Keys to Business Success with All-Flash Storage

Tips and Advice from Enterprise End Users
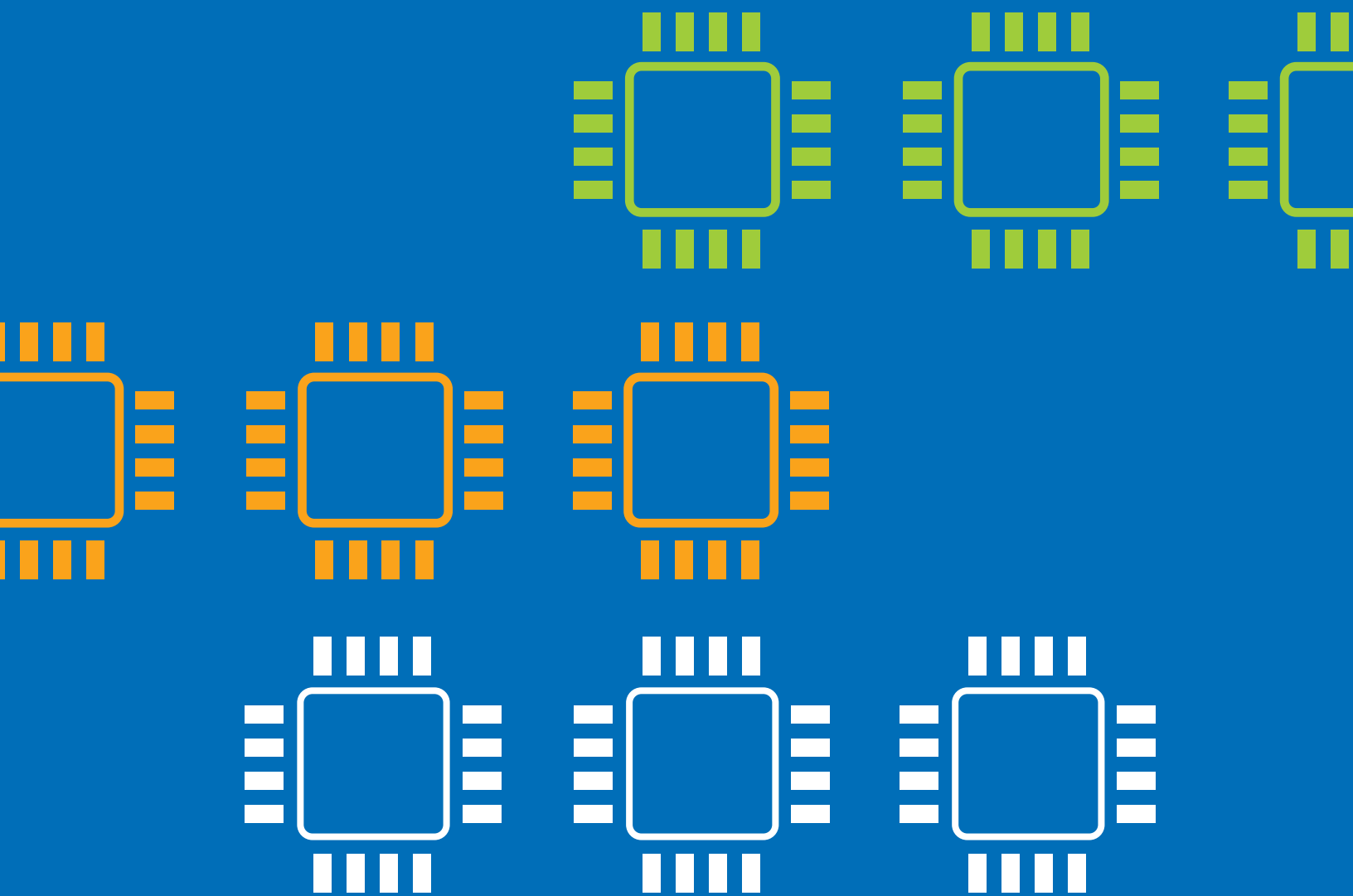
IT Central Station: Reviews of Flash Storage and Other IT Products from Real Users

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Introduction

All-flash storage is on a strong growth trajectory, but the industry is not swooning naively over the blazing fast I/O speeds. Most IT managers are talking a mature, step-by-step approach to all-flash adoption. Falling per-gigabyte prices are making the technology more commonplace. Solid state drives are no longer just for specialized, high-performing tasks. Before they leap, however, storage professionals want to understand the full business picture as they formulate a winning strategy for putting all-flash storage to use for more workloads.

