Salt Lake Community College

HP thin clients deliver flexibility, complement long-term tech strategy

“Our technology goal is to make education more accessible. To help students take the best possible advantage of everything we have to offer. And HP products are helping us do exactly that.”

—Casey Moore, director of technology, Salt Lake Community College, Salt Lake City, Utah

HP customer case study
Salt Lake Community College is using thin clients to virtualize student desktops and applications for simplified management

Industry
Higher education

Objective

- Simplify desktop management
- Provide more flexible desktops for students
- Reduce device deployment and management costs

Approach

Salt Lake Community College is virtualizing student desktops and applications, allowing them to be managed centrally and accessed through thin clients

IT improvements

- Applications and virtual desktops are centrally managed
- Technology staff can image hardware and patch applications faster

Business benefits

- More efficient desktop management and support
- Greater flexibility in desktop usage, access
- Reduced energy usage
- Lower hardware costs
- Anytime, anywhere, any device access

Salt Lake Community College (SLCC) is a large comprehensive institution, serving 60,000 students per year, spread across 13 locations. The technology infrastructure to support those students has grown into a monster, too. The technology department supports 170 different labs, equipped with thousands of computers.

SLCC’s technology strategy should help it tame that monster going forward, though, relying on virtualization and HP thin clients at the desktop.

“Using thin clients, in combination with virtualized desktops and applications, will let us simplify management by focusing our IT management energies in the data center,” explains Casey Moore, director of technology for the college. “We will increase the flexibility of our desktops to serve users in multiple ways, while saving time and money.”

Doing more with less

Salt Lake Community College is the largest institution of higher learning, with the most diverse study body, in Utah. It serves more than 60,000 students throughout the Salt Lake Valley with both traditional classroom and online class options.

As the college has added sites and grown enrollment, it has also added more computers and student labs. Now, Casey says, the strategy is changing.

"Going forward, we're trying to do more with less," he says. The idea is to shrink the resources SLCC devotes to student computing, while actually increasing what students can do."

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How? The college has a two-part strategy. First, virtualize student desktops and applications, so they run on cost- and energy-efficient HP servers in SLCC's central data center, where desktop applications are easy to manage. Software updates and patches can be applied in seconds.

As a result of virtualization, user desktop hardware running applications will do less of the "heavy lifting". That leads to the second part of the college's strategy: for the user hardware, use highly reliable, easy-to-manage, long-lasting thin clients. Or, allow students to use their own devices—from notebook PCs to tablets and smart phones—to act as thin clients and access the applications and data students need.

HP thin clients deliver better performance

It all started when the College's Student Technology Fee Board prepared to refresh one of the college's numerous computer labs and decided to try something different: virtual desktops and applications. For the pilot effort, the college simply repurposed existing desktop hardware using Windows® Fundamentals for Legacy PCs (WinFLP). The pilot proved successful. So SLCC moved forward with the virtualization strategy.

IT couldn't simply keep repurposing old hardware forever, though, so Casey's staff tested thin client products from several companies, and chose the HP t5740 Thin Client. The biggest differentiating factors: HP management tools and compatibility with Citrix HDX.

"HDX allows us to leverage the local system to do some Flash rendering and Windows Media Player rendering, so you don't need the servers to do all the heavy duty processing," Casey explains.

He cites the example of streaming video. Without HDX, he says a single video stream might consume 25 percent of the processing load for a virtual server delivering desktop applications; with HDX, the load is reduced to seven percent. "HDX allows us to host more virtual sessions on a virtual server. HP thin clients deliver the best performance and best HDX user experience."

Remote management with HP Device Manager

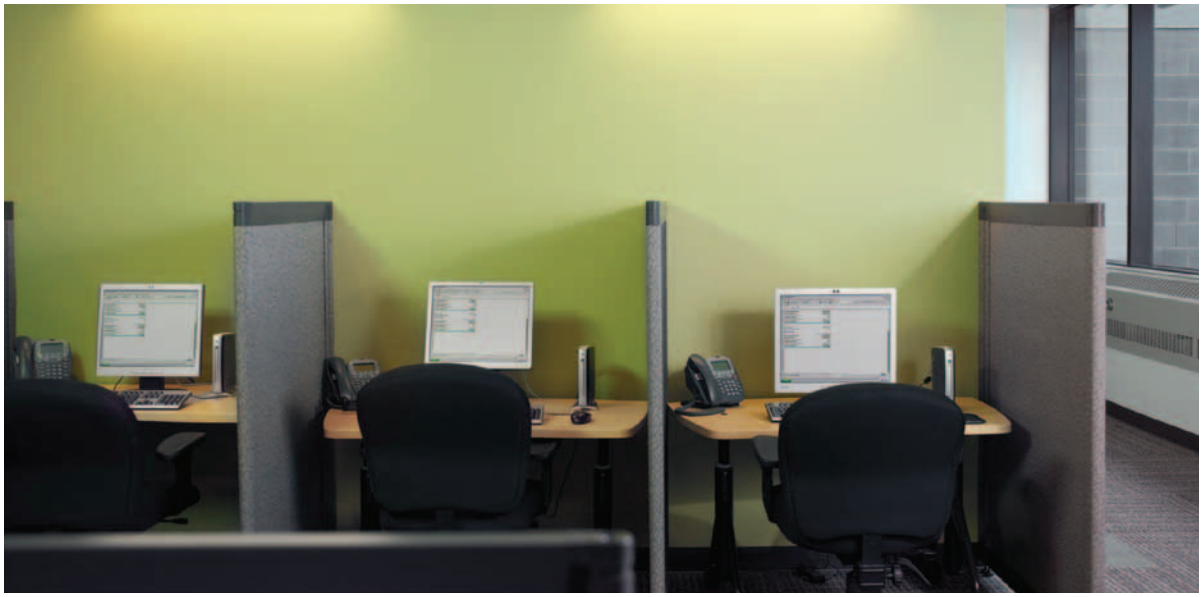
Casey says another major reason for selecting the HP t5740 Thin Client is the availability of HP Device Manager for remote device management. His staff uses Device Manager both to image thin clients prior to deployment, and for pushing out updates and customization to groups of thin clients in various labs.

