



# THE ALL-FLASH DATA CENTRE BY 2020

Myth or reality?



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Improving database performance is **top of mind** for most IT professionals. Production databases in many ways are the heart of an organisation, supporting the transactions, applications, operations, business intelligence, and analytics that **make the business work**.

As the volume and quality of business data grows exponentially, so too does its value to the organisation. In many industries, insightful data and how the business uses the data has become a key competitive differentiator. Production databases are also under more pressure than ever before as they must process many more transactions at unprecedented speeds, while data is growing and IT budgets are not.

One of the most important and effective ways to address database performance and cost challenges is to not simply focus on upgrading or optimising the database software, but to also modernise the underlying hardware infrastructure. This is where innovations such as flash storage can have a major impact.

All-flash storage is on a rapid growth path. According to IDC, sales of all-flash arrays grew **87%** during the first quarter of 2016 vs the same quarter in 2015.

With solid state drive (SSD) capacities going up and the price per gigabyte falling NetApp anticipate that it won't be long before SSDs are cheaper than spinning disk.

**By 2020 it is a real possibility that spinning disk will have gone the way of the dodo.**

This eBook explores why all-flash solutions are gaining ground, the benefits for your business of adopting all-flash arrays and will also look to dispel some of the common misconceptions associated with deploying flash.



# DRIVING FORCES BEHIND ALL-FLASH

Why is all-flash adoption growing so fast? Mainly this is down to the simplicity it provides by eliminating performance concerns and the associated tuning that those concerns cause. But it is important that IT professionals look for the complete all-flash package that is both scalable and intelligent in the provisioning of performance so that it meets today's demands while enabling the next-generation enterprise.

## Three Key Driving Forces:

### **The continuing decline in flash storage prices.**

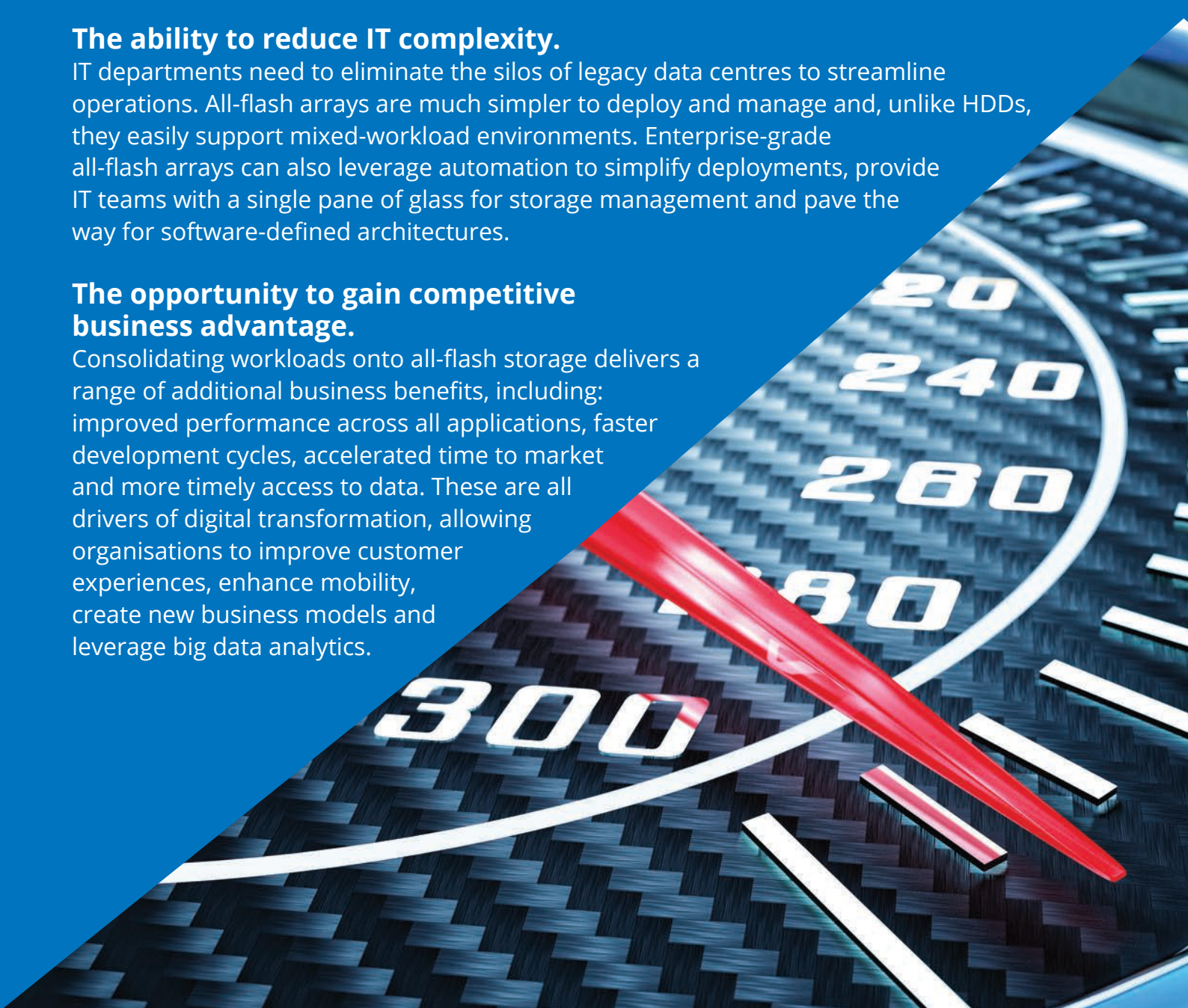
IDC research shows that the effective cost per gigabyte of flash storage is already below that of legacy hard disk drives (HDDs). In fact, more than 30% of IT decision makers cite reduced total cost of ownership (TCO) as one of the primary benefits of using an all-flash array. This is a breakthrough and paradigm shift in how IT leaders perceive and evaluate all-flash storage.

