



Revolutionizing dental medicine education

Touro College of Dental Medicine empowers students to improve patient outcomes by delivering tomorrow's digital dentistry, running on a hyperconverged infrastructure with Dell EMC VxRail



Touro College of Dental Medicine
AT NEW YORK MEDICAL COLLEGE

Higher Education and Healthcare

United States

Organization needs

Touro College of Dental Medicine was founded to deliver the best possible education to the next generation of dentists, using the latest advances in digital dentistry.

Solutions at a glance

Hyperconverged infrastructure

- [Dell EMC VxRail](#)

Organization results

- Minimizes costs, administrative complexity, rack space and power consumption by deploying HCI
- Powers best-in-class 3D CAD/CAM modeling applications for more than 670 concurrent users
- Enables greater depth and breadth of dental study scenarios
- Ensures continuous, reliable user experience

“Touro saved nearly \$1,000,000 annually in reduced staffing costs compared to conventional technology ... by deploying a hyperconverged infrastructure with Dell EMC VxRail.”

Mike Schreibman, Co-founder and Managing Director, Hudson River CIO Advisors

When the Touro College of Dental Medicine—a member of the nationwide Touro College and University System—was founded, it was the first dental school to open in New York State in more than 50 years. The vice dean of the college, Edward Farkas, D.D.S., M.A., who was instrumental in its founding, says, “We wanted to meet an urgent need for modern dentist training and take advantage of digital educational and medical technology. That required us to create a state-of-the-art environment to enable impactful teaching and learning.”

“We deliver better, more sustained patient outcomes, at a lower cost, on our digital-dentistry infrastructure powered by VxRail.”

Edward Farkas, D.D.S., M.A.,
Vice Dean, Touro College of Dental Medicine

Fast, cost-effective launch of a new dental college

The college partnered with managed-services provider Hudson River CIO Advisors to create and operate a digital infrastructure for dental education and practice. Far exceeding the typically small numbers of users and the limited use cases of dental practices, the technology needed to support concurrent use by the 113 students in each of four grades, plus faculty members and the dental services Touro provides to the local community. Mike Schreiber, a co-founder and managing director at Hudson River, says, “The standard deployments we studied were extremely expensive and supported only a small number of users. However, a hyperconverged infrastructure would provide optimal performance with efficient management at a lower cost. We found that Dell EMC VxRail devices optimized for intense graphical processing were the best solution to make this possible.”

Completing the initial deployment for the new college in under three months, Hudson River has since then expanded the hyperconverged infrastructure (HCI). Today, Touro uses 18 VxRail all-flash devices, 14 of which are designed for operation with NVIDIA® Tesla® M10 graphical processing units (GPU). VxRail and the GPUs connect to 550 thin clients deployed at dental chairs in the simulation lab and college offices. “Touro saved nearly \$1,000,000 annually in reduced staffing costs compared to conventional technology used at other dental colleges by deploying a hyperconverged infrastructure with Dell EMC VxRail,” says Schreiber.

High-performance foundation for digital learning

Currently supporting more than 670 individual users, Touro’s HCI allows students and faculty to use 3D imagery and advanced software to study, teach and practice with digital models under more varied and realistic conditions than in traditional learning. Students supported by experienced dental practitioners see more than 200 patients a day, using a combination of software and 3D scanners to assess patients’ conditions, plan treatment and create tooth replacements with precision, eliminating the lengthy testing of the traditional approach. “Touro College of Dental Medicine is the first school in the new era of digital dentistry, powered by a VxRail HCI foundation,” says Schreiber. “We are leading the world in the simultaneous usage of dental educational software.”

Powers best-in-class

3D

CAD/CAM modeling applications for more than 670 concurrent users



Users log on just once, tapping a card to an Imprivata card reader and entering a code. Virtual desktop technology, managed with Citrix software layered on VMware vSAN integrated with VxRail, maintains their sessions in different areas of the college or off-campus. "The performance of high-end, intensely graphical applications running on VxRail is amazingly fast," notes Schreiber. Management overhead for the learning environment is low. "While growing the number of simultaneous users above 670, we reduced desk-side support staffing from two to one," he adds.

A model for boosting educational outcomes for digital learning

With the first cohort of students to graduate soon, the college has gained visibility with other educational institutions, which send delegations to experience digital dental learning. Schreiber says, "Touro may adapt its model for new schools in the future, and we are also helping other dental schools become digitally enabled." In sharing its experience with colleges and universities, Touro emphasizes the key role of an efficient, scalable and robust infrastructure. He says, "We impress on our peers that digital dentistry requires HCI with GPU-enabled servers, and it takes a robust, innovative solution like Dell EMC VxRail to make this work."

Visitors are often astonished when they realize the performance levels and efficiencies Touro achieves. "Most dental schools exploring digital technology would expect to have at least 10 support people available, not one, like we do," Schreiber says. "We run a calm environment where we focus on outstanding results. Users don't worry about the technology nor how it will respond when they change operatories, because VxRail enables a consistent, high-performance experience."

Advancing careers and helping the local community

Touro dental students made a wise choice when they chose their college. Farkas says, "Our graduates will enter private practice already having years of experience using digital-dentistry tools and a deep knowledge of the advances in the field. That gives them an edge in their career and empowers them to achieve excellent patient outcomes."

It is part of Touro's mission to serve and support diverse communities. Residents of Westchester, New York, where the college is located, already benefit from digitally powered dental services. "We deliver better, more sustained patient outcomes, at a lower cost, on our digital-dentistry infrastructure powered by VxRail," says Farkas. "As dental practices around the country hire graduates skilled in the use of digital tools, there will be a dramatic improvement in dental care."

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Mike Schreiber,
Co-founder and Managing Director,
Hudson River CIO Advisors

Facilitates
more than

200



daily patient
appointments
in addition to
instruction

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Mike Schreibman,
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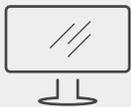
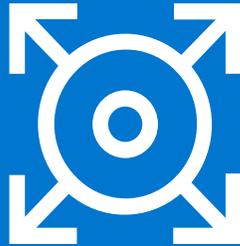
Efficient, compliant records management on HCI

Touro and many other dental schools use a complex dental electronic medical records (EMR) application called axiUm, an industry-standard tool that is essential for such important tasks as managing records in compliance with HIPAA and other regulations. The software requires intense IT management. Running this business-critical solution on Touro’s infrastructure is far more efficient than the usual practice. Schreibman explains, “Instead of relying on cumbersome desktop-level processes, we control axiUm centrally on our HCI with Citrix and GPU-enabled VxRail devices. We can perform secure, next-generation information management that goes hand in hand with digital-dentistry instruction and care.”

Reduces IT
deskside support by

90%

compared to
comparable dental
schools



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