This paper offers insights for business success with all-flash storage based on IT Central Station reviews. Real users weigh in on what it takes to get the most out of the technology. It covers such aspects of flash storage as the need for simplicity and the importance of flexibility. The paper also looks at how to build a business case for all-flash and think through the implications of issues such as integration with existing infrastructure.

The Growth of All-Flash Storage

The all-flash storage business is booming even as the overall storage market cools off. In 2015, according to IDC, sales of all-flash arrays were up 71% for the year while total storage revenue decreased by 2.2%. Adoption is brisk but measured. The Taneja Group, an industry research firm, surveyed IT managers and found that 18% believed that all of their tier 1 workloads would be running on all-flash arrays by the end of 2017. Of those surveyed, 35% also thought they would run their tier 1 workloads on all-flash but needed more time to work through their hardware refresh cycles. So, 53% expected an all-flash future, and the survey found that only 10% felt that all-flash was not going to be the dominant storage platform in the future.

SOLID-STATE DRIVES

HARD DISK DRIVES

CAPACITY AND THROUGHPUT TRENDS
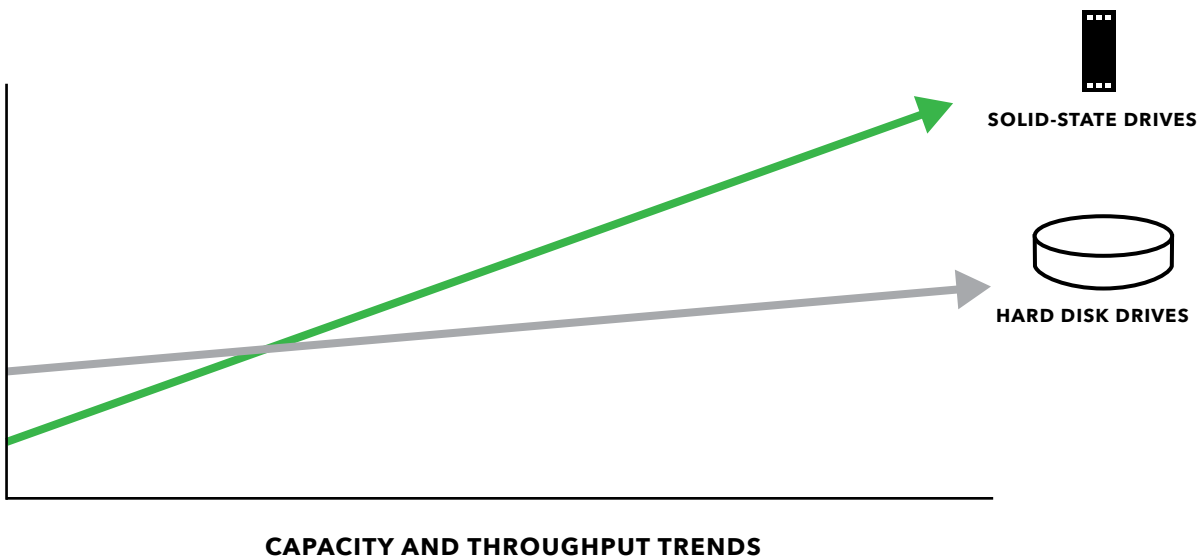
The Need for Simplicity

Users of all-flash storage emphasize the need for simplicity in achieving the desired business outcomes from the technology. Simplicity starts with implementation. The faster and simpler the implementation process, the sooner the organization can reap the business benefits of the solution.