### **The ability to reduce IT complexity.**

IT departments need to eliminate the silos of legacy data centres to streamline operations. All-flash arrays are much simpler to deploy and manage and, unlike HDDs, they easily support mixed-workload environments. Enterprise-grade all-flash arrays can also leverage automation to simplify deployments, provide IT teams with a single pane of glass for storage management and pave the way for software-defined architectures.

### **The opportunity to gain competitive business advantage.**

Consolidating workloads onto all-flash storage delivers a range of additional business benefits, including: improved performance across all applications, faster development cycles, accelerated time to market and more timely access to data. These are all drivers of digital transformation, allowing organisations to improve customer experiences, enhance mobility, create new business models and leverage big data analytics.



# COMMON FLASH MYTHS BUSTED!

All the hoopla around flash has created a groundswell of activity that is both exciting on the one hand, but also confusing and somewhat lacking in clarity about what flash can and can't do for an organisation. Also, flash being in the enterprise is a relatively new phenomenon and IT leaders are still discovering where, when and how much flash is necessary to address their specific workload and application challenges.

Thus, there are some widely held beliefs about flash that may not be particularly accurate or true. Below, we look at the top 5 myths about flash storage and re-frame them with a heavy dose of reality.

## #1

**Flash storage is too expensive for my budget**

**The Truth:** In the early days of enterprise flash, high costs per gigabyte usually meant that only a few carefully chosen workloads with ultra high-performance needs could justify the added cost of flash. Flash technology has since matured, and flash costs have decreased significantly. The use of enhanced data reduction technology has also caused flash storage efficiency to increase. Thanks to these factors, yesterday's boundary-pushing performance is no longer out of reach for organisations wanting to use flash storage to help them consolidate their current workloads.

## #2

**SSDs wear out more quickly than HDDs**

**The Truth:** Enterprise flash drives have impressive reliability. Unlike HDDs, flash drives have no spinning disk or moving parts, increasing their reliability. Also, advanced flash technologies have evolved to significantly increase flash lifespan by grouping (and minimising) the overall number of program/erase cycles made to flash storage cells.

## #3

**Your data cannot be stored efficiently on Flash**

**The Truth:** Yes it can. Your data can be significantly reduced in size before it's stored, giving you the best business and economic value.

Using multiple efficiency techniques, including inline deduplication and compression, Snapshot® copies, virtual clones, and thin provisioning, NetApp ensures you use the flash storage you invest in as efficiently as possible. In fact, NetApp will even guarantee a 4:1 increase in storage efficiency for improved affordability.

## #4

**Flash storage should be used only on high-performance workloads**

**The Truth:** Today's enterprise must be fast, global, mobile, social, digital, and on demand all the time. These simultaneous needs now require business as usual to operate more in the realm of high performance. Many next-generation workloads will benefit from the high performance and low latency of flash storage. Whether an organisation needs to generate greater customer insight and engagement, create new business models, or support an increasingly mobile workforce, the high performance and low latency of flash storage are well suited to support such fundamental business priorities.



