

The ability of Danish hosting provider Netic to meet service-level agreements (SLAs) for its customers depends heavily on the reliability, performance, and availability characteristics of midrange NVMe-based storage from Hitachi Vantara.

Storage Reliability Critical to Danish Hosting Provider's Success

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Introduction

Netic provides business-critical information technology (IT) operations and application life-cycle management that is ITIL compliant for private companies and public institutions. The firm also sells IT infrastructure solutions to its customers. Located in Aalborg, Denmark, Netic has made a name for itself in meeting stringent service-level agreements (SLAs) for both performance and availability and delivers hardened end-to-end security to protect customers' data assets in the digital era. Many of Netic's clients use the company as a starting point for hybrid infrastructure or an evolutionary transformation to high-performing public cloud.

Founded in 2002, Netic worked with several established storage providers as it was building out its storage infrastructure early on. Given Netic's business objectives, the company's storage had to be highly performant and highly available, and in 2009, Netic moved to Hitachi Vantara (Hitachi Data Systems at the time) as its primary storage infrastructure provider. The vendor's proven ability to deliver both high performance and very high availability was an important driver of this decision as was the vendor's highly responsive technical support. Netic's past experience with other storage providers underlined the importance of these capabilities, making them features worth paying for to ensure Netic continues to meet its customers' SLAs as workloads evolve over time. Across its customer base, Netic is supporting a variety of different workloads, including low-latency transactional databases such as Oracle, container-based workloads, and a high percentage of virtualized workloads running on VMware.

SOLUTION SNAPSHOT

ORGANIZATION:

Netic, a hosting provider for business-critical IT operations located in Aalborg, Denmark

ORGANIZATIONAL CHALLENGES:

Manage end-to-end, business-critical application infrastructure to stringent performance and availability SLAs

SOLUTION:

Netic has built its business-critical storage infrastructure around technology from Hitachi Vantara since 2009, primarily because of the vendor's proven track record in delivering high availability, predictable performance, and high reliability for mixed enterprise workloads.

PROJECT DURATION:

Within five years of its founding and after having worked with several enterprise storage providers, Netic made Hitachi Vantara its tier 1 storage provider and has continued to stay with the vendor across multiple technology generations.

BUSINESS BENEFITS:

Netic is able to consistently deliver on its SLA promises to its clients for both high performance and high availability.

Implementation

To meet stringent customer requirements for performance, availability, and security, Netic runs a high percentage of customer workloads on dedicated storage systems in on-premises private cloud infrastructure. Today, most of these systems are midrange Hitachi VSP E series arrays. The use of dedicated midrange storage is driven by Netic's need to sandbox workloads by customer for security reasons and also to limit the "blast zone" (i.e., fault domain size) in Netic's environment. The VSP E series platforms are all based on the nonvolatile memory express (NVMe) storage protocol, a critical technology foundation that allows them to continue to deliver predictable low-latency performance even as workloads scale and I/O profiles vary. Data on the VSP E series systems is protected with dual parity RAID and encrypted for security, and Netic has also deployed stretch cluster technology (based on Hitachi's Global Active Device feature) across sites to provide business continuity and disaster recovery capabilities in the event of a rare site-compromising event. Scaling the storage infrastructure is as easy as adding new VSP E series nodes, with Hitachi Vantara's Hitachi Ops Center providing highly scalable, single-pane-of-glass management across a customer's entire fleet of E series arrays.

Challenges

The key challenges for Netic revolve around providing high reliability (i.e., few failures), high availability (i.e., upgrades and failures, if and when they occur, do not impact application services), and consistently predictable performance (even as workloads scale). While many storage vendors claim to provide these capabilities, Netic was specifically looking for a vendor with a proven track record in these areas with business-critical workloads for its storage infrastructure.

Benefits

Early on, Netic had worked with high-end storage from Sun Microsystems (Sun StorEdge 6000s and 9000s). The Sun StorEdge products were based on technology OEMed from Hitachi by Sun and provided Netic's first introduction to Hitachi storage. As Netic became familiar with Hitachi's Storage Virtualization Operating System (SVOS), it also noted the reliability, availability, and performance characteristics of the storage arrays — considerations that ultimately moved the company toward increasing use of storage technology from Hitachi. As the relationship developed, Netic noted that Hitachi's own configuration rules for Hitachi storage systems were strict but absolutely resulted in overall better availability. At the time, these storage systems used hard disk drives (HDDs) instead of solid state drives (SSDs), and Hitachi's "best practices" recommendations were particularly important in meeting Netic's service-level objectives.

