

Case Study » Healthcare I.T. Infrastructure

Gwinnett Thinks Outside the PC Box



Moving Toward a Paperless Hospital

CDW Healthcare and ClearCube

When Gwinnett Hospital System decided to build a state-of-the-art digital hospital, CDW Healthcare helped make their vision a reality. A ClearCube PC blade-computing solution provided centralized management of medical data without adding Information Services (I.S.) headcount, plus helped to ensure the security, privacy and reliability of patient information — all while saving valuable desk space and lowering the total cost of ownership.



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The Challenge»

The Gwinnett Hospital System (GHS) was committed to building a brand-new, all-digital acute care facility in Duluth to replace a hospital that had been sharing space with a rehabilitation center in a 60-year-old building. The new building was constructed about 1½ miles from the old facility, which now houses the rehabilitation center alone.

From an information technology (I.T.) perspective, the challenge focused on meeting and supporting the demands of the new facility's "paperless" environment, from electronic medical records (EMR) to Picture Archival and Communications Systems (PACS) and beyond — without adding additional I.T. staff and without compromising fast, reliable access to critical patient data.



The Solution»

Based on the recommendation of their CDW Healthcare account team, GHS chose to install 200 highly compact ClearCube units in the new facility's patient care areas. In only four weeks (two weeks ahead of expectations), the units were all up and running: one in every nursing station and one in an alcove between every two of its 81 private hospital rooms.

The Results»

Physicians, nurses, respiratory therapists, care coordinators and other clinical staff can count on the same quick, convenient access to vital patient information they would get with a PC — but in a substantially smaller footprint. And the GHS Information Services (I.S.) department can efficiently manage the ClearCube units from a centralized help desk in GHS's flagship hospital based in Lawrenceville, GA, several miles away from the new facility. I.S. has been able to maintain its current headcount without additional technical support staff and is beginning to realize a lower total cost of ownership (TCO) on its ClearCube investment.

The Challenge»

21st Century Technology, Top to Bottom

When Gwinnett Hospital System decided to fast-forward into a “paperless” environment by building an all-digital hospital from the ground up, Rick Allen, Service Line Director in the GHS I.S. department, foresaw both challenges and opportunities. “We were not only constructing a new building, we were also introducing an electronic medical record and implementing a PACS system as part of the digital transformation,” he explains. And all the new technology had to be managed by the central I.S. department, based in Lawrenceville, about 10 miles from the new facility’s location in Duluth.

Small Footprint

In the old hospital/rehab facility, originally built decades before computers were commonplace, the approach to technology had been functional but somewhat chaotic, with equipment squeezed into any available space. Allen recalls, “We had PCs and peripherals stuck everywhere. The nurses’ stations were crammed with all the telemetry systems, patient monitoring systems, nurse call systems and other things that practitioners needed.”

The new hospital incorporated a larger number of nursing stations, but they actually contained even less desk space than the old overcrowded ones. The need to reclaim desk space in a small footprint therefore became a driving factor in determining the most efficient I.T. solutions.

Streamlined Support

In addition to limited space, Allen had to confront the reality of limited staff. The System’s I.S. department includes about 100 people, responsible for telecommunications, PBX, data center operations, 24 x 7 departments and applications support, with the majority of the staff based on the Lawrenceville campus. Even though the sheer amount of hardware and applications in the new digital facility was going to significantly add to their responsibilities, no staff expansion was planned. These parameters made it critical to select systems for the new medical building that were not staff-intensive to manage, support and maintain.

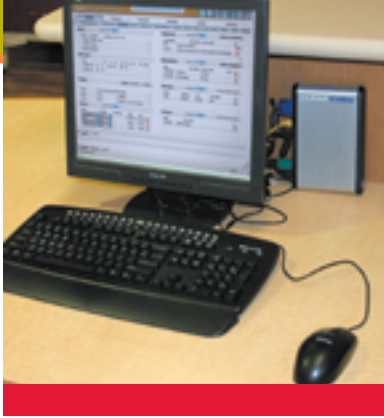
“We wanted to streamline our support,” Allen says. “And we had to be able to centrally manage the data via ‘remote control.’ Plus, we needed a standardized solution, so that whichever I.S. person was dispatched to the new hospital, they would know exactly what they were walking into because the configuration would be the same everywhere.”