# #5

## Flash storage is flash storage. its all the same

**The Truth:** Some application environments have different flash storage needs than other application environments.

One might require the highest possible performance, while another might need robust data management that's more focused on application uptime and fault recovery.

Still other application environments may have erratic, unpredictable growth and require the convenience of scaling out quickly. Whichever scenario,

NetApp offers a flash solution tailored to application needs:

- For those needing the utmost performance with sustained low latency, the top-performing EF-Series all-flash storage is highly recommended.
- For those needing workload consolidation with enterprise application management functionality, NetApp AFF all-flash storage meets these needs with rich data management features that make sure of continuous operation, high performance, and guaranteed efficiency.
- For those needing a next-generation, flash-optimised storage platform built around a webscale architecture, NetApp SolidFire all-flash storage provides guaranteed quality of service for multiple workloads.



# THE **BENEFITS** OF FLASH

Flash simplifies the storage environment and performs better than high performance disk in every way, including reducing cost, increasing flexibility, reclaiming simplicity, optimising performance and boosting capacity.

A recent IDG Research Services survey of found that IT professionals were confident in the ability of all-flash systems to meet some of their organisation's most critical goals, and they were most confident about improving data access and customer satisfaction.

## OPTIMISE PERFORMANCE

Eliminate performance bottlenecks.

- Sustained sub-second latency performance for data
- Reclaim time spent waiting on applications
- Accelerate customer-facing applications and improve the digital experience

## INCREASE FLEXIBILITY

Move your data to where it delivers the most value.

- Optimise data placement across flash, disk and cloud
- Combine SAN and NAS on a single, consolidated infrastructure
- Scale performance and capacity without disrupting operations

## REDUCE COST

Flash is almost the same cost as SAS. SSD capacities are growing fast, and will exceed HDD capacity this year. Flash will add 2:1 space savings for IT. Saving associated cost frees up resources for new revenue opportunities. By 2020, the all flash array (AFA) market is on course to approach \$12B annual through replacing all performance disk.

## RECLAIM SIMPLICITY

Flash eliminates tedious performance tuning and can help free-up time for strategic projects.

- 48% savings in time and money for IT admin
- 16% reduction in maintenance costs
- Average payback period less than 6 months

Another powerful factor for flash is the simplicity it brings to NetApp and to customers.

## BOOST CAPACITY

Flash has historically been deployed for performance workloads, but the unified capabilities of NetApp's next generation of flash enable businesses to support the less performance-sensitive applications which are the bulk of data centre applications.

These include virtualisation, home directories, engineering workloads, IaaS & tier 2 databases.



## SUMMARY

Business success with all-flash storage is going to look different for every organisation. 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.

Flash storage is just scratching the surface of its potential in terms of what it can deliver to organisations in this new compute era, increasingly defined by cloud, big data, mobility and social media.

For many IT leaders, the question is not whether to use flash, but where to use it, and how to use it most effectively. Users want ever-higher levels of performance and availability, and only flash can help meet those expectations.

Making decisions about flash means making the right choices about which solution to use, and which systems integrator to help facilitate the deployment. Making the right decisions also means working from facts, not myths.

**Now that we've helped separate the myths from the reality, perhaps your organisation is ready to take the next step in flash.**



# Creative ITC

**Creative delivers real-world IT infrastructure solutions for today, to take you where you need to go tomorrow. We design and deliver agile solutions across five continents, turning our customers' challenges into stunning business outcomes.**

Creative is a global IT company with a difference. Before forming Creative both our CEO, Eamon Murchan, and Keith Ali our MD, held associate level global infrastructure roles for a worldwide and award winning structural engineering and design firm. So, our strong affinity with the architecture, engineering and construction (AEC) vertical was there from the very start.

We are proud to partner with progressive AEC companies as they look to digital transformation. That's where Creative enjoys playing most.

Recent successes include delivering one of the world's largest virtual desktop infrastructure rollouts for data-intensive CAD users at AECOM. When Arup wanted to pioneer the industry's first FlexPod deployment, a vision that's evolving to software-defined networking, we made that possible too. And we've helped award-winners like Sheppard Robson and Wilkinson Eyre to expand their practices with innovative IT solutions and managed services.

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