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WHITE PAPER

Maximize Your IT With All-Flash Storage

Surprising Economics and Performance for Your Business

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Maximize Your IT With All-Flash Storage

Introduction

In business today, speed matters, and there's no doubt that flash storage is faster than traditional disk-bound alterna-tives. But whether you should move to an all-flash storage solution is a complex business decision that depends on more than just speed. It requires a close look at your evolving business needs and demands, as well as the perfor-mance, efficiency and economics of all-flash solutions.

In this paper, we look at the storage challenges faced by businesses today, where budgets are limited and the amount of data that must be processed and stored continues to soar. We then explore the performance, efficiency and economic benefits of all-flash systems, including the ability to deliver faster access to data, consolidate more data in less space, and reduce costs while increasing application service levels.

For many businesses, shifting to an all-flash storage solution is the right decision, not only to meet a general need for speed, but also to run their businesses better. Improvements may mean making more transactions in less time, speeding application response times, providing better service to customers, or reducing long-term storage costs. Regardless of specific business demands, all-flash solutions provide a compelling alternative, and one that can deliver competitive advantage.

WHAT ARE ALL-FLASH ARRAYS?

All-flash arrays are optimized, enterprise-grade storage devices that use only solid-state storage as the media. These solutions contain no traditional hard disk drives (HDDs), but they leverage persistent flash storage in dedicated environments.

Data Growth Creates Business Challenges

It's no secret that businesses today run on information. Vast quantities of data are pouring in from applications, mobile devices, the cloud and other sources. Businesses have to find ways to keep pace with that flood of informa-tion, or risk falling behind competitors that do. And just to make the challenge more daunting, better solutions must be found even as budgets remain limited and IT staffs are shrinking.

One key piece of the data challenge is storage. Storing more information from more sources is a challenge today, and it will be an even bigger challenge tomorrow. In fact, IDC predicts that the amount of data that must be stored will grow by more than 50% per year for the next several years.

And yet, in our discussions with organizations about their IT infrastructure challenges, we don't hear much about the large-scale data storage challenge. They don't discuss fears about what will happen 5 or 10 years down the line. What we do hear are the day-to-day business challenges that have already emerged as businesses struggle to find better, smarter ways to store their data.

Specifically, business leaders most often describe storage challenges that are related to performance, efficiency and economics.

Performance

Storage plays a key role in application performance and response times. Ultimately, it affects the ability of business to respond quickly to competitive pressures, launch new products, and enter new markets. Whether users are trying to access email or an enterprise resource planning (ERP) system, or trying to perform real-time analytics, I/O delays and system latencies cost businesses time and money.

Often, businesses mention day-to-day storage performance concerns like these:

■ "Information is my business and I need it faster."

■ "My employees and customers are dissatisfied with our slow systems."

■ "I want to increase revenue by conducting more transactions in less time."

■ "My storage isn't keeping up with the performance needs of my applications."

■ "We are struggling to use real-time analytics to improve our decision-making."

■ "We are having difficulty meeting agreed-to service levels for our key applications."

Efficiency

To keep pace with escalating amounts and types of data, businesses are purchasing ever-increasing amounts of hardware. That leads to infrastructure sprawl, high energy costs, and increasing management challenges.

Organizations that are struggling with storage efficiency often tell us:

■ "We can't continue to grow like this. We need a smarter way to expand our storage capacity."

■ "Our capital and operating expenses are growing out of control."

■ "Our management workloads are increasing as each department implements its own workarounds."

■ "We're finding decreased hardware efficiency due to short-term infrastructure fixes."

■ "We need a better way to balance performance capabilities with our environmental and space demands."

Economics

With tight budgets and limited IT staff, businesses can no longer afford to overbuy and overarchitect to meet the needs of high-performance applications. Quite simply, businesses need storage to do more at less cost.

Organizations that are struggling with storage economics tell us:

■ "Storage needs to be economical. I can't afford expensive solutions."

■ "It's pretty simple: We need minimal cost per I/O."

■ "We can't afford to keep adding rack space. And we can't afford to have our power costs continue to spiral upward."

■ "We're spending too much time and money on managing our storage infrastructure."

■ "We're struggling to meet or exceed quality of service and service-level agreements."

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3 KEY BUSINESS REQUIREMENTS

To stand out in today's hypercompetitive environment, businesses need their IT infrastructure to support 3 key business requirements:

- **Accelerate insight.** Businesses with rapid access to all their data can accelerate time to insight. That means bringing products and services to market faster, and recognizing customer needs and concerns before they inhibit business growth.
- **Improve decision-making.** When you know more about every aspect of your business, you make better decisions that drive innovation. Decisions that used to involve guesswork, weeks-old data or partial information can be made with complete, up-to-date information that helps you identify trends, predict market changes, and accelerate time to market.
- **Free up resources.** When your IT infrastructure is more efficient, you improve service levels, deploy applications faster, and free your IT staff for more strategic initiatives. Automating manual processes and simplifying and centralizing data management tasks make your IT team more efficient, which also helps you lower operating costs.

Why Flash? Why Now?

If your business is struggling with any of the storage challenges just described, it makes sense to take a closer look at the benefits of all-flash systems. While flash storage may not be a panacea to address all your business challenges, it certainly offers a compelling alternative for businesses that are in need of improvements in storage performance, efficiency and economics.

