

## Hitachi Storage Solutions at Work

### University HealthSystem Consortium

**INDUSTRY** Health Care/Education

**SOLUTIONS** **Storage Virtualization**

**Hardware** — Hitachi Universal Storage Platform™ V, Hitachi Adaptable Modular Storage 500

**Software** — Hitachi Dynamic Provisioning, Hitachi Tiered Storage Manager, Hitachi Basic Operating System and Basic Operating System V, Hitachi Tuning Manager, Hitachi Dynamic Link Manager, Hitachi ShadowImage® Heterogeneous Replication



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*Steve Carlberg  
Project Manager  
University HealthSystem Consortium*

# Large Health Consortium Resuscitates Ailing IT Environment with High Availability and Storage Virtualization

University HealthSystem Consortium (UHC) is an alliance representing 90 percent of academic medical centers and affiliated hospitals in America. Hundreds of these health organizations rely on UHC for unique programs and services, including critical online knowledge bases and business intelligence capabilities. To support its exclusive offerings and corresponding data storage requirements, UHC implemented a highly available virtualized storage environment with Hitachi Universal Storage Platform™ V running Hitachi Dynamic Provisioning software.

At a time when the health care industry is faced with burgeoning costs and constraints, the University HealthSystem Consortium remains a steadfast beacon of change. Representing hundreds of medical facilities and hospitals, UHC offers products and services designed to help its members achieve greater clinical, operational and fiscal performance. Web-based benchmarking tools and critical online knowledge bases are available to members seeking business intelligence to build and maintain their market

shares. Maintaining and accessing this top-notch information depends upon availability of massive amounts of data storage.

## In Need of Storage Triage — *STAT!*

Keeping up with an avalanche of data growth demands can quickly overburden and outdate most conventional storage infrastructures. UHC was experiencing frequent outages and sluggish response times for customer-facing applications in an already complex storage

environment. Heavy data mining and intricate database queries were straining I/O capabilities, and database volumes had doubled three times in six years, quickly diminishing storage capacity and performance.

Also, older technology and a lack of dedicated storage personnel made it difficult to avoid downtime required for changes and updates. The existing IT architecture was unable to expand beyond managing current requirements to embrace additional application demands and newer technologies. UHC needed a highly reliable, efficient and scalable storage system that could better safeguard the data which supports so many members.

“Our small staff was overloaded with storage and downtime issues, and customers were beginning to complain about performance. UHC members depend on the availability of our data. We wanted to achieve greater levels of durability, protection and expandability with a storage infrastructure that would grow with the business and help us keep our commitments to members,” says Steve Carlberg, project manager at UHC.

## Finding a Catalyst for Tiered Storage

True to its company mission for change, UHC management issued a clear directive to the small IT staff: find the best storage solution available. Carlberg and staff developed a set of IT prerequisites to help with what became an exhaustive search among top vendors. “This decision was huge because its outcome represented a critical turning point in the way UHC processes data. We knew that the wrong solution might be hard to implement and manage — or worse, lack the scalability we needed for future growth,” explains Carlberg.

The UHC storage environment included 180 servers, a StorageTek FLX280 used to store data collected from member hospitals and Microsoft® SQL Server 2000 as the primary database application. The complexities of the architecture consumed administrative time for tasks such as manually balancing system

loads and labor intensive data migration and microcode updates. And at the current rate of data retention, administrators estimated that the FLX280 would run out of space in about a year. A new solution would need to boost system security, availability and scalability, eliminate unplanned downtime and accommodate an SQL Server upgrade. Cost efficiencies were also a priority, and Carlsberg was interested in reducing the power draw per server and simplifying storage management.

UHC narrowed the list of contenders to two vendors with tiered storage virtualization capabilities. From there, only one vendor was

Dynamic Provisioning software enables nondisruptive volume expansion and “thin provisioning,” which allows storage to be allocated to an application without actually being physically mapped until needed. When additional physical capacity is required, it is automatically added to the pools and allocated to specified volumes. Hitachi Tiered Storage Manager software simplifies the migration of data to and from these volumes and does not require downtime. As a result, UHC can cost efficiently manage more terabytes with less effort, gaining simplified volume management, balanced resource utilization and performance, and greater application availability.

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Project Manager  
University HealthSystem Consortium

able to deliver a superior service model and a guarantee of “five nines” uptime. “You can’t beat the Hitachi guarantee. That was another thing that no competitor we talked to was able to do. Hitachi is absolutely willing and able to stand behind its nines,” Carlberg says. “And no one could match the Hitachi customer service response time. It ultimately became the decision point between the two companies.”

## Hitachi Storage Virtualization Remedies Outdated Architecture

The new tiered storage solution is based on the Hitachi Universal Storage Platform™ V, with built-in virtualization and Hitachi Dynamic Provisioning software to consolidate internal and external heterogeneous storage into a common pool. The Universal Storage Platform V delivers critical services and efficiencies in one integrated platform, including universal data replication, logical partitioning, application centric storage management and automated I/O load balancing — all manageable from a single console with one set of tools.

Two Hitachi modular systems and 45 servers were virtualized behind the Universal Storage Platform V, and data from member-facing applications was migrated onto the Universal Storage Platform V using Hitachi ShadowImage® Heterogeneous Replication software. Completing the new highly available storage solution were blade servers for greater efficiencies, remote replication functionality for failover, and the SQL upgrades for more “thin” savings.

Within weeks of installation, Carlberg realized the magnitude of his decision to implement Universal Storage Platform V. “Hitachi virtualization capabilities have vastly improved both performance and storage utilization. We are thrilled with the system’s reliability and the number of tasks we can accomplish with very little effort,” he says.

## Charting Healthy Performance and Savings

Since deployment, the Universal Storage Platform V has provided 100 percent uptime. With its newly acquired data movement capabilities, UHC can create volumes in minutes, easily migrate data across tiers or between volumes and perform online microcode updates. Staff now has the flexibility to place data and applications wherever they choose and to rapidly relocate data as necessary, without experiencing downtime. UHC has reduced the server footprint by 25 percent, cut physical storage requirements by half, and minimized power consumption and cooling needs by 30 percent. The IT staff is saving more than 100 employee hours per year on just volume configurations alone.

The Universal Storage Platform V facilitates superb reliability and performance for worry free boot from SAN and faster response times for accessing stored data. “We are very, very happy with our new response times. Every stored procedure and standard query that we could measure is running between 200 and 800 percent faster on the Hitachi system. We are confident we’ve chosen the right solution,” says Carlberg.

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