. Most enterprise storage providers have NPS scores in the 20-40 range (on a scale of -100 to +100). For more information on NPS, a metric of which every IT buyer should be aware, see *Why Enterprise Storage Managers Need to Understand the Net Promoter Score* (IDC #US41185416, April 2016). Nimble Storage's product design, a customer service-oriented culture, InfoSight predictive analytics, and the Timeless Storage Program differentiate Nimble Storage from established enterprise storage vendors and contribute strongly to the high level of customer satisfaction the company generates with its products and services.

Since the company was addressing extremely high growth markets, the Nimble Storage executive team has followed a strategy to maximize company growth to ensure that the company had a large market share when growth rates in its target markets finally slowed down. The company has not yet reached profitability but is financially very sound with close to \$200 million in cash in the bank, a figure which in conjunction with forecast quarterly revenue could fund operations well past anticipated profitability in 2018. Over the life of the company, Nimble Storage has entered major new markets (the AFA market in 2016), added major new features that opened up new business opportunities (Fibre Channel [FC] host attachments), successfully attacked major new customer segments that will grow to become large businesses in the next several years (larger enterprises, cloud service providers), and has been achieving enviable gross margins in the 65%+ range over the past several years.

Nimble Storage originally sold its array as a storage appliance, but over time it has added additional consumption models using the same core technology to address different types of buyers, thereby increasing its total available market (TAM). Nimble Storage started out selling primarily in North America, but it has been expanding its efforts to international markets over the past several years. Today, roughly 20% of its revenue comes from the company's international business, but it has been making investments here and plans to grow that percentage while at the same time growing revenue in

North America. Throughout its life, Nimble Storage has pursued an indirect sales strategy that leverages selected channel partners with specific enterprise storage expertise. Working with partners like Cisco, Nimble Storage's arrays are now available as part of joint vendor-certified converged infrastructure offerings, and sales to cloud service providers make infrastructure powered by the company's platforms available to customers preferring the cloud consumption model to purchasing on-premise storage infrastructure.

Overview of the CS and AF Series Platforms

Nimble Storage offers the CS Series, which are hybrids, and the AF Series, which are all flash. Both are variants of Nimble Storage's Predictive Flash Platform design, which shares a common storage operating environment (NimbleOS) and heavily leverages InfoSight predictive analytics to collect a wide variety of telemetrics to manage and optimize system performance and administration. The CS Series primarily uses flash for read caching, although it does support volume pinning to provide all-flash performance all the time for selected applications. The AF Series, while it uses the same Nimble OS, has been optimized for the all-flash configuration particularly with respect to data reduction and how writes and RAID protection are handled. Both systems can be used for mixed workload consolidation, but at a given raw capacity, the CS Series systems will cost about one-third of the AF Series. The CS Series includes the CS1000, CS3000, CS5000, and CS7000 platforms, which can scale from 35,000 IOPS and 11TB raw capacity up to 230,000 IOPS and 882TB raw capacity. The AF Series includes the AF1000, AF3000, AF5000, AF7000, and AF9000 platforms, scaling from 35,000 IOPS and 6TB raw capacity up to 300,000 IOPS and 553TB raw capacity. Systems can be nondisruptively upgraded to the larger system models across both lines, and up to four nodes can be clustered under a single system image in a truly distributed, scale-out architecture that supports up to 1.2 million IOPS and 2PB+ of raw capacity.

The Predictive Flash Platform uses an active/passive dual-controller design and a redundant 12Gb SAS backplane; supports 1TB, 2TB, and 4TB SSDs; and can accommodate 16Gb FC or 10GbE host connections for its block-based storage. Data services packaged with the Nimble OS include triple-plus parity RAID (as well as intra-drive parity on all drives for additional resiliency), variable-block inline data reduction, host multipathing for transparent controller failover, thin provisioning, space-efficient snapshots (read only and read/write), granular AES 256-bit software-based encryption, and asynchronous replication (which includes asynchronous, synchronous, and stretched cluster support). Today, the AF Series supports both compression and deduplication while the CS Series supports compression with planned support for deduplication with a no-cost nondisruptive software upgrade. Data reduction is "on" by default but may be selectively deactivated. Data services can be individually applied on an application-by-application basis to provide the most flexibility in mixed workload environments.

