

# All-Flash Arrays Poised for Mainstream Adoption



SURVEY FINDS IT PROS CONFIDENT IN THEIR ABILITY TO IMPROVE DATA ACCESS AND INCREASE CUSTOMER SATISFACTION.

Businesses in today's digitally driven world need to respond quickly to new customer demands, emerging market opportunities and fast-paced competition. However, companies that are inundated with massive volumes of data sometimes become more sluggish than speedy. Faced with this paradox, more and more organizations have deployed all-flash storage arrays to supercharge the performance of data-intensive business applications such as databases and online transaction processing (OLTP) systems.

A recent IDG Research Services survey of IT professionals<sup>1</sup> explored the growing corporate embrace of all-flash arrays. Besides identifying the drivers behind the all-flash adoption trend, the multi-industry survey also revealed the core benefits these new systems can deliver and the concerns that must be addressed to achieve even wider adoption.

The survey found that IT pros were confident in the ability of all-flash systems to meet some of their organization's most critical goals, and they were most confident about improving data access and customer satisfaction.

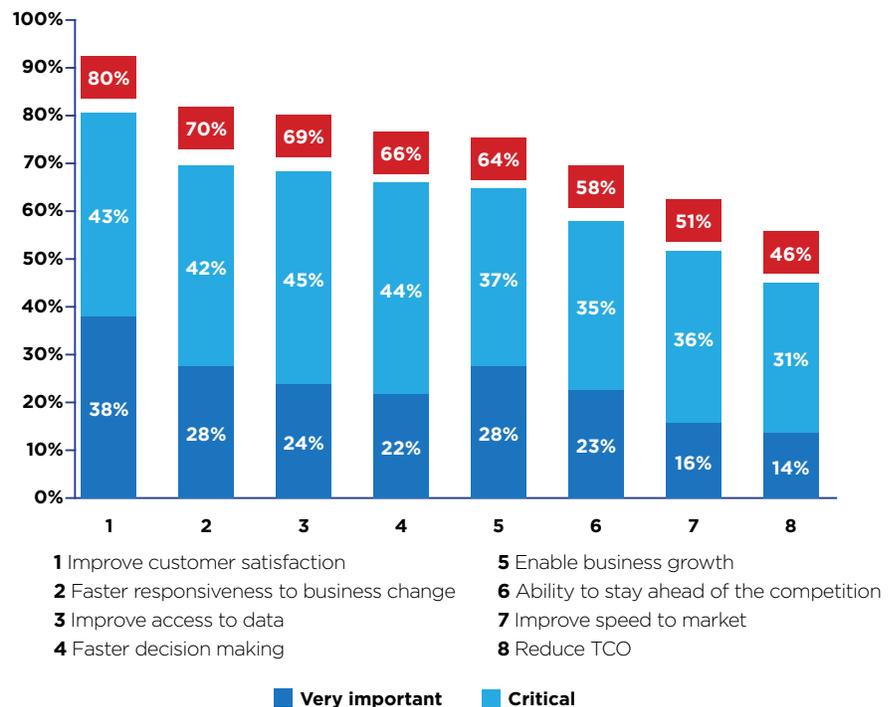
## Data management strategies need to support business goals

When crafting strategies and solutions to meet business demands, IT organizations are attempting to achieve several critical goals. According to the survey, improving customer satisfaction is foremost among them: 38 percent of the respondents characterized this

goal as critically important, and another 43 percent said that it was very important.

Implicit in most of the rated goals—and explicit in several—is a need for rapid access to business data (see Figure 1). Indeed, nearly two-thirds of the surveyed IT professionals rated improved access to data as critical or very important in its own right.

**Figure 1. Importance of Business Goals in Data Management Strategy**



(Summed values may not total due to rounding. Other responses not displayed.)

<sup>1</sup> The survey queried 166 IT professionals and found that 83 percent (138 respondents) had deployed, were considering or were interested in all-flash storage solutions. The results pertain to this subset of qualified respondents.

However, even though the respondents' companies share similar data management goals, there is no certainty that they will be able to achieve them with current IT practices. A major challenge identified by the survey involved the ability to manage the lifecycle of data-intensive applications across multiple environments. Only half of the respondents said they were extremely or very confident that their data management strategies could accomplish this fundamental goal, indicating significant room for improvement.

**All-flash arrays are now used for a variety of business applications**

In an effort to ensure that their data-dependent business operations are up to speed, growing numbers

of application managers, database administrators, and other IT professionals are adding all-flash arrays to their storage environments.

