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WHITE PAPER

Maximize IT for Real Business Advantage

3 Key Technologies to Harness Information Faster and Increase Your Pace of Innovation

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Maximize IT for Real Business Advantage

Executive Summary

The need to fully leverage all of your data, all of your infrastructure, and all of your IT staff has never been more important during these times of tightening budgets and evolving business demands. In response, businesses need to maximize their IT by getting increased performance, efficiency and economics out of their infrastructure and resources. Maximizing IT accelerates insight, improves decision-making and frees up resources, all of which are critical in today's hyper-competitive business environment.

This paper focuses on 3 key technologies that provide particularly compelling opportunities to maximize IT:

- All-flash systems accelerate access to information for faster decision-making, analysis and productivity.

- Unified storage solutions enable you to process more and diverse workloads in less time while driving capacity efficiencies.

- Converged infrastructure solutions enhance your IT staff productivity through improved orchestration and automation, while avoiding costly over- or under-provisioning.

Introduction

At one time or another nearly all businesses have dealt with shrinking budgets, escalating demands or a rapidly shifting marketplace. The difference today is that all of these challenges are converging at once to create unparalleled pressures on organizations. The common refrain we hear from companies in all sectors is they have less time than ever to develop and deliver new products and services to more customers. And they have to do so with flat or decreasing budgets.

The best response, and really the only response that can keep your business in front of the curve, is to maximize your IT. While this sounds deceptively simple on the surface, we've uncovered ways for you to get the most out of your IT organization by maximizing the performance, efficiency and economics of your infrastructure and resources. Maximizing IT accelerates insight, improves your decision-making and frees up resources. These benefits give you the ability to increase your pace of innovation and harness information to build competitive advantage.

This paper focuses on 3 key technologies that provide particularly compelling opportunities to maximize IT. First, all-flash systems allow you to accelerate access to information for faster decision-making, analysis and productivity. Second, unified storage solutions enable you to process more and diverse workloads in less time while driving capacity efficiencies. And third, converged infrastructure solutions can help you enhance your IT staff productivity through improved orchestration and automation, while avoiding costly over- or under-provisioning.

All 3 of these solutions help you do more with less, and in today's hyper-competitive, fast-moving marketplace, that's more critical than ever. Regardless of new and unexpected challenges that are sure to arise, businesses that are able to maximize IT today will be able to accelerate insight, improve decision-making and free up resources for years to come.

Confront New and Emerging Challenges

In discussions with customers about their IT infrastructure challenges, we've found 3 recurring themes: performance, efficiencies and economics.

Performance

Fast-changing business models, competitive pressures and relentless data growth are placing unparalleled demands on IT operations. In response, businesses need far greater insight into all levels of the business, and they need that insight faster than ever to support better decision-making.

Businesses are often so overwhelmed by the amount and variety of file and other data cascading through their operations that they struggle just to store the data, let alone to make it easily accessible for analysis and interpretation. For businesses to be more efficient, they need to be able to analyze real-time data from multiple systems quickly, in hours rather than weeks or months. This capability allows them to turn their attention from simply managing the deluge of data to deriving meaningful business insights.

Better performance requires much more than faster I/O processing. Innovation depends on easier deployments, more capacity and easier scalability, among other performance improvements. All of that is needed, even as businesses process and store more data from more sources than ever before.

Efficiencies

Businesses struggle to manage increasing complexity and are looking for new solutions to keep pace. Complicating the process today are the potential combinations of user devices, networks, locations and resources, which are more numerous, more dynamic and more costly than ever before.

To be more efficient, businesses need holistic solutions to replace the siloed approach to building today's common infrastructure. For instance, virtual machines, servers, network and storage should not be provisioned in isolation. Doing so will take longer and lead to inefficiencies such as over- or under-provisioning, as compared to provisioning the entire compute stack (cross-domain) in context.

Data also needs to be stored in more efficient ways. Not all data is created equal, and storing non-mission-critical data on the most expensive tier of storage is a costly mistake. Ideally, data should be migrated automatically to the most appropriate tier, based on the value of the data and customized business rules.

Economics

IT budgets are shrinking, flat or slightly rising. Not one of these conditions is nearly enough to meet growing IT demands using traditional methods. During the recent recession, IT organizations reduced expenditures, put off upgrades and eliminated whatever excesses they could find.

As we emerge from the recession, businesses must overcome the funding gap and find a way to grow, or risk being passed by more nimble or better-prepared competitors.