Full Functionality, Full-Time

Despite the space and personnel constraints, Allen also knew GHS could not afford to sacrifice I.T. performance. In a digitized hospital like the new Gwinnett Medical Center – Duluth, there would be zero tolerance for system downtime. Optimal patient care would depend on immediate, reliable electronic access to essential patient data by clinical staff for accurate diagnosis, treatment or consultation. Speed and quality would be of the essence when care providers needed to pull up PACS images or an EMR, for example.



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At a Glance»

Based in Gwinnett County, GA, one of the fastest-growing counties in the United States for the past 20 years, GHS is a not-for-profit healthcare network encompassing two acute care hospitals, a psychiatric hospital, a rehabilitation center, an extended care center and other medical facilities on six campuses in Lawrenceville and Duluth. With more than 4300 employees and 800 physicians, the System provides care to nearly 400,000 patients annually.

The Solution»

The Right Choice Is Clear

Allen and his five-person selection task force committed substantial time and energy to independently researching hardware options, including thin client terminals and small form factor PCs, for patient care areas. During the evaluation process, their CDW Healthcare account team — which handles all GHS desktop computing needs — suggested a ClearCube solution. Recognizing the depth of knowledge and understanding that CDW Healthcare always brought to the table, GHS listened.

“Healthcare I.T. is a completely different animal,” says Allen, who spent 10 years in banking I.T. before moving to healthcare. “The complexity of the data infrastructure is very unique to the healthcare industry. Because of CDW’s specialized healthcare focus, we worked with experts that truly understood the needs and nuances of hospitals when it came to data privacy and security, systems reliability and total cost of ownership. CDW Healthcare’s recommendations were far from generic — they met our criteria exactly.”

After CDW Healthcare demonstrated what the ClearCube solution would look like and how it would benefit GHS, Allen and his team were convinced that this technology was the right fit. “It’s really a true PC replacement, where you’re taking a PC off of a desk and putting in a monitor, mouse, keyboard and a little box that’s smaller than a laptop, about 8 x 6 inches,” Allen says. The PC is condensed into a blade form factor and is housed in a chassis deployed in a data center or network closet. The minimal size and maximum functionality — combined with the simplified, centralized management of the units, wherever they are located — sealed the deal for GHS.

GHS enlisted CDW to help negotiate the best pricing and then signed a contract for 200 ClearCube units in mid-August 2006. The timeline was tight: The new hospital was scheduled to open its doors on October 15, and all technology needed to be installed by October 1 to ensure proper testing and training. Given this accelerated schedule, GHS chose to work with CDW to contract for installation services. The result: All the components were ordered, shipped, configured and installed in four weeks — two weeks ahead of schedule — which exceeded Allen’s expectations by a long shot.

Ready to Embrace the Digital Era

With four ClearCubes installed at every nurse's station and another in an alcove between every two patient rooms, GHS is on the cusp of a true digital revolution. Although care providers continue to enter information on paper charts while in patient rooms, GHS is currently in the process of contracting for a clinical documentation system as part of their commitment to become a paperless environment. In fact, a major step is already underway: Nurses now update patient records electronically on the nearest ClearCube as soon as they exit a patient's room.

Paper charting remains the status quo while patients are in the hospital, but within 48 hours of discharge, all patient information is documented electronically so that historical data is available online for future reference. Once the transition to complete online documentation is made for both real-time and historical data, Allen knows that nothing less than 100% uptime for all systems will be acceptable — another key reason GHS invested in ClearCube solutions.