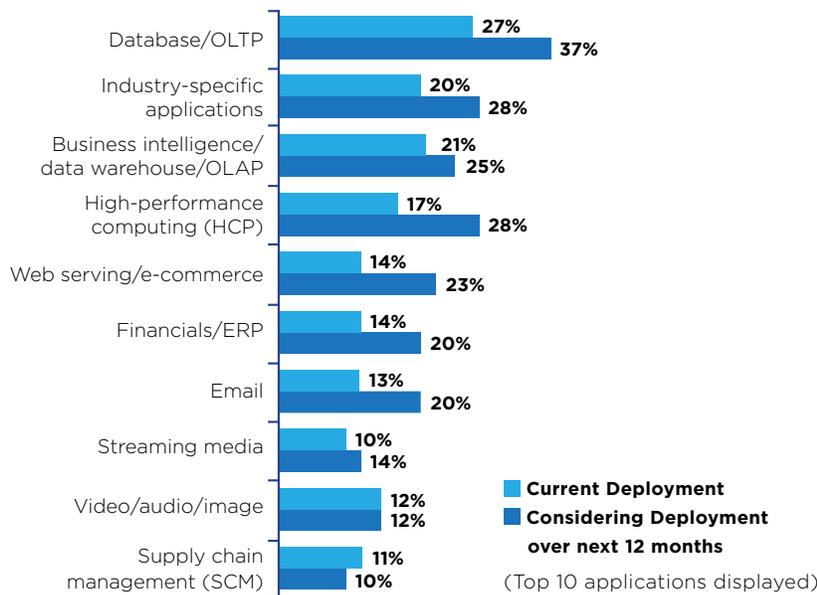
The respondents who were already deploying or open to exploring all-flash arrays identified a long list of business applications that could benefit from solid-state flash platforms. Three-quarters of the respondents indicated that they have already deployed all-flash arrays to support one or more applications, with database/OLTP deployments leading the list (see Figure 2). This specific all-flash use case was particularly popular at large companies with 10,000 or more employees. Whereas 27 percent of the respondents overall indicated that they had deployed all-flash arrays for database/OLTP, 39 percent of those working at

large enterprises said they had done so.

Each of the applications covered in the survey has distinct demands, but all can benefit from fast and reliable access to business data. When evaluating all-flash arrays to deliver this and other benefits, the survey respondents consider several features and capabilities. Of the 10 all-flash array evaluation criteria listed, six were identified as critical or very important by at least 75 percent of the respondents (combined critical/very important percentages shown):

- High performance – 90 percent
- High availability – 86 percent
- High IOPS (input/output per second) – 90 percent
- Long life – 79 percent
- Low latency – 75 percent
- Integrated data protection – 75 percent

**Figure 2. Business Applications Targeted for All-Flash Arrays**



**Flash benefits are well understood (with the exception of cost models)**

Despite their growing adoption of all-flash storage, the IT professionals surveyed expressed several concerns about these solutions. Unsurprisingly, the top concern involved cost. More than half of the respondents said that the initial cost of all-flash solutions was a worry. Other concerns ranged from worries about flash capacities to uncertainty about how to best optimize all-flash systems within existing data management environments.

It's understandable that many IT managers still worry about the

cost of all-flash arrays. After all, flash-based systems used to be considerably more expensive than disk-based systems. However, this concern is increasingly unfounded, for a couple of reasons. For one thing, the cost of all-flash arrays has dropped rapidly as flash suppliers have increased production of high-density components and as storage vendors have introduced advanced storage efficiency features.

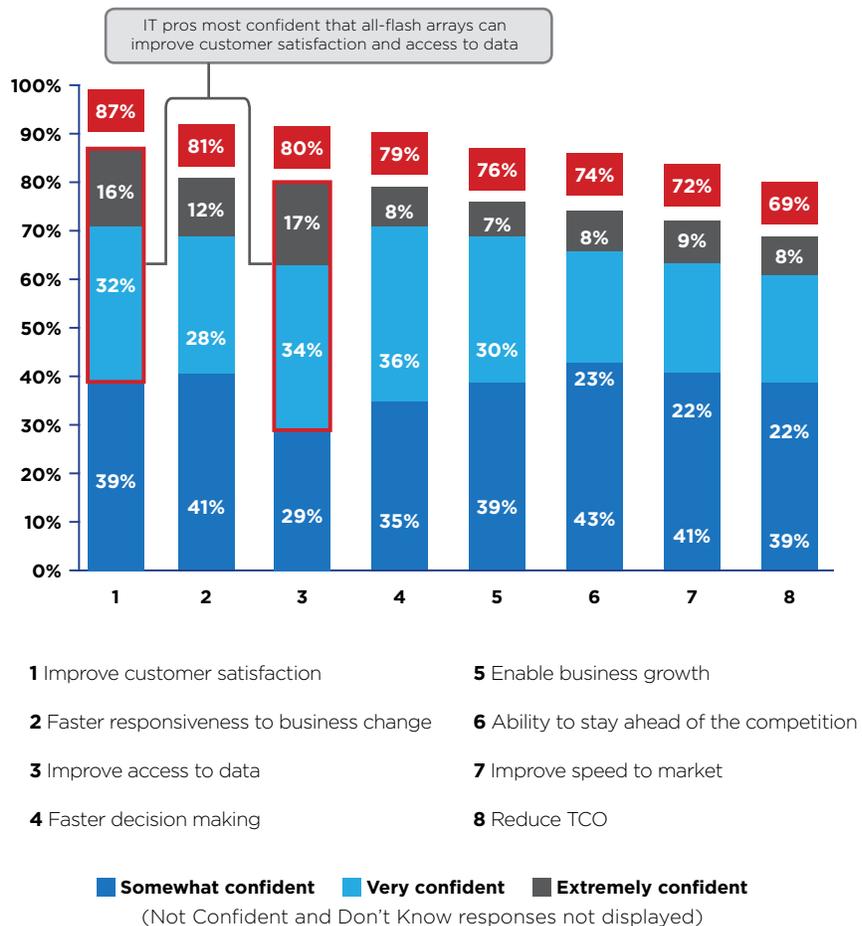
More important, by adding all-flash platforms to their existing IT infrastructure, companies can actually drive down the total cost of ownership (TCO). Compact, high-performance all-flash arrays can often replace multiple hard-disk systems, meaning lower equipment and database licensing costs, reduced energy demands, lower management overhead and less floor space required. On top of these TCO benefits are the many operational and business improvements all-flash arrays can enable when deployed for data-intensive, performance-sensitive applications.