IT can't cut much more than has already been cut, and instead must find better, smarter ways to maximize IT. They must replace traditional IT infrastructure with better performing, more efficient holistic solutions that deliver faster insights and have a lower total cost of ownership (TCO).

Maximize IT With 3 Key Technologies

Given the challenges described, it's essential for businesses to maximize IT by improving performance, efficiency and economics. When you do that, you accomplish several things:

- **Accelerate insight.** Businesses with rapid access to all their data can accelerate time to insight. Ultimately, that results in bringing products and services to market faster, and recognizing customer needs and concerns before they inhibit business growth.

- **Improve your 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 instead be made with complete, up-to-date information. Timely data 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 up IT staff for more strategic initiatives. Automating manual processes and simplifying and central-izing data management tasks makes your IT team more efficient, which also helps you lower operating costs.

Numerous IT solutions can help you maximize IT and achieve these benefits. However, these 3 solutions are particu-larly relevant to today's challenges: all-flash systems, unified storage and converged infrastructure.

All-Flash Systems

Driven by the need to provide better storage performance and efficiency at a lower cost, more businesses are turning to flash solutions. Compared to hard-drive-based systems, all-flash systems greatly improve performance, and deliver greater durability and capacity.

All-flash systems simplify the storage environment by consolidating all data types in a high-performance, unified system. Increasing density means lower power use in the same rack space for long-term cost benefits. In addition, you can consolidate more data in less space, which reduces space requirements and increases capacity utilization. Additionally, cooling costs are typically much lower, as is the cost per I/O.

Another advantage of all-flash systems is their ease of management, which frees up IT resources. A central management interface manages systems from multiple vendors to reduce operating costs, simplify migrations and increase utilization.

ALL-FLASH SYSTEM BENEFITS

- Maximize performance.
  - Deliver faster access to data and accelerate applications.
  - Speed decision-making, analysis and productivity.
- Maximize efficiency.
  - Consolidate more data in less space to increase utilization.
  - Reduce IT staff workloads.
- Maximize economics.
  - Reduce capital and operating expenditure (capex and opex) and increase application service levels.

Unified Storage

Organizations of all sizes are overwhelmed with unstructured data growth demands, rising costs, complexities and difficulties meeting service level agreements. While data capacity, applications and virtual server environments are growing at exponential rates, budgets are not. Data centers must become more efficient, more cost conscious and more effective to successfully meet these challenges.

To handle the massive and growing amount of file-based data and applications in today's environments, organizations need efficient, highly scalable and high-performance storage systems, but at a lower TCO. Unified storage systems are ideal for file sharing, file server consolidation, data protection and application data storage for Oracle, Microsoft® and virtual environments.

With the right unified storage solution in place, you access information faster, process more and diverse workloads faster and scale easily. Plus, you keep pace with service level commitments for your critical business applications. And you do it all at a lower TCO with vastly reduced management problems and costs.

UNIFIED STORAGE BENEFITS

- Maximize performance.
  - Speed access to information.
  - Process more and diverse workloads faster.
- Maximize efficiency.
  - Deduplicate file data immediately without impacting work flows.
  - Place the right data on the right tier with intelligent tiering and automated migration.
- Maximize economics.
  - Lower TCO for file share and virtual server environments.
  - Lower capex by storing more data with the same capacity.

Converged Infrastructure

IT organizations spend much of their time and resources evaluating and installing increasingly disparate hardware components. Integrating servers, storage and networking infrastructure, and often adding a virtualization layer on top can be extremely difficult and time-consuming. And there's no guarantee the applications will work as well or integrate as easily as advertised.

A converged infrastructure solution addresses these challenges. It provides a foundation for your IT infrastructure, centralizing and orchestrating the management of your servers, storage and networking. The entire infrastructure can be managed from a single interface, reducing costs as well as demands on your IT staff. Plus, a converged infra-structure solution can streamline your data center resources, help you scale service delivery, and reduce power and cooling demands.

Moving to a preconfigured, tightly integrated turnkey solution also makes deployment easier and faster. You can deploy only what you immediately need, and expand as necessary for optimal ROI and easiest deployment. Ideally, the solutions should support a wide range of top-tier applications and offer an easy-to-use central management solu-tion that enhances IT staff productivity and helps reduce performance problems.

CONVERGED INFRASTRUCTURE BENEFITS

- Maximize performance.
  - Optimize converged infrastructure applications with flash, and size them for different types of workloads.
  - Enhance IT staff productivity through orchestration and automation.
- Maximize efficiency.
  - Enhance IT staff productivity with a turnkey infrastructure platform.
  - Deploy production-ready systems quickly and easily with multiple configurations.
- Maximize economics.
  - Deploy only what needed, and expand when needed for best ROI and easiest deployment.
  - Reduce capex and opex, and enhance IT staff productivity.

