



# Making college more accessible and affordable

University of Massachusetts Lowell improves students' educational experience, minimizes their capital costs, and simplifies growth with virtual desktops from Dell and VMware



Higher Education

United States

## Business needs

To help ensure all students have fast and easy access to the IT resources they need to complete homework and research, and simplify growth, the University of Massachusetts Lowell needed a more flexible desktop model for its computer labs.

## Solutions at a glance

- [Cloud Client-Computing](#)
- [Endpoint Management](#)
- [Enterprise Deployment](#)
- [Mobility](#)
- [Storage](#)

## Business results

- Anytime, anywhere access to virtual lab environments
- Improves educational experience and learning potential
- Makes college more affordable and accessible
- 6 weeks to buy, build, test and implement Dell VDI

# 88%

faster engineering simulations



# 97%

less energy needed for thin-client devices



As more people desire a college education, universities need to find affordable ways to add classroom space and ensure everyone can access the expensive and computationally demanding applications often required for learning. By replacing traditional desktops in computer labs with a virtual desktop infrastructure (VDI), universities can meet these requirements — and more importantly, transform how students learn.

Over the past nine years, the student population at the University of Massachusetts Lowell had grown by over 66 percent. The university realized it could recoup space for classrooms if it could reduce the number and size of its computer labs. Steve Athanas, director of platforms & systems engineering at the University of Massachusetts Lowell, says, “We needed to free up our students from having to work in labs by allowing them to access the same tools with their own devices. This was the genesis for our VDI program, which we call vLabs.” The university decided to first replace 625 lab PCs with thin-client devices, and then refresh the end-of-life PCs it provides students in other areas on campus with zero clients.

## Torture tests reveal the best client solution

Choosing a new client platform came next. After purchasing thin clients from numerous vendors for testing, IT staff put the devices through all possible scenarios. “We call it torture testing. We spilled a milkshake on our Dell Wyse thin client, rinsed it off, threw it down the stairs and put it under a heat lamp to dry,” says Athanas. “It booted right up a day later after we plugged it in. Dell Wyse hardware is built like a tank. That’s why we chose it. Any device that can take that kind of abuse is ready for university life.”

## Improving opportunity and work/life balance

Within six weeks, the university had purchased and implemented a VDI solution. For use by all students and staff, it includes Dell Wyse 5000 series thin-client devices and VMware Horizon software. Athanas says, “We knew

we were hitting the mark when we received a note that said, ‘I’m a single mom. I drive to school in the morning and attend class. After class, I drive to my job. Then I go home and take care of my kids. My mother comes over to put them to bed and I head back to campus to do my homework. I live about 40 minutes away. With vLabs, I don’t have to drive back to campus at night anymore. My grades are up and I spend more time with my family. Thank you.’” Other students explain how helpful it is to be able to complete work wherever they are, whether on a bus or at a remote research site in another country.

*“We spilled a milkshake on our Dell Wyse thin client, rinsed it off, threw it down the stairs and put it under a heat lamp to dry. It booted right up.”*

**Steve Athanas**

Director of Platforms & Systems Engineering  
University of Massachusetts Lowell

45 sec

booting time for  
3D simulators



# 90%

utilization of  
university labs



## Virtualized engineering environments? No problem.

To ensure that science and engineering users have quick application response times using virtual desktops, the university also built a new cluster. It includes Dell EMC PowerEdge R730 servers with NVIDIA GPUs and an all-flash Dell EMC SC8000 storage array. “We had always been an HP shop, but Dell EMC was the first to integrate NVIDIA grid cards into its servers and they deliver great reliability at a lower price point,” says Athanas. “So we went with R730s and we’ve been very happy with them. We chose SC-series storage because, dollar for dollar, Dell EMC arrays were the most cost-effective and they provide a great roadmap for longevity. We designed our solution but had Dell Deployment Services rack, stack and cable the gear so my staff could stay focused on customers.”

## 88% faster engineering simulations improve students’ educational experience

There’s less IT-related frustration today and productivity has improved. Students can boot up a new desktop and launch compute-intensive applications such as 3D simulators in 45 seconds versus waiting up to 11 minutes. And a simulation that used to take 40 minutes to run now takes five. “What this means is professors can cover more content in class,” explains Athanas. “Graduate students can run more iterations of a simulation so they can turn in better work.”

Plus, virtual desktops are consistently fast and reliable. “In a traditional computer lab, students know not to use certain machines because they’re slow or they’re the one rumored to have a virus,” Athanas says. “Today, every time a student logs in to our Dell VDI, they access what equates to a brand new computer.”

*“We knew we were hitting the mark when we received a note that said.... ‘My grades are up and I spend more time with my family. Thank you.’”*

**Steve Athanas**

Director of Platforms & Systems Engineering  
University of Massachusetts Lowell



## Promotes greater learning

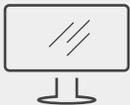
Anytime, anywhere access to IT tools is also facilitating the next evolutionary step in higher education. Athanas explains, “In the past, a professor would teach a concept such as tensile strength for four weeks and then spend a class period in a lab so students could try out what they learned. Today, a professor can explain the theory, have everyone pull out their device, connect to vLabs and try it out in a simulation. Lecture to recitation is seconds not weeks with our Dell VDI environment. That has a tremendous benefit on students’ understanding and retention. In a recent survey, 63 percent of surveyed students either agreed or strongly agreed that vLabs helps their academic success.”

## Greater resource utilization

The university is able to convert some labs into classrooms without restricting students’ access to the IT tools they need. “Instead of having labs that were utilized 30 percent of the time, some labs are being utilized 90 percent of the time,” Athanas says. In addition, compared with an average PC, each Dell Wyse thin-client device consumes 97 percent less electricity and has nearly twice the lifespan, aiding campus environmental initiatives.

## Easing students’ financial burdens

Now, students have an avenue for lowering capital costs. “In the past, I had talked with students who were spending \$150 a month on a laptop,” says Athanas. “This is the wrong time of life for them to be taking on that kind of expense and debt. Our students can connect to vLabs and run a job on a virtualized Xeon-processor-based desktop using any device — even if it’s a six-year-old laptop. And if they don’t have their own device in class, they can use a Dell Chromebook that we provide on carts. So not only are we changing how classes are taught with our Dell VDI solution, it also helps us make education more affordable and accessible to more students.”



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