Survey respondents expect that all-flash solutions will help them meet several critical operational goals. Improved response time was the top-rated internal benefit by far, a result expected by 70 percent of the respondents. Some of the other anticipated improvements included maximized operational efficiencies, increased storage capacities, the elimination of application performance silos, and reductions in time to value. Beyond these specific payoffs, the respondents broadly expect all-flash arrays to directly aid the core

data management goals listed in *Figure 1*. As noted, the topmost of these goals was to improve customer satisfaction, and an impressive 87 percent of the respondents expressed some level of confidence that all-flash arrays can help them achieve that goal. Strong majorities also expressed confidence that flash-based storage can directly support other key data management goals, as shown in *Figure 3*.

The need for organizations to add all-flash storage to their data management solutions—if they haven't already done so—should be clear. The speed of business decisions and operations continues to accelerate, and the need to rapidly access, analyze, and leverage huge volumes of data is becoming ever more pressing. All-flash arrays are already playing critical roles in enterprise data centers, and those roles are certain to rapidly expand and multiply. ■

**Figure 3. Confidence in the Ability of All-Flash Arrays to Deliver Key Benefits**



**NetApp All-Flash Arrays Meet Enterprise Performance Needs**

All-flash arrays play an important role within the NetApp portfolio of enterprise storage solutions. The company provides all-flash systems designed for standalone applications, virtualized infrastructure, and next-generation scale-out cloud infrastructure. The NetApp Data Fabric vision for data management enables customers to move, manage, and protect their data across all-flash platforms and even extend their data services into the cloud.

In addition to providing industry-leading performance, as validated in Storage Performance Council benchmark testing, NetApp’s all-flash arrays have been shown to:

- Deliver 20x shorter response times for Microsoft SQL Server databases
- Provide a six-month payback and 90 percent ROI for Oracle database environments
- Achieve up to 10x overall data reduction

Numerous [customers of NetApp](#) have benefited from its all-flash arrays:

**UZ Leuven**

UZ Leuven, the largest healthcare provider in Belgium, manages the electronic patient records (EPRs) for a network of 18 hospitals and also maintains about 1,000 virtual desktops for doctors and other medical

personnel using thin clients on the job. The company moved its in-memory EPR database and its virtual desktop servers to a NetApp all-flash storage system. This shift has enabled UZ Leuven to deploy 10 times as many virtual desktops and to achieve average storage latencies of less than 0.4 ms, speeding decision-making and improving patient care.

**Randstad**

Randstad, one of the world’s largest recruitment and human resources providers, decided that within five years, it would deliver all of its IT services via the Amazon Web Services (AWS) cloud. As part of this effort, the company’s UK operations replaced its legacy storage environment with a NetApp all-flash solution and deployed NetApp Cloud ONTAP for disaster recovery (DR). The combination of all-flash systems for performance and cloud storage for DR addressed Randstad’s performance and capacity requirements and provided the company with an easy pathway to the cloud.

**McNeese State University**

McNeese State University, in Lake Charles, Louisiana, needed to provide near-instantaneous response times for class registration and other services, even during periods of peak demand. To accomplish this, the university moved all of its local applications and databases, along with its entire VMware

virtual server environment, to NetApp all-flash systems. Among other benefits, its data backups are now eight times as fast, due to improved storage I/O—and its application performance has increased threefold.

**Citrix**

Citrix, a leading provider of virtualization, mobility, and networking solutions, needed to improve the execution of its software processes by automating the testing lifecycle. Achieving that goal required a storage solution that could support the performance demands of running many tests in parallel. By deploying a NetApp all-flash storage system, Citrix reduced test completion time by 20 to 30 percent and consumes up to 80 percent less storage capacity by using NetApp’s advanced storage efficiency software.

For more information about NetApp’s all-flash solutions, go to

[www.netapp.com/solutions/applications](http://www.netapp.com/solutions/applications)

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