



VMWARE HORIZON VDI CUSTOMER CASE STUDY

BISHOP AUCKLAND COLLEGE

Bishop Auckland College achieves massive performance gains with VDI

Bishop Auckland College is a further education college located in the town of Bishop Auckland, in the North East of England. It offers full-time courses for school leavers and undergraduates, as well as a comprehensive range of part-time education services for adults. In total the college has over 8,500 full and part-time students.

CHALLENGE

Body In addition to its main campus in Bishop Auckland, the college operates two additional sites off campus, including the South West Durham Training Centre in Newton Aycliffe, which specialises in technical engineering and construction courses for over 200 students. Since many of these engineering courses require students to use advanced Computer Aided Design (CAD) packages such as AutoCAD,

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Challenge

Bishop Auckland College was facing a significant shortage of high-performance PCs at its Newton Aycliffe campus. With only 25 aging PCs capable of running the 3D applications required by the campus's 200+ students, the college needed to drastically increase the number of high-performance workstations as cost-effectively as possible.

Solution

Phoenix Software developed a custom VMware Horizon VDI solution running on Dell PowerEdge R730 servers paired with a 1.2TB VMware Virtual SAN (vSAN) hyper-converged infrastructure. NVIDIA's Kepler architecture was chosen to deliver the required 3D rendering capabilities.

Benefits

Over 100 students can now run AutoCAD and other demanding 3D applications simultaneously from anywhere on any device, with up to 20x the levels of performance of the college's previous best standalone workstations.

the college had previously invested in 25 high performance workstations with dedicated GPUs, with the remaining 75 PCs being regular desktop workstations. With only 25 PCs capable of running AutoCAD for the more than 200 students who required it, increasing the number of high-performance workstations was a top priority for the college.

What's more, since all of the site's 100 PCs were reaching their end-of-life, even the high-performance PCs were struggling to run the latest versions of AutoCAD at acceptable levels. The college therefore decided to use the pending refresh as an opportunity to expand the number of high performance workstations available to students. The question was how to do this without breaking the bank, given that dedicated high-performance workstations typically cost two to three times more than regular ones.

Having previously invested in a VMware Horizon Virtual Desktop Infrastructure (VDI) for the bulk of its workstations on the main campus, the college was keen to investigate whether modern VDI solutions could deliver the high-end desktop performance it required

"We were big believers in the scale and value-for-money that VDI could deliver for regular workstations since we were already running it on the main campus," commented Wayne Longton-Worley, Head of IT Services at Bishop Auckland College. "But we also knew it had a poor reputation for 3D graphical performance. We were asking a lot of VDI. We didn't just want it to match the 3D rendering capabilities of the latest dedicated workstations, we wanted it to outperform them. At the same time it had to deliver this to all 100 PCs in the building and cost significantly less than standalone workstations."

With their demands set, Bishop Auckland College set to work testing the performance of numerous solutions that delivered high-end graphics in a VDI environment.

SOLUTION

After a number of performance trials with different technologies over the course of a few months, the college chose the 3D graphically enhanced VDI solution designed by Phoenix Software. Not only did this solution deliver better performance than a high-end PC at a lower cost per workstation, but it delivered the best 3D performance of all the solutions they tested.

Phoenix was able to deliver the highest levels of performance due to its ambitious design. The Phoenix solution consisted of VMware's Horizon Virtual Desktop Infrastructure running on Dell PowerEdge R730 servers. Storage was provided by Intel P3600 (1.2TB) Solid State drives to ensure exceptional desktop performance with over 450,000 IOP's of storage performance per host. Each server was also equipped with a second Intel P3600 (1.2TB) Solid State card to provide 1.2TB of raw storage to deliver VMware's vSAN hyper-converged infrastructure, a highly-scalable, high-performance Storage Area Network (SAN).

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Wayne Longton-Worley
Head of IT Services
Bishop Auckland College



For the high-end graphical performance required by the college, Phoenix utilised NVIDIA's Kepler architecture-based GRID GPUs which are specifically designed to enable rich graphics in virtualised environments. For the first time ever, NVIDIA's Kepler-based GPUs allow hardware virtualisation of the GPUs themselves, meaning multiple users can share a single GPU. This was ideally suited to the college's requirements to support as many simultaneous users as possible. The GRID K1 board features 4 discrete GPUs and a combined 16 GB of graphics memory, supporting up to 100 users simultaneously on a single board.

BENEFITS

Phoenix Software was able to meet the college's very demanding brief. By utilising the latest VDI technologies and a custom high-performance infrastructure, it was able to quadruple the number of workstations capable of running demanding applications like AutoCAD. What's more, since VDI requires only minimal hardware for the client devices, the college could re-purpose the majority of its previously obsolete machines and reinvest the savings to maximise the overall performance and scalability of the infrastructure.

Additional benefits:

Any device, anywhere – because all the heavy lifting and software is undertaken on the server, the college can now deliver its high-performance Windows environment to devices with minimal hardware, including non-Windows devices such as tablets. What's more, students are no longer restricted to accessing their software from the campus; they can even run AutoCAD from home! A far cry from fighting their way onto one of the 25 PCs in one room.

Blindingly-fast performance – when benchmarked against the college's previous top end workstations, the new VDI infrastructure is not just faster, it is blindingly fast. In one example, a 3D render which would have taken over 10 minutes on the old workstations can now be completed in just 30 seconds on a VDI client. A 20x gain in performance!

Centralised management – since this is a VDI solution, all of the clients can be managed centrally. This has significantly reduced the number of man hours needed to maintain the IT services at the Newton Aycliffe Training Centre and also reduced the time it takes to provision a new PC, since new images can be loaded almost instantly.

Expansion of college courses – with more than four times as many high-performance PCs available to use on and offsite, the new VDI infrastructure has enabled the college to launch additional engineering courses. Bishop Auckland College now offers full-time engineering courses at Levels 1, 2 and 3, and has even launched commercial training courses to organisations in the community.

“The VDI solution that Phoenix designed for the Newton Aycliffe site delivers all of the benefits of desktop virtualisation with none of the drawbacks. It really is a win:win solution.”

Wayne Longton-Worley
Head of IT Services
Bishop Auckland College

HOW CAN WE HELP YOU?

To find out how we can help you transform any aspect of your IT estate, contact the Phoenix Team now on:

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