When the customer specifically wants all flash, the AF Series offers a high-performance, fully featured, and very cost-effective solution for enterprises and service providers of all sizes. When customers want a lower-cost option or want to consolidate secondary storage workloads on the same platform, the CS Series tends to be the better choice. With both AFAs and HFAs in its portfolio, Nimble Storage can cater to customer preferences instead of having to position one or the other as the best platform for the customer.

FUTURE OUTLOOK

Nimble Storage's entry into the AFA space was well timed. As revenue growth in the HFA space slows, Nimble Storage's AF Series announcement in February 2016 gives the company access to a market segment that will grow much faster over the current IDC forecast horizon (through 2020). Nimble Storage's strategy to delay profitability to lock in market share has already given the company a notable presence in the HFA space, and if the company can continue to meet its revenue targets over the next several years, it will firmly solidify its position as one of the established enterprise storage market leaders. Its ability to sell highly flash-optimized versions of both AFAs and HFAs that share a common set of data services puts it in a select group of vendors – there are still vendors that have only an AFA or an HFA but not both, and even among those vendors that do have both, very few of them offer the same operating environment and simplicity on both. For those customers looking for a primary and secondary storage consolidation play under unified management, Nimble Storage offers a compelling value proposition.

Sales figures on Nimble Storage's AFA products indicate rapid adoption among the company's existing customer base, with 56% of purchased systems deployed with at least one CS Series HFA in a unified flash fabric configuration. To date, 45% of AF Series shipments were purchased by existing Nimble Storage customers, while 55% were purchased by new customers. Since its initial shipment in calendar 1Q16, the AF Series has already brought on close to 200 new customer logos – more than any other newly introduced AFA in such a short time. The AF Series made up 17% of new array revenue in Nimble Storage's most recent fiscal quarter and is expected to grow rapidly in the coming year. Standout Nimble Storage capabilities like triple-plus parity RAID for extremely high availability and data integrity, the ability to replicate between AFAs and HFAs without requiring any separate products or additional cost, the InfoSight cloud-based predictive analytics that can be used to automate a high percentage of typical daily administrative tasks, and the company's excellent track record and reputation for delivering a differentiated customer experience in the enterprise storage space, separate Nimble Storage from other providers. The AF Series can deliver up to 1.2 million IOPS at sub-millisecond latencies, nondisruptively scale to support over 8PB of effective storage, and offers a broad set of mature, enterprise-class data services. Based around a proven architecture in production use across well over 8,500 customers in a variety of verticals, it is clear that Nimble Storage is a very competitive all-flash player with some very unique value propositions.

ESSENTIAL GUIDANCE

Flash-optimized enterprise storage platforms are the future. As legacy storage platforms come up for technology refresh, most customers will be evaluating their ability to replace them with flash-optimized AFA and HFA offerings. An increasing number of customers will be choosing them, as indicated by the high growth rate of these two markets relative to external enterprise storage overall. Customers should consider how their consolidation strategies for both primary and secondary workloads will help drive their next enterprise storage purchases.

Advice for Nimble Storage

Nimble Storage has a solid market presence among flash-optimized HFA vendors, with an excellent reputation for product reliability and customer care. It needs to continue to grow this business while at the same time making large strides to penetrate the faster-growing AFA market. As flash prices continue to plummet, more enterprises will be purchasing AFAs for mixed primary workload consolidation, and Nimble Storage needs to do what is necessary to ensure that it makes the short list

for these evaluations. It has a very competitive AFA offering – it needs to increase the awareness of this in its targeted markets. The availability of a fully compatible HFA offering in its portfolio is a competitive advantage that allows Nimble Storage to propose comprehensive solutions for a wider range of primary and secondary storage workloads under unified management, and it should leverage this when competing against other vendors.

