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Operations
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INDUSTRY Banking/Finance

SOLUTIONS *Enterprise Platform, Storage Management, Business Continuity and Replication*
Hardware — Hitachi Virtual Storage Platform
Software — Hitachi Dynamic Provisioning (HDP), Hitachi Universal Replicator (HUR), Hitachi Command Suite
Services — Residency Services provided by Hitachi Data Systems Global Solution Services



Financial Services Processing Giant TSYS Deploys Hitachi Virtual Storage Platform for Mission-critical Data Compliance and Performance

TSYS is a Fortune 2500 company that orchestrates end-to-end commercial credit card processing and information management for some of the world's biggest financial institutions and their end users. To exceed its own global objectives for persistent data growth, encryption of at-rest data and substantial performance improvements, TSYS implemented Hitachi Virtual Storage Platform.

Today's marketplace is global, with an infinite number of online purchases and paperless payments happening anywhere, at any time. Behind more than 50 million daily financial transactions is a hardworking company dedicated to providing a better experience for buyers and sellers. TSYS provides a wide range of electronic payment solutions for merchants and their customers, including consumer finance, credit, debit, healthcare and loyalty programs, as well as prepaid, chip and mobile payments.

Headquartered in Columbus, Georgia, with offices throughout the Americas, Europe, Middle East, Asia and Asia-Pacific, TSYS supports payment services across 85 countries for approximately 300 clients and has a relationship with more than half of the top 20 global banks. From actually producing the plastic credit cards to handling online card activation and statement

processing, TSYS is a full-service organization specializing in secure, web-browsing services and products with real-time functionality and 24/7 access. Among its products are CentreSuite and Credit Care, which are designed to improve client profitability and customer retention.

Focus on Data Growth

TSYS has a primary production and corporate card processing facility located in Golden, Colorado, where many of the company's technical support staff and software developers reside. The site also houses a network operations center and help desk for clients, consisting of more than 650 servers that support 9 key platforms and hosted services.

Stored business data at TSYS has been steadily growing at 35% year over year, keeping pace with industry averages.

The data being managed, its security and availability is mission critical to TSYS, and ensuring the access to and protection of its clients' transactional information is of premium importance. As a company that handles sensitive cardholder information for major credit, debit and corporate cards, TSYS is required to comply with data security standards issued by the Payment Card Industry (PCI) Security Standards Council, a global oversight forum accountable for increasing controls around cardholder data to reduce card fraud.

"The Golden facility is at the heart of monitoring across all of the distributed application suites. It's where we synthesize the end-user experience across all core products and client-facing web interfaces. Organizations such as ours that process financial information must be PCI certified, which requires encryption of at-rest data. We also have a very limited floor space footprint there, and must remain cognizant of our heating, cooling, power and space consumption. We needed to collapse the storage footprint yet increase the capacity at the same time. On the performance front, we wanted to dramatically reduce storage latency to provide better response times across the database and application environments," explains Senior Director of Distributed Technologies for Operations at TSYS, Mark Holt.



"We needed encryption technology for at-rest data, less physical footprint with greater storage capacity, and performance improvements for database responsiveness. The Virtual Storage Platform gave us all that and much more."

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Process New Ways to Manage

To adeptly manage its storage growth and meet regulatory and industry demands, TSYS wanted to expand server virtualization and disaster recovery capabilities, while gaining greater simplicity and scalability. “We have heavy storage consumption and utilization. The typical content we manage is rich and diverse: lots of images and PDF records, which can be very demanding to manage and provide instant access to clients. Consequently, we’ve been somewhat limited to what historical data we can offer online. I manage centers all over the world. Part of my overall IT strategy is to enable our virtual 1st initiative, which is to consolidate our physical footprint by taking advantage of virtualization,” Holt says.

Disaster recovery is currently being outsourced to a colocation facility. The long-term disaster recovery goal is to be able to replicate data from Golden to wherever it needs to, and to migrate applications online without disruption to users. Holt also wants to unite storage for the Golden production data. “By moving to 1 platform, we will gain a single command center for managing and scaling production storage. Greater scalability may help us to extend client offerings and provide additional functionality more quickly in the future,” continues Holt.

With the new PCI compliance deadline looming and growing concerns around database responsiveness, Holt enlisted the help of Hitachi Data Systems. “We needed to be able to meet the PCI requirements without taking an outage or interruption of production systems. That meant moving 40TB of data without impact to our client base, in a very short period of time. The Hitachi Virtual Storage Platform had everything we were looking for in a solution. We needed encryption technology for at-rest data, less physical footprint with greater storage capacity, and performance improvements for database responsiveness. The Virtual Storage Platform gave us all that and much more,” he says.