Customer solution at a glance

Primary applications
College student lab computing

Primary hardware
- HP t5740 thin clients
- HP ProLiant BL460c blade servers
- HP ProLiant BL490c blade servers

Primary software
- Windows® 7 Embedded Standard
- Citrix HDX
- Citrix XenApp
- Citrix XenDesktop
- Citrix Provisioning Services
- VMware ESX



"We only have three different images; we try to keep a nice, clean base image across all the thin clients, then use Device Manager to customize it for specific labs."

In a lab used for class registration, for example, the thin clients are temporarily set to default to the college's website to facilitate easy, rapid access to the registration process. When students aren't registering, the same thin clients might be configured so that as soon as students log in, they have immediate access to Microsoft® Office. In the college's testing center, thin clients are configured with scripts that lead directly to the appropriate test.

All that can be done remotely, to groups of thin clients, using Device Manager. The HP management tool also accelerates the initial imaging process. "At one point we imaged about 160 thin clients at once, and they were all done in 30 minutes," Casey recalls. "That averages just seconds per device. With our old process for imaging a lab, it would have taken days."

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Casey Moore, director of technology,
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Supporting the thin client-equipped labs in the data center are HP ProLiant BL460c and BL490c blade servers, virtualized with VMware ESX. The college uses Citrix XenApp to virtualize applications, and Citrix XenDesktop in combination with Citrix Provisioning Services to create virtual desktops. They are also leveraging special licensing they received from Microsoft allowing for student access to the virtual environment and the Office Suite.

For most student uses, Casey says, the servers are configured to deliver just virtualized applications, ranging from Microsoft Office to Netbeans. In some cases a full virtual desktop is required for programs like Autodesk AutoCad. A majority of the standard thin client images are based on genuine Windows 7, which is a familiar platform for his staff to manage, and a familiar user interface for students to use.

Enhanced user experience and security

For student users, the virtualized environment and thin clients deliver a better experience, Casey says. "We get quick login and access to a virtual desktop or application in much less time than most people are used to from boot up," he says. "And once students are in the system, as long as they don't log out, everything is almost instantaneous."

Using thin clients also adds a layer of security, which is valuable on a college campus with a wide-open, public lab environment. Casey says the thin clients are configured with a locked down image that resists malware attacks.

"It only takes a reboot to fix most issues," he says. The Enhanced Write Filter in the Windows Embedded OS prevents viruses from permanently affecting the thin client's image and operating system. The base images also include the Symantec protection agent.

In terms of management, using a locked down image means Casey's staff can spend less time patching existing hardware, and more time on deploying new and upgraded systems.

Configuration, device flexibility

Thin clients give SLCC added flexibility. In terms of management, groups of thin clients can be quickly configured using Device Manager to efficiently serve a particular need—such as the registration lab or testing center examples.

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But for most students, the goal is to offer access to a generic desktop or group of applications, regardless of where the students go on campus. "Our goal is to be able to provide access anytime, anywhere," Casey says. "Because we're hosting the apps in a private Cloud, it shouldn't matter what lab students go to."

Thin client hardware is economical to purchase, easy to manage, and uses less energy. So SLCC is actually in a position to deploy more thin clients for less money, while consuming fewer IT resources. The college has deployed more than 700 t5740 thin clients thus far, purchased and supported through local HP partner Valcom, and the number continues to grow.

But deploying more physical desktops—thin clients or otherwise—is not the long-term goal.

"In the future, we actually want to be supplying and supporting fewer computers, not more," Casey says, in order to reduce the college's ongoing costs. That's why the virtualization initiative is also designed to support device flexibility.

"We're not just serving virtual applications and desktops to the thin clients in our labs; we're also enabling students to use their own devices as thin clients," Casey explains. So increasingly, virtualization isn't just about anytime, anywhere access; it's also any device access.

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