In its marketing efforts, Nimble Storage should not discount the importance of its NPS score to prospective buyers. To date, no other SAN vendor has published an NPS number as high as 85. The score itself is not the point – the point of NPS is the product, processes, and culture a company has to put in place to generate a number this high, and that is something of which prospective customers should be aware. When considering a new storage array, many IT organizations want to hear from their peers about their experiences with the vendors they are considering. This is something that Nimble Storage should encourage – it should not be shy about its score and explain to those that are unfamiliar with it what it means for prospective buyers.

Advice for Buyers

As legacy storage platforms come up for technology refresh, consider flash-optimized enterprise-class storage platforms as full replacements. Consider your objectives for consolidation, how that applies to both primary and secondary storage workloads, and what a well-integrated AFA/HFA portfolio from a single vendor can do to help you achieve your objectives.

Look for design efficiencies in flash-optimized platforms that make the most out of flash capacity. Features like inline data reduction, thin provisioning, data protection with low overhead, and space-efficient snapshots should be requirements. These features all support lower TCO, but they can also help boost performance, increase flash endurance, improve reliability and availability, and increase storage density. Solutions should support replication, providing flexible options for efficient data movement and lower-cost hybrid configurations (AFA/HFA). Platform maturity is another key consideration, particularly when the consolidation will include mission-critical workloads. As a media, flash is a mature enterprise technology, but not all flash-optimized systems exhibit the same levels of maturity.

Finally, while cloud-based predictive analytics are not yet considered a requirement in enterprise storage, there are undeniable benefits to its use: higher performance, better reliability and availability, more efficient management, a vastly improved support experience, and a much better understanding of how your storage is performing on a variety of different metrics that inform daily administration as well as future planning. While Nimble Storage was the first vendor to introduce this type of telemetrics offering, other vendors are quickly adding their own versions. Within just a few short years, it will be a requirement, and customers can expect more mature and comprehensive implementations like InfoSight to provide better overall value.

LEARN MORE

Related Research

- *Justifying Investment in All-Flash Arrays* (IDC #US41646416, August 2016)
- *Worldwide External Enterprise Storage Systems Forecast, 2016-2020: AFA Market Still Continues to Significantly Outpace Overall Enterprise Storage Growth* (IDC #US41581116, July 2016)

- *Worldwide All-Flash Array Market Shares, 1Q16: Established Storage Vendors Dominate* (IDC #US41556316, July 2016)
- *IDC's Worldwide Flash in the Datacenter Taxonomy, 2016* (IDC #US41302116, May 2016)
- *Why Enterprise Storage Managers Need to Understand the Net Promoter Score* (IDC #US41185416, April 2016)
- *Scale-Out Technology Permeates the AFA Market* (IDC #US41180616, April 2016)
- *Flash-Optimized Hybrid-Flash Array Vendor Nimble Storage Joins the All-Flash Array Fray* (IDC #US41049716, February 2016)
- *IDC MarketScape: Worldwide All-Flash Array 2015-2016 Vendor Assessment* (IDC #US40721815, December 2015)

About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications and consumer technology markets. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide. For 50 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world's leading technology media, research, and events company.

Global Headquarters

5 Speen Street
Framingham, MA 01701
USA
508.872.8200
Twitter: @IDC
idc-community.com
www.idc.com

Copyright Notice

This IDC research document was published as part of an IDC continuous intelligence service, providing written research, analyst interactions, telebriefings, and conferences. Visit www.idc.com to learn more about IDC subscription and consulting services. To view a list of IDC offices worldwide, visit www.idc.com/offices. Please contact the IDC Hotline at 800.343.4952, ext. 7988 (or +1.508.988.7988) or sales@idc.com for information on applying the price of this document toward the purchase of an IDC service or for information on additional copies or web rights.

Copyright 2016 IDC. Reproduction is forbidden unless authorized. All rights reserved.

