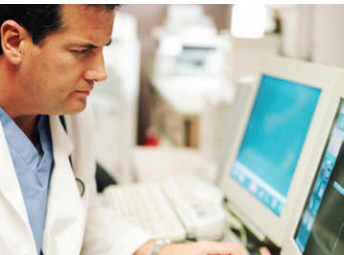


# Columbia Memorial Hospital



## Healthcare providers get 24/7 uptime assurance with Stratus

### Business situation

Like its peers in New York State – and across the U.S. – Columbia Memorial Hospital is moving forward with an ambitious and necessary initiative to make electronic health records (EHRs) accessible across the many settings where patients receive treatment: the hospital campus, physicians' offices, and local nursing homes.

A new EHR system was called for because ambulatory care had to be included, and hospital information systems traditionally have not extended to outpatient encounters. EHRs would have to serve over 200 clinicians, in more than 25 locations, who would access patient records over a secure Web interface on a 24/7 basis.

**“We were quick to recognize that ftServer systems offered the reliability, simple operation, and VMware support necessary to underpin a private cloud model for EHRs.”**

**Cathy Crowley**  
Chief Information Officer  
Columbia Memorial Hospital

### QUICK FACTS

#### SOLUTION PROFILE

- Private cloud SaaS infrastructure built for 99.999% or greater uptime
- Turnkey solution includes EHR software, servers, storage
- Implements virtualization for maximum cost savings, flexibility
- Serves over 200 clinicians in more than 25 locations

#### PRODUCTS & SERVICES

- Stratus® ftServer® systems
- Stratus ftScalable™ storage
- VMware® vSphere™ virtualization software
- Microsoft® Windows® Server® operating system
- MySQL database software
- Stratus Assured Availability Plus<sup>SM</sup> support services

Uptime. All the time.



When the hospital received a grant under HEAL NY, part of New York State's strategic health IT plan, the project became subject to detailed milestones and guidelines. Then the federal American Reinvestment and Recovery Act (ARRA) put other incentives on the table for "meaningful use" of EHRs. Being able to secure state and federal funding would depend on meeting an aggressive schedule.

And as is usually true, neither Columbia Memorial nor providers in its community had large IT teams with resources to go it alone: either to implement interoperable EHRs, or to assure clinicians of reliable access to patient information 24/7. "The new EHR implementation had to fulfill challenging criteria," said Cathy Crowley, Columbia's chief information officer. "The answer was a solution combining: CCHIT® Certified® software for ambulatory EHRs, fault-tolerant servers and storage from Stratus, and virtualization software from VMware."

**"Implementing EHRs using the virtualized, internal cloud model allows less physical hardware to serve more users, and minimizes the IT management burden."**

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Chief Information Officer  
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## Business objectives

The ultimate goal of this project is patient-centered care that results in improved quality, affordability, and outcomes for the people served. To support these priorities effectively, the information technology chosen had to help the hospital:

- Deploy interoperable EHRs
- Ensure reliable 24/7 access to digitized patient records for all stakeholders
- Maintain proper governance and integrity of health data
- Meet government funding milestones and benchmarks

## The uptime solution

Selecting appropriate EHR software to cover ambulatory care was first on the decision-makers' agenda. State funding stipulated the use of CCHIT Certified software. Another top-level concern: making sure the new EHR function had the uptime to ensure information access for timely patient care and clinical decision support. Closely related was protecting health data from being lost or its integrity from being compromised, if a hardware or software malfunction occurred.

"The need for accessibility by large numbers of users in multiple locations — along with the cost to purchase and operate the EHR system — made server virtualization and software as a service (SaaS) attractive," Crowley said. "Virtualization and SaaS could form the basis for an internal cloud where the hospital would host the EHR software for itself and its associated physicians." Self-hosting the cloud, instead of outsourcing, would in addition remove the discomfort over data governance and security. Yet, these newer IT approaches were unfamiliar territory, as is the case for most hospitals.

Complexity had to be managed skillfully to make the project a success. Once the ambulatory EHR software was chosen, the hospital enlisted a capable systems integration firm to simplify planning and implementation.

About the same time, Crowley learned about fault-tolerant servers from Stratus Technologies that would prove instrumental in their approach. “The ftServer systems allowed the hospital to take advantage of drop-in fault tolerance while being able to manage the cloud environment with standard VMware tools,” Crowley explained. The Stratus ftServer line pairs with VMware vSphere software to enable 99.999% or greater uptime for virtualized environments — which equates to less than five minutes of unscheduled downtime per year.

**“Selecting Stratus servers and storage is allowing the hospital to take advantage of the cost savings that come with this emerging model of delivery.”**

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Chief Information Officer  
Columbia Memorial Hospital

Features built into these Intel® processor-based servers keep the system running without server outage or data loss even in the event of a component failure. Components within ftServer systems operate in parallel with each other to provide automatic redundancy, active system monitoring and automated issue notification. For example, if a memory or processor module fails, the parallel module continues to function with no interruption to server functionality.

“We were quick to recognize that ftServer systems offered the reliability, simple operation, and VMware support necessary to underpin a private cloud model for EHRs,” Crowley continued. “And, we could purchase this hardware for a fraction of the cost of the total EHR solution.”

To further simplify things, the hospital opted for Stratus ftScalable storage. Like other members of the ftServer family, these fault-tolerant storage systems are built for continuous uptime. Duplicate components, integrated automatic controller failover, and hot standby features combine with multi-path I/O support to ensure maximum data integrity and protection.

### **Business impact**

Four physical ftServer systems host 20 virtual machines (VMs) while the attached ftScalable storage hosts 7 terabytes of data. Another ftServer system runs VMware vCenter™ Server. This configuration keeps the management software for the internal cloud from being exposed to a single point of physical server failure — in the simplest manner possible.

What's more, the hospital benefits from one-stop support for its VMware environment, Stratus servers, and storage. Stratus is providing remote-access serviceability and automatic all-home problem reporting that extends to both the Stratus hardware and the virtualization software layer.

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“Implementing EHRs using the virtualized, internal cloud model allows less physical hardware to serve more users, and minimizes the IT management burden,” noted Crowley. “Selecting Stratus servers and storage is allowing the hospital to take advantage of the cost savings that come with this emerging model of delivery.” Although the ambulatory EHR initiative was a big project to take on, the mindful choices made to streamline the implementation are now proving to reduce risk and deliver results.

### About Stratus

Stratus delivers uptime assurance for the applications its customers depend on most for their success. With its resilient software and hardware, backed by proactive availability management services, Stratus products help to save lives and to protect the business and reputations of companies, institutions, and governments the world over.

To learn more about worry-free computing, visit [www.stratus.com](http://www.stratus.com).

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The logo for Stratus Technologies features a stylized orange arc above the word "Stratus" in a bold, sans-serif font, with "Technologies" in a smaller font below it.

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