In 2009, Netic purchased its first array from Hitachi directly — the Hitachi HUS VM — using it as the standard for its tier 1 (most business-critical and highest-performance) workloads. In subsequent years, Netic moved to the Hitachi VSP once it became available and also purchased other storage platforms from Hitachi, including the Hitachi Content Platform (HCP) for unstructured data storage. In dealing directly with Hitachi, Netic was covered by the vendor's 100% data availability guarantee, although that claim was less important in its purchase decisions than the track record Hitachi storage had established for itself within Netic.

With its focus on performance, Netic moved to all-flash systems from Hitachi as soon as they became available. The performance density and the ability to handle I/O spikes much more cost effectively than HDD-based systems were important considerations. Compared with Serial Attached SCSI (SAS), NVMe technology further improved these two capabilities, and Netic moved to the VSP E series systems supporting NVMe soon after they were introduced by the vendor (in 2020). Although Netic doesn't need the performance of Intel Optane-based storage devices yet, NVMe will allow those devices to be easily integrated into VSP E series systems if and when that level of performance is needed.

For those few workloads that require sub-100 microsecond latencies, Netic uses NVMe (PCIe) SSDs deployed directly in application servers, although it generally prefers to house all storage capabilities within the storage infrastructure for better sharing and easier management. As more workloads require this kind of latency, Netic will ultimately look at NVMe over Fabrics host connections to the storage infrastructure. While today the VSP E series systems do not support NVMe over Fabrics, Netic will be able to move to that with existing arrays and without a forklift upgrade if and when that performance is needed.

Hitachi VSP E series midrange systems use the same storage operating system (SVOS) as the larger VSP 5000 systems. Hitachi has been shipping and evolving that storage operating system since it was first introduced in 2014 for use on Hitachi's high-end storage arrays. SVOS is a true enterprise-class storage operating system and has been proven in thousands of mission-critical deployments over the past eight years. It is significant that Hitachi uses the same software on its midrange platforms because this gives customers true enterprise-class capabilities at a midrange price point. Hitachi's ongoing commitment to use SVOS across its block-based storage arrays has also allowed Netic to extend its SVOS-based expertise across multiple storage technology generations, bringing a measure of future proofing to its training investment that results in higher administrative productivity. The very rich feature set of SVOS gives Netic the flexibility and granularity to fine-tune the storage pools in its VSP E series arrays to meet a variety of different workload requirements.

Hitachi's support for nondisruptive software and firmware upgrades has proven to be extremely solid. Netic does have some other storage platforms from other vendors for tier 2 storage, but the only systems it performs upgrades on during the day are its Hitachi arrays (which today include VSPs as well as E series). The Hitachi systems' active/active controller design provides the ability to hot plug a replacement controller without any link failures should that ever become necessary. Since 2009, Netic has suffered two controller failures, but neither case impacted application service availability, and the Hitachi system performed as expected to continue to deliver unfettered access to data.

Throughout the relationship, Hitachi support has been very good. With its 24 x 7 "follow the sun" support contract on Hitachi infrastructure, Netic has access to seasoned tech support personnel with long-term Hitachi experience who offer rapid responses. Steen Jensen, the longtime CEO of Netic, commended Hitachi for both the continuity of its service (a factor that contributes to the quality of support) and the "trusted provider" relationship he has with the local account team in Denmark. For Jensen, the three key considerations in the decision to move to and stay with Hitachi as Netic's tier 1 storage provider are clear: high availability, predictable performance, and high reliability. "In my experience, Hitachi provides the most reliable storage systems, and that provides me value on which I can base our growing business," said Jensen.

For Netic, the three key considerations in selecting and staying with Hitachi storage are high availability, predictable performance, and high reliability.

Methodology

The project and company information contained in this document was obtained from multiple sources, including an in-depth interview with Netic CEO Steen Jensen, information supplied by Hitachi, and Netic corporate documents.

About the Analyst



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Eric Burgener is Research Vice President within IDC's Enterprise Infrastructure practice. Mr. Burgener's core research coverage includes Storage Systems, Software and Solutions, quarterly trackers, end-user research as well as advisory services and consulting programs. Based on his background covering enterprise storage, Mr. Burgener's research includes a particular emphasis on flash-optimized arrays, emerging persistent memory technologies, and software-defined storage. He is an active participant in the IT Buyers Research Program at IDC and blogs throughout the year on the topic of Infrastructure and Data Management.

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