TSYS Credits Hitachi Technologies and Services

Prior to implementing its new storage solution, TSYS worked with Hitachi Data Systems Global Solution Services to thoroughly scope the project. Holt decided to also leverage Residency Services with project manager Daniel Erickson from Hitachi Data Systems for managing the project and migration onsite and accelerating the deployment. “I can’t say enough about the pre-work that went into making this project such a success. The due diligence, the service and the knowledge provided by the Hitachi team surpass any we’ve ever encountered in the industry. From conducting onsite analysis of existing infrastructure and understanding our unique needs, to managing the configuration, migration and build-out, our Hitachi onsite resident and all the services staff we’ve engaged throughout this effort have been outstanding. They’ve been key to TSYS being able to implement so quickly and smoothly,” states Holt.

TSYS selected Hitachi Virtual Storage Platform (VSP), an economically superior storage architecture designed to address the dynamic data environments and changing business requirements with 1 platform and many cost efficiencies. VSP provides 3-dimensional scaling to dynamically scale up, out and deep, combining with Hitachi Dynamic Provisioning to leverage substantial throughput.

“Dynamic Provisioning is really the cornerstone of how we’re storing data on the VSP. It’s the throughput that enables a large number of transactions to be handled simultaneously on a smaller footprint, and able to scale to tremendous size without impacting performance,” says Erickson.

At TSYS, the VSP was configured with 300TB of usable capacity across 4 racks and varying performance-level disks, including high-performance SAS drives on Tier 1 and Tier 2, and 2TB SATA drives on Tier 3. To satisfy the annual PCI certification, TSYS is using the back-end directors internal to VSP. The directors are capable

of encrypting data while at rest, with XTS-AES 256-bit encryption at the hardware level and no overhead. VSP also combines with Hitachi Command Suite v7, which delivers a comprehensive management suite and common interface to help TSYS unify storage, achieve highest levels of operational efficiency and facilitate a greater virtualization landscape.

“With this project, we’re collapsing up to 150 physical servers and moving to 30 VMware servers that will function in 4-node clusters. VSP enables us to fully realize our virtualization initiatives and speed the delivery of moving from physical to virtual environments. The reduction in physical equipment translates into immediate savings in heating and cooling costs and the recovery of valuable data center floor space,” Holt furthers.

The company is already taking strides toward its long-term disaster recovery goals with VSP implementation. TSYS will soon be using Hitachi Universal Replicator (HUR) software to replicate production data directly from Golden to Columbus, and teeing up VMware Site Recovery Manager and VMware vMotion for the data migration. “The Virtual Storage Platform and HUR software give us the flexibility and footprint we need to do site recovery and allow production data to live in multiple locations, while allowing data movement in real time with transparency. With this in place, we’ll be able to eliminate the cost of the colocation facility. VSP helps to give us the depth we envisioned for our disaster recovery and restore capabilities,” he says.

Activate an Array of Cost Efficiencies and Capabilities

The Virtual Storage Platform has only been deployed at the Golden facility a short time. However, the implications of its success are significant. “So far, we’ve been able to dramatically collapse our physical footprint and double our storage. Golden is our primary location for VMware proofs of concept and virtualization. Plus, to date we’ve virtualized 40% of production servers and 90% of development

servers. Storage latency has decreased 10-fold, from 60 milliseconds to fewer than 5 milliseconds, and testing with the new hardware shows a 200% improvement in database reorganization and maintenance times," says Holt.

The entire back end of TSYS monitoring solutions now sits on VSP. Longer term, all the office systems will also dwell on the system. Because space is at a premium in Golden, the existing storage systems have been reassigned to non-production storage in the Columbus center.

"We're going into peak season with heavy database activity. The VSP is handling it all very well, enabling the workloads to be distributed across RAID groups for the dynamic pools. The implementation with VSP and dynamic provisioning and VMware seemed so easy from our end. We were able to leverage all the capabilities of virtualization, and rolled this out in 60 days instead of what normally might have been 6 months. This is the pilot program for future migrations at TSYS," adds Erickson.

"We have an optimal framework at Golden now along with a more advanced suite of capabilities. We also have standardized hardware and software that allow us to manage larger environments without increasing staff. The VSP lets us scale much larger and invoke a greater number of projects, enabling us to extend our offerings for clients and end users. For example, we can now go deeper into providing additional rich content and historical statements or data. The performance improvements and versatility are visible across all our core solutions. I would definitely mark this experience as a tremendous success," finishes Holt.



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