Staying in Control with Centralized Management

Allen points out that the ClearCube solution offers advantages for both clinical staff and I.S. administrators. The clinical staff can count on the units for everything they would expect from a PC, yet also enjoy additional work space. "The way that we have it installed at our nursing stations is a one-for-one true PC replacement," Allen says. "Clinical professionals get all of the same functionality and the same response times that everybody else in the organization gets on their PCs. It acts the same as a PC because it is just another PC — it's just not physically sitting on their desks."

"I'm saving footprints, I'm not sacrificing performance, and I'm adding centralized management. Those three were the key drivers behind making a decision to go with a ClearCube solution."

— Rick Allen, Service Line Director,
Information Services,
Gwinnett Hospital System

In the event that users experience any trouble, immediate assistance is available 24 x 7 with one phone call to the GHS help desk on the Lawrenceville campus, no matter where the ClearCube is located. Thanks to the system's centralized management capability and spare blades (which CDW recommended be built into the ClearCube configuration), the I.S. department now has the flexibility and resources it needs to provide lightning-fast turnaround in almost every situation — without dispatching a technician to investigate. In a healthcare system with multiple campuses like GHS, the ability to fix problems

remotely significantly maximizes staff efficiency and has a positive impact on customer service.

Allen explains, "Say you're working on your ClearCube at your desk and you encounter an issue. You call the help desk, which is manned 24 hours a day. The help desk can actually migrate you, where you sit, to another PC blade in the closet. You're back up and running within minutes." The clinical staff gets access to vital patient information virtually without interruption, and I.S.

can replace the broken blade when staff and equipment availability permit.

Under the best of circumstances, PC repair in a similar situation usually requires at least a day, assuming the I.S. department has spares on site. But since PC spares are rarely available, repairs can take up to a week, leaving a frustrated care provider without convenient access to essential patient data.



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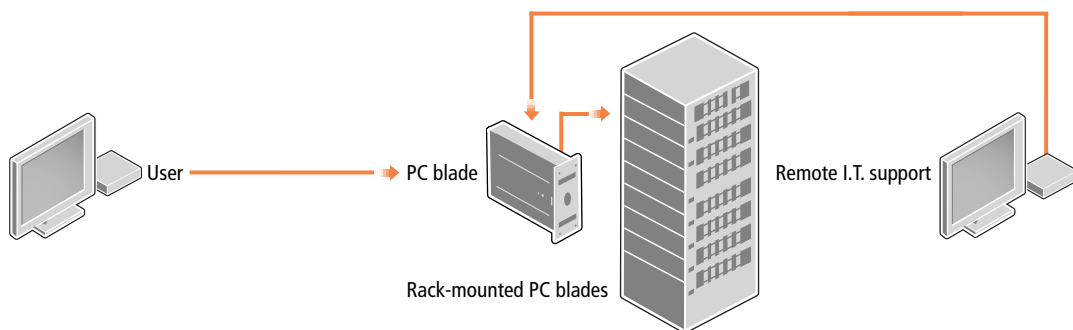


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ClearCube: A PC Solution Minus the PC»

ClearCube delivers all the functionality and performance of a PC without requiring space for a PC in the user's environment. Here's how it works:

- » ClearCube condenses the PC into a blade form factor, housed in a chassis in a secure, centralized location. As many as eight PC blades can be housed in a single chassis, and the chassis can be mounted in server racks.
- » A small (approximately 8" x 6" x 2") user port connects desktop peripherals such as keyboard, monitor, mouse, speakers and USB devices to the PC blade over dedicated cabling or a standard Ethernet network. The devices offer the advantage of a small footprint, quiet operation and minimal heat.
- » I.T. managers use ClearCube Sentral™ software to remotely monitor and manage the PC blade deployment in real time. Moves, adds, changes and upgrades take only minutes, delivering virtually uninterrupted uptime and quick return to service.



“CDW brought **value** to us because they're the ones that brought us to the ClearCube solution.”