A System Engineer of Datacenter Services at a large university described being pleased with his all-flash array, noting, "It took only a very short time to implement, as it was live just a few hours afterwards." A Senior Consultant at a German IT service firm explained, "In two hours, it was up and running."

A Consultant said, "I did the implementation myself. It's a straightforward and easy setup." The German Senior Consultant reflected a similar view about his choice of all-flash storage by saying, "It's quite simple to install and fast to integrate into existing ecosystems."

Given that new storage arrays often replace older ones, a Storage Architect at a large insurance company emphasizes the importance of simple data migration. He said, "We were able to migrate from a flash pool to [our new solution] very effectively and efficiently." However, he cautioned, "Before buying, look at the migration plans. Try it and buy it."

Integration with Existing Infrastructure

Integration with existing infrastructure is also critical to getting the business benefits of all-flash arrays. Without smooth integration, implementation lags and deployment costs start to creep up. The university System Engineer of Datacenter Services acknowledged this idea with his praise for his all-flash solution, saying, "It integrates well with our environment, specifically with disaster recovery, high availability, management, performance, and historic and current performance metrics."

A Core Infrastructure Manager at a retailer discussed integration, commenting, "We're already cluster-mode so we can just slide [the new all-flash array] into the existing cluster and migrate all our data across relatively seamlessly." Another user, a Team Coordinator of Storage/Backup at a consumer goods company, valued his solution's ability to work well with other storage products from the same vendor. This may seem like a basic requirement, but the pace of mergers and acquisitions (M&A) in the storage industry raises the real possibility that two products from the same company will in fact not integrate smoothly at all.
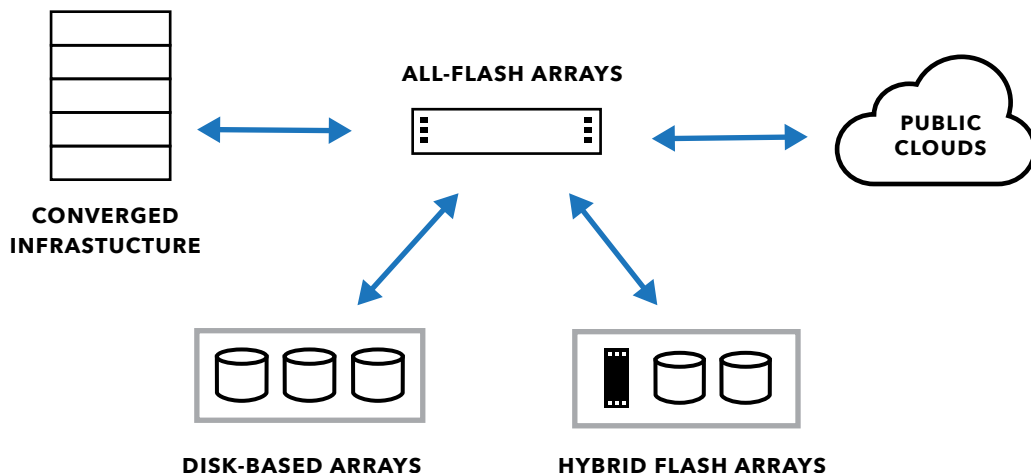
How Flexibility Helps IT Serve the Business

Flexibility in storage adds to IT's ability to better serve the business. Being able to move workloads from one storage platform to another and consolidate workloads makes it possible to achieve a higher level of agility. As a result, IT Central Station's all-flash users place emphasis on flexibility in the evaluation of a solution. A Senior System Engineer at a large retailer explained the benefit of his all-flash solution by saying, "The ability to abstract everything into the virtual layer makes management easier and gives you tremendous flexibility. Makes my life much simpler." He also liked his all-flash vendor's non-disruptive upgrades, which further streamline IT operations.