ALL-FLASH SYSTEM BENEFITS

- **Blazing performance.**
  - Deliver faster access to data and accelerate applications.
  - Speed decision-making, analysis and productivity.
- **Remarkable efficiency.**
  - Consolidate more data in less space to increase utilization.
  - Reduce IT staff workloads.
- **Surprising economics.**
  - Reduce capital and operating expenditure, and increase application service levels.
  - Reduce environmental costs.

Performance: Faster I/O and Better Responsiveness

Simply put, nothing matches the blazing performance of all-flash storage solutions. Compared to hard-drive-based systems, all-flash solutions improve the I/O data path, remove performance bottlenecks, and drive far superior responsiveness.

Because of the superior performance of all-flash systems, you can accelerate the performance of e-commerce and other critical applications, and accelerate database performance. As a result, your employees will be able to access the data they need to speed decision-making, analysis and productivity. Plus, you can improve customer service levels and enhance competitiveness by getting products and services to market faster.

Efficiency: Reduce Space, Increase Utilization

"Do more for less" is a common mantra for businesses today, and all-flash storage can help you achieve that goal. The key is that all-flash systems simplify the storage environment by consolidating every data type into one high-performance system.

Instead of buying multiple physical drives to make sure you get the IOPS you need, with all-flash solutions, you can avoid overarchitecting to maintain throughput requirements. Greater density in optimized all-flash systems can reduce power costs and enable you to confidently address even the most demanding performance workloads without overprovisioning.

All-flash systems also increase efficiency by automating and simplifying management tasks, which frees up IT resources. Through a central management interface, your IT staff can manage systems from multiple vendors, which reduces operating costs and simplifies migrations.

Economics: Lower Capital and Operating Costs

Compared to nonflash systems, all-flash solutions can dramatically reduce your cost per I/O and significantly lower your power, cooling and space costs. When you move to an all-flash system, you can reduce the total number of disk drives, reduce the physical rack space that's required, and extend the life of your existing assets. All of these benefits help lower expenses.

Additional capacity savings can be achieved through advanced functionality. Along with optimizing data placement through dynamic tiering, some all-flash systems offer thin provisioning as well as file deduplication, which can enhance flash efficiency and lower costs by eliminating redundant file data.

As previously mentioned, centrally managed all-flash systems also reduce operating costs. When your IT staff spends less time managing your storage solution, they have more time available for mission-critical tasks that can help move your business forward.

WHAT TO LOOK FOR IN AN ALL-FLASH SYSTEM
- Centralized, easy-to-use management platform.
- Remote and local replication capabilities for backup and disaster recovery.
- Capacity efficiency, including thin provisioning and file deduplication.
- Ease of integration with key applications, hypervisors and operating environments.
- Ease of upgrade to tiered systems, virtualized external storage and unified solutions.

Hitachi Delivers a Unified All-Flash Solution

At Hitachi, we are well aware of the storage challenges facing today's enterprises. And we have responded by developing an all-flash system that integrates Hitachi Accelerated Flash storage with enterprise storage virtualization. The result is an innovative solution that delivers significant advantages in performance, efficiency and economics.

Hitachi Unified Storage VM All Flash System

Hitachi Unified Storage (HUS) VM all flash system doubles the performance of disk-based systems and dramatically lowers response times. The new, flash-optimized controller software and patented Hitachi Accelerated Flash storage deliver 500,000 IOPS at a sub-millisecond response time with capability of reaching 1,000,000 IOPS.

HUS VM all flash system also maximizes efficiency, doubling the density of the hard-drive-based HUS VM. The solution is supported by the same award-winning Hitachi Command Suite as the rest of the Hitachi storage lineup, which makes management capabilities easy to learn and use. In addition, systems with file deduplication offer an additional multiplier effect to flash efficiency.

> "CIOs and CTOs should and will start to architect systems in a profoundly different way than those historic disk-bound systems."
> — *David Floyer, Wikibon, March 2013*
>
> "People who don't have Hitachi and are looking for very-high-performance arrays ... should look hard at this."
> — *David Floyer, Wikibon, November 2012*

Best of all, the HUS VM all flash system delivers the benefits you need at a price you can afford. You can achieve a 60% better cost per I/O than similar disk-based systems, and do so in less space, with less power. It's little wonder more than half of the organizations that use HUS VM have achieved a payback on their storage virtualization investment within 1 year.

READ MORE ABOUT ALL-FLASH STORAGE
- Comparative Guide: Choose the Best Unified Storage Solution for Your Virtualization Needs
- Solution Summary: Top 10 Advantages of the Hitachi Unified Storage VM All Flash System
- Infographic: Hitachi Unified Storage VM All Flash

Summary: Respond Now to Emerging Business Requirements

As data demands increase and budgets remain stagnant, all-flash solutions can help you address the practical, day-to-day business challenges you face today and will face in the future. From poor-performing applications to increasing management requirements and escalating costs, all-flash solutions can help.

HUS VM all flash system provides significant advantages in the areas you need most: performance, efficiency and economics. It delivers blazing performance and industry-leading storage virtualization. Upgradable to unified and tiered storage, HUS VM all flash system can help your business accelerate insight, improve decision-making and ultimately separate from the competition. But to gain those advantages, you must move fast: After all, in business today, speed matters.

Take the next step to manage data with ease and efficiency, improve productivity, and provide higher service levels. Let us show you how Hitachi Unified Storage VM all flash system can transform your data center storage.

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