— Rick Allen, Service Line Director, Information Services, Gwinnett Hospital System

The Results»

Doing More with Less

Allen had high expectations for the ClearCube solutions that he and his team worked closely with CDW Healthcare technology specialists to design and configure — and he hasn't been disappointed. In the five months that the new hospital has been fully operational, there has not been a single documented ClearCube failure. "The system availability has been everything we expected," Allen says.

That's especially critical in light of the demands on his technical staff. GHS has more than 2,000 PCs in its facilities with only six technicians to support them. The five techs based on the Lawrenceville campus, where all facilities are PC-equipped, are constantly in demand. On the other hand, the single tech stationed onsite in Duluth to oversee I.S. functions at the new hospital — outfitted primarily with ClearCubes — plus at the nearby surgical and rehab centers has ample time to respond promptly to customer service requests.

The ability to handle the vast majority of troubleshooting issues for the ClearCubes through the remote help desk speeds response time and increases customer satisfaction. "We're able to act more quickly and nimbly," Allen explains.

When a ClearCube solution was recommended, the CDW Healthcare account team recognized that centralized, simplified management would benefit a large multi-unit organization like GHS. The system's short learning curve seems to confirm the wisdom of this approach. Even though none of the Gwinnett techs had worked with ClearCubes before, only two half-day training sessions were required to prepare them to confidently support the new installations.

Security and Privacy Benefits

With the ClearCube PC hardware centralized in a secure location, protecting valuable assets and sensitive data becomes much easier. For GHS, security concerns did not play a primary role up front in choosing ClearCube. However, the wisdom of the decision became apparent when a thief disguised in hospital scrubs stole several items, including a PC, from the flagship hospital in Lawrenceville. "That can't happen in the new hospital, because we don't have the units out there," Allen explains. "The ClearCube PC blades are locked in our computer room."

The Rollout Continues

Five months after the initial installation, GHS added a second wave of 60 ClearCube units to the surgical areas in the flagship acute care hospital on the Lawrenceville campus. The installation went hand in hand with the implementation of electronic surgical charting. Everything that occurs during the surgery is documented online and is available for reference in post-op, where automatic feeds continue to document vital signs such as blood pressure, pulse and oxygen sensors. "They're running all of that from the ClearCubes," Allen says.

Within the next two years, GHS plans to add a new tower with an additional 129 beds to the Lawrenceville hospital. Current plans call for installing another 350 ClearCubes as part of the expansion. Allen says, "Our planning now is that, when we go in and build new patient care areas, they're outfitted with ClearCubes, not PCs." Further down the road, Allen also foresees ClearCube units installed in every patient room, doing double duty for clinical electronic documentation as well as patient education and entertainment.

For the I.S. department, the prospect of installing scores of additional ClearCubes barely raises an eyebrow. "We have a framework in place that's easy to add to and easy to move forward with," Allen explains. "We're putting them in our data center, so I don't have to worry about power, I don't have to worry about cooling. I just need that space in our data center and somebody that can pull cable."

A Clear-Cut Success

The ClearCube solution, while still early in the implementation life cycle, shows promise for strong ROI potential. Allen believes that the results will exceed expectations, and that the benefits realized are well worth the investment. "The return that you get on management, the return that you get on availability, and the return that you get with end-user satisfaction are all tangible benefits we are currently measuring," he says.



CDW Healthcare Delivers Digital Solutions

Whether your healthcare organization is moving full speed ahead toward a fully digital environment or taking it a few steps at a time, CDW Healthcare's account team — including a comprehensive range of technology specialists — is ready to serve as an expert extension of your research, evaluation and implementation teams. With their in-depth knowledge and CDW's huge selection of in-stock, brand-name inventory, which features more than 1000 of the world's leading manufacturers, you can rest assured that you'll get the right technology right away.

To see how CDW Healthcare can bring the benefits of ClearCube and other innovative solutions to your organization, contact your CDW Healthcare account manager, visit us online at CDWHealthcare.com or call 800.500.4239.



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