Moving Workloads to Optimize Performance

Flexibility also means being able to move workloads from one storage tier to another to optimize performance. Changing application load levels and performance expectations may necessitate moving workloads. If it's time consuming or costly to move workloads, this impedes the IT department's ability to enable business outcomes. For instance, if a bank initiated a campaign to shift customer transactions from a Web-based portal to a mobile app, that might shift the demand on the storage solution that supported the mobile app. To establish the desired performance levels for the mobile app, the bank would ideally be able to quickly and nondisruptively move that workload to all-flash storage as soon as the campaign began.

A System Administrator at a retailer with more than 1000 employees said, "Whenever we have machines which demand high IO or low latency we move them into the [solution's] volumes." A VP, Systems Integrator at a large financial services firm expressed appreciation for his all-flash solution's data management capabilities as they relate to moving workloads. He said he had, "A single data management architecture that is able to have data transcend from on-premise data platforms to the data platforms on hybrid clouds in cloud service providers and on to the data platforms of hyperscalers, and back. All these data movement is secure, and more importantly, allows organizations to maintain control of their data, wherever it may be residing."

Consolidating Workloads onto All-Flash

Industry analysts agree that the all-flash market is heading toward a moment when enterprises will start to consolidate more of their workloads onto all-flash platforms. The goal is to improve performance of all primary applications, as opposed to just a handful. As the research suggests, it won't be an overnight process, but it is in the sights of many IT managers.

DATABASES

CRM / ERP → ▯ ← **VSI / VDI**

ANALYTICS
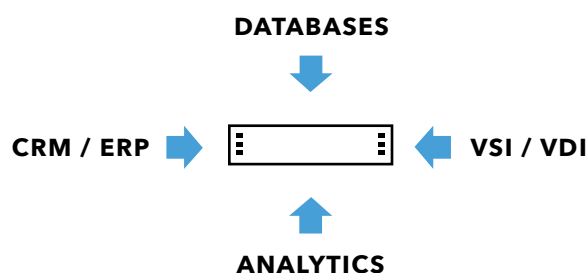
Storage management tools are a big part of realizing this goal. A Software Developer at a healthcare company described how his storage solution's management platform let's his team, "Unify our servers and have unified management of them. We can also scale freely. The most valuable features for us are the secure multi-tenancy and High Availability built in that provides almost no downtime."

Multi-protocol support will also help it happen. This includes the use of RESTful APIs. The German Senior Consultant noted, "We find the flexibility of having the access protocols all in one box and [the storage OS] to be the most valuable features. My client's data warehouse system and ERP is ten times faster with [the all-flash solution] than with hard discs. A Head of Data Center at a Consumer Goods company considered protocol support in his choice of all-flash solution, explaining, "It uses multiple protocols and has all the implementation protocols that other products do not."

Building the Business Case for an All-Flash Solution

IT managers who want to expand their use of all-flash must make a persuasive business case for the investment. Some of the business advantages of all-flash are readily apparent. In terms of data center economics, all-flash has several financial benefits. It's inherently denser than spinning disks, so it saves on rack space. Cooling and power savings typically follow. Other business advantages require a deeper look.

The business case for all-flash should also include a discussion of how high performance and efficient storage management contributes to better overall business results and lower IT costs. The Senior Consultant at the German IT consultancy said, "It's very easy to handle the monitoring on an enterprise grade. Now, my client's data warehouse system and ERP is ten times faster than with hard disks." In other words, IT resources required for monitoring come down, lowering IT overhead. At the same time, the ERP systems becomes more responsive so end users can be more productive.

An IT Manager at a Pet Care company addressed the benefits of deduplication. He said, "The deduplication technology that it gives us means that we are getting more storage for our money. It's a better value than disk drives. We've done transfers, migrations, data copies in and out, and it hasn't flinched. It's very stable." In his case, it seems that data management capabilities translated directly into smooth, economical IT operations.

