Liquidware Gives Anglia Ruskin University the Power to Go Green with Low-Power Virtual Desktops

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> *- Tim Kitchener, Infrastructure Architect Anglia Ruskin University*

Organization:

Anglia Ruskin University

Virtual Desktop Users:

400+

Products:

ProfileUnity™
Stratusphere™ FIT
Stratusphere™ UX

Overview

Anglia Ruskin University has more than 30,000 students and is one of the largest universities in eastern England. The IT staff explored virtual desktop technology to develop a plan to meet the computing needs at an eco-friendly, extremely low-powerconsumption facility being built on campus. Anglia Ruskin decided to use VMware® View and zero client virtual desktops to meet its low-power computing needs, and the VDI Essentials bundle from Liquidware to plan the environment and manage user profiles.

The Challenge

A new building that Anglia Ruskin University was constructing on its Cambridge, England campus created numerous new challenges for the University's IT staff. The facility was intended to showcase a modern, eco-friendly design, which called for natural cooling without air conditioning. Gregor Waddell, the IT Department's Assistant Director, was charged with finding a solution that did not rely on a cooling system for the 300-seat computing area in the building, which led the department to explore using virtual desktops instead of traditional power-hungry, heat-producing PCs.

"We had to plan for a super green building without air conditioning and would not house any heavy-duty IT equipment," said Tim Kitchener, infrastructure architect at Anglia Ruskin University. "To meet those requirements we wanted to provide computers that used the least amount of power as possible."

The Anglia Ruskin IT staff faced other challenges. At the time, the standard computers available on campus for student use were traditional PCs running Windows® XP. These aging PCs were increasingly time consuming and difficult to maintain, and many users complained frequently about slow performance.

The need to replace the older equipment, coupled with new requirements, pointed Anglia Ruskin toward implementing a virtual desktop infrastructure (VDI). Once that decision was made, a fresh challenge unfolded as the IT staff had limited experience with virtual desktops, and had only six months to develop a plan, create a virtual desktop architecture and install the new desktops before the building officially opened.

The Solution

When the IT team ran an initial proof-of-concept trial for virtual desktops, the results were not promising. The virtual desktops did not consume much less power than the physical PCs they replaced. The desktops did not provide good video or sound quality. Moreover, a prohibitive amount of storage was required to support the thin-client virtual desktops as configured. However, far from being deterred by these issues, the Anglia Ruskin team learned from its initial designs and pursued fresh strategies to meet its twin goals of going both green and virtual for its desktops.

Anglia Ruskin re-architected the VMware View-based solution to address the challenges identified during the pilot. The Anglia Ruskin team also got in contact with Liquidware, which was able to provide advice and suggested products for planning the environment, virtualising desktops, monitoring and optimising performance, and managing profiles.

The new environment was significantly different from what was used in the initial trial. The new design for Anglia Ruskin's virtual desktops included:

- Low-power zero client terminals from Samsung and LG with upgraded sound and video
- VMware View 4.6
- Applications streamed using Microsoft® App-V
- HP blade servers
- Solid state storage
- 10Gb network backbone
- PC over IP (PCoIP)

- Windows 7 OS
- Liquidware VDI Essentials, including Stratusphere FIT, Stratusphere UX and ProfileUnity

The design standardised on one master desktop image available to students, however they can customise the settings. This customisation of user settings was enabled by Liquidware ProfileUnity, so the university was able to meet its objectives of reducing power consumption with a shared stateless desktop image, but leveraging user virtualisation of ProfileUnity to manage student user profiles. So it achieved the best of both worlds.

"One of the things we learned very quickly during the trial was that we needed something to preserve user profiles between sessions," said Kitchener. "Roaming profiles do not work very well and are easily corrupted. Mandatory profiles allow fast logon, but changes are not saved at logout. We wanted something that would allow users to save the changes they made to their desktops."

ProfileUnity manages virtual desktop user profiles and retains settings between sessions. When users log on their desktop preferences and customisations are retained. No software is required on the desktop and no CPU cycles, IOPS or RAM are consumed during the Windows session, so the product fits well with the zero client architecture.

"Liquidware demonstrated ProfileUnity to us on a Web conference when we were investigating solutions and we were very impressed," said Kitchener. "ProfileUnity makes profile management really simple."

Kitchener and the team used the other components of Liquidware's VDI Essentials suite – Stratusphere FIT, Stratusphere UX – during its VDI implementation. Stratusphere FIT was used in the assessment and planning phase to help determine which desktops and applications to virtualise, as well as planning for CPU, network, memory and storage capacity.

Stratusphere FIT metrics were also crucial in creating the optimal system design. Stratusphere UX is being used to provide visibility into virtual desktops, hypervisors, networks and storage systems so system administrators can proactively manage desktops for optimal performance as well as to prevent issues from arising.

The Results

The VDI initiative earned top grades from Anglia Ruskin's perspective. The virtual desktops perform reliably in the non-cooled new facility, power consumption was significantly reduced and desktop performance has improved.

"Virtual desktops are giving our students are a much better user experience," said Kitchener. "Login times have been reduced and applications run faster. We're getting no complaints about the new system."

These results were achieved while reducing power consumption. The zero client virtual desktops use 30 to 40 percent less power than the physical Windows PCs they replaced, and the IT team believes it can reduce required power another 10 to 20 percent by using new power adapters.

While energy needs are decreasing in the work area, virtual desktop use is growing. Anglia Ruskin has virtual desktop profiles for approximately 400 students and is extending them to more students and staff. The university also plans to use virtual desktops to give users remote access from anywhere, not just in the new building where VDI began.

"There was a learning curve, but we got good tech support," said Kitchener. "Liquidware and System Professional* held our hand throughout the implementation, and now everything is running very well."

*System Professional is a Liquidware Acceler8 partner.

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