Deliver the Solutions That Maximize IT

The business demands we've described have driven Hitachi Data Systems for the past several years. We know that traditional approaches to managing IT infrastructure no longer meet your needs. In response, we have developed several industry-leading products designed to help you maximize IT.

Hitachi Unified Storage VM All Flash System

The Hitachi Unified Storage (HUS) VM all flash system integrates Hitachi Accelerated Flash storage and enterprise storage virtualization to deliver advantages in performance, efficiency, cost, virtualization and tiering. The system doubles the performance of the hard-drive-based HUS VM, largely because of the integration of Hitachi Accelerated Flash storage. Compared to the commodity solid-state drives found in competitive systems, the flash memory con-troller Hitachi developed for Hitachi Accelerated Flash storage delivers better performance, durability and capacity.

Hitachi Accelerated Flash storage speeds I/O processing to increase flash device throughput. It delivers faster access to data for virtual desktop and e-commerce applications. And, it accelerates database, online transaction and online application processing (OLTP and OLAP), and messaging infrastructure performance.

The HUS VM all flash system also maximizes efficiency and economics. The solution greatly simplifies the storage environment by consolidating all data types in 1 unified system. It doubles the density of the hard-drive-based HUS VM, and uses less than half the power in the same rack space. Over 50% of HUS VM customers have achieved a payback on their investment within 1 year, as they have dramatically reduced their power, cooling and space costs, and lowered the cost per I/O by up to 64%.

> *Deliver advantages of performance, efficiency and cost with Hitachi Unified Storage VM all flash system.*

Hitachi NAS Platform

Hitachi NAS Platform (HNAS) systems, as NAS gateways for unified storage, boast the highest performance and usable capacity in the industry. This will help you consolidate your storage and save time and money.

Hitachi NAS Platform is an advanced, high-performance and highly scalable network attached storage (NAS) system. HNAS offers nondisruptive deduplication for maximum capacity efficiency with no degradation of performance. The platform supports your largest big data workloads and consolidates multiple NAS filers at a lower TCO. Plus, HNAS simplifies data management and increases capacity utilization, while offering the scalability and flexibility necessary to manage workloads of enterprise data centers, medium organizations and remote data centers.

Moving to HNAS simplifies your overall IT infrastructure and reduces the complexity of storage management. Advanced virtualization, tiering and deduplication capabilities give you the efficiency and agility you need, and the automated operation results in lower operational costs. The bottom line: HNAS offers the exceptional performance that businesses with performance-driven applications need to improve productivity and competitiveness.

> *HNAS offers the exceptional performance that businesses with performance-driven applications need to improve productivity and competitiveness.*

Hitachi Converged Infrastructure Solutions

The Hitachi Unified Compute Platform (UCP) family is a broad portfolio of converged infrastructure solutions combining world-class HDS servers and storage with industry-standard networking and software management in fully integrated packages. With UCP solutions, IT organizations can deploy a flexible solution right away, mixing and matching many of the components. For faster deployments, you can install a tightly integrated turnkey converged infrastructure solution for private cloud. Our comprehensive, pretested and cloud-ready infrastructure can be deployed quickly and easily managed.

UCP solutions enable you to reduce unnecessary costs by running top-tier infrastructure applications without overpurchasing or overprovisioning unnecessary equipment. The entire solution stacks are certified, so you prevent compatibility and support issues, and if unexpected issues arise, Hitachi handles all your support needs for the whole solution.

> *Quickly and easily* deploy converged infrastructure solutions *to accelerate the applications you use most and realize business efficiencies and business value.*

Summary: Address Your Most Pressing IT Challenges

Today, 82% of Fortune Global 100 companies use Hitachi solutions to turn their data into useful information and innovation. And that's just 1 example of Hitachi solutions helping businesses meet today's new and emerging challenges.

As rising demands and shrinking budgets continue to drive the need to maximize IT, Hitachi Data Systems is ready. We provide all-flash, unified storage and converged infrastructure solutions that can help you maximize the performance, efficiency and economy of your IT infrastructure to drive your business forward.

Hitachi Data Systems helps you accelerate insight, improve decision-making and free up resources. These benefits place gets you ahead of the curve by driving competitive advantage and business innovation. That's maximizing IT.

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