EFFECTIVE CAPACITY   INLINE DATA REDUCTION   **PHYSICAL CAPACITY**
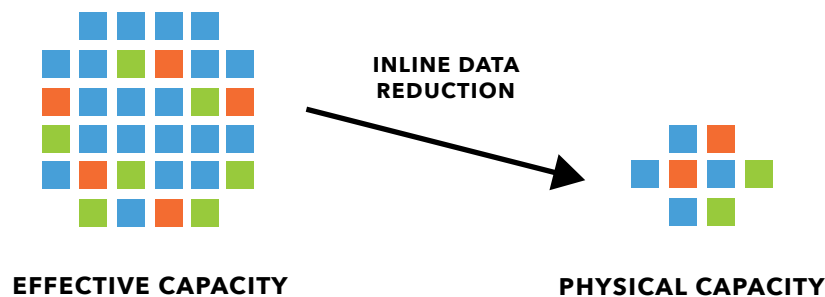
On a related front, a Sr. Systems Engineer of IT Enterprise Infrastructure at a health data company described how their batch processing time went down from 14 hours to 7. He said, "The most valuable feature for us is its low latency, which is the main reason we bought it. We had performance issues before, and this was a great solution to those problems." By cutting batch time in half, the staff at his company don't have to wait so long for the information they need to get their work done. The Senior Consultant at the IT consultancy had a similar experience. "It's fast! It can perform one million IOPS," he said. "We reduced database queries from 32 hours on our old solution to less than 10 with this."

A Manager of Group IT Service at a software R&D company noted, "We're using only about one fifth of the formal capabilities of the systems. We're still running Oracle DW and 50% of the system is consumed, but this is not causing any issues during daily business. We've used it for about three months for Oracle EW and VMware. The scalability is excellent. We still can

grow a lot into it and add more databases." This company has headroom. Expansion will not require adding more data center space for storage.

The work of IT itself can go faster with all-flash. An R&D IT Admin at a communications service provider said, "Lower latency means faster end products. From development to the end, it now takes less time to compile a product and export it. The whole process of compilation, builds, and exports takes a lot less time. So instead of 10 builds per day, I can do three times as much." His development work is more productive with all-flash storage.

Focus on Business Outcomes

Faster performance can also translate into better business operations. As an ICT Infrastructure Engineer at a healthcare company with over 1000 employees described, "We're able to treat more patients now because our workloads are performing faster. For us in the health care sector, the most valuable feature is quality of service because we're able to stop the workloads from taking over other workloads that are more important. We're able to treat more patients now because our workloads are performing faster."

Another healthcare IT manager, an IT Administrator for Storage and Virtualization echoed this sentiment, saying, "Our company has a web application for post-lab test results, and with flash, the application is much faster than it used to be. The customers can see results much faster and can then send new requests for labs faster."

Companies that use virtual desktop infrastructure (VDI) can reap productivity gains from all-flash storage. A System Engineer at an energy company commented on this, saying, "The peak loads on a software install for VDI desktops now have lower latency." For his company, all-flash makes it easier to recover from a VDI outage. "The situation before was terrible," he said. "We had things to do and couldn't. It was a high pressure situation. 3,000 people couldn't work for four hours. Now they can start working on time."

Conclusion

Business success with all-flash storage is going to look different for each organization. The fundamentals of business success with all-flash are the same for everyone, however. Simplicity matters, especially when it comes to implementation and integration. Flexibility is essential. Being able to move and consolidate workloads translates into IT agility supporting business agility. IT must understand the business case for all-flash before it can recommend further investment in the technology. The payoff may come from indirect factors, though. Worker productivity and reduced task times are enabled by faster I/O and low latency. Better productivity means higher profitability. The complete business picture should factor in such intangible but valuable considerations. Business success with all-flash is attainable for IT departments that pay attention to how the technology is selected and implemented. The all-flash users quoted in this paper should provide insights into how to make all-flash work in any organization.

About IT Central Station

User reviews, candid discussions, and more for enterprise technology professionals.

IT Central Station is a crowdsourced platform created to connect enterprise professionals with peers for researching and reviewing enterprise technologies.

IT Central Station is committed to offering user-contributed information that is valuable, objective and relevant. We validate all reviewers with a triple authentication process, and protect your privacy by providing an environment where you can post anonymously and freely express your views. As a result, the community becomes a valuable resource, ensuring you get access to the right information and connect to the right people, whenever you need it.

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