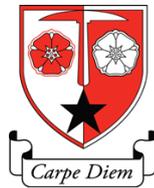# DELL EMC

A lesson in IT modernisation

Teachers gain an hour of teaching time each day with easy-to-manage cloud computing environment in end-to-end Dell EMC infrastructure

Education | United Kingdom

Business needs

Audenshaw School wanted to improve teaching and learning, as well as offer staff a better work/life balance.

Solutions at a glance

- Cloud Client-Computing
- Data Center
- Enterprise and Client Support
- Mobility
- Network Security

Business results

- Teachers save an hour a day thanks to increased uptime provided by robust thin clients

- More secure, mobile approach as a result of cloud client-computing

- Easy-to-manage environment requires just two IT staff

24x7

Teachers and students get 24x7 access to resources from any device

10yrs

Project set to provide 10 years of first-class computing resources

Learning and teaching have been transformed by technology. Most schools in the UK have a virtual learning environment (VLE) to support this, and for young people today the internet and mobile devices are a natural part of everyday life. As a result, it is up to schools to provide learning environments that make the most of available technology for the benefit of their students.

Audenshaw School in Manchester, north-west England, educates almost 1,200 boys aged 11–18 years, with a co-educational sixth form for students in the final two years. Founded in 1932 as Audenshaw Grammar, it has built up a reputation for excellence in sport, particularly in rugby. The school has undergone many changes in structure, the most recent of which was in 2010, when it became one of the UK's first academies, gaining independence from local authority control.

Steven Morton is the IT manager at Audenshaw School, and came on board in 2014 with a clear remit to modernise the school's IT and help deliver a backbone for excellent teaching and learning. "When I arrived, the school's core infrastructure was around 10 years old," says Morton. "It had been added to by a succession of IT managers, and at the time was being managed by an external company. Many of the technologies used were no longer supported by their manufacturers. The senior leadership team at the school knew that the solution had to be brought up to modern standards for the benefit of teaching and learning."

A blueprint for success

Morton had contacts at Nviron — Dell EMC Enterprise Partner of the Year 2015 — from a previous role, and asked the firm to help in putting together an integrated modernisation programme.

After initially migrating the school's email service to a federated Office 365 solution; Nviron then engaged in the wholesale replacement of the school's back-end infrastructure, including its network, servers and storage. "This was vital to the long-term success of IT at the school," says Morton. "Everyone was aware that the system was slow and starting to have an impact on teaching and learning. Turning this around was my initial brief, because I had experience of similar projects at other schools."

"The environment wasn't adequately supporting staff and students" he continues. "There was no wireless, no voice over IP, limited use of email and most importantly zero access to systems from outside the school building. The environment wasn't adequately supporting staff and students. The only way staff and students could access information was in IT rooms or from fixed terminals."

End-to-end for simplicity

Two key words Morton had in mind for the end-user experience were "modern" and "appropriate." "We didn't want to be in a situation where students' IT at home was out performing what the school could provide," he says. "Our students have grown up with technology — it's part of how they live — and they expect what they use at school to be at least as good as what they use outside.

Morton was sure that whatever the school implemented, it should come from one supplier and solution provider partner. "So often I've seen environments where technology comes from multiple vendors and there's no integration, or vendors blame each other when problems occur. I wanted to avoid that," he says. He also wanted to ensure 24x7 access to school systems from anywhere on any device. These included Moodle, the school's VLE; Capita School Information Management System, which governs timetabling, attendance, student progress tracking and other functions; and the school's financial application. "Overall, we had around 300 applications installed," says Morton, "about 70 per cent of which were no longer being used, so I wanted to simplify that as well."

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> Steven Morton, IT manager, Audenshaw School

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Morton wanted to use widely available technologies, unlike the proprietary platform the school had in place. "Our initial tender specified that the solution had to use an open architecture. It had to be compatible with other technologies, meaning we could expand and add to our solution much more easily," he says. He also wanted a central way to manage the whole infrastructure. "We were keen to make sure that we spent the right amount of money up front to gain an environment that could be managed by two IT people, rather than paying for a team of five or six technicians in the long run," he says.

Building from the ground up

"We started by installing a new 10 Gigabit Ethernet fibre backbone for our network," explains Morton. "This was based on Dell EMC Networking S4810 switches, and links out to Dell Networking W-series switches at the edge of the network." They are arranged in a spine/leaf architecture to maximise the number of redundant pathways between network components in case of failure. Morton and his partner Nviron also installed Dell EMC Networking W-Series wireless access points and controllers to give the school its first wireless network. The network is protected by a Dell SonicWall Network Security Appliance 3300 and a Dell SonicWall Network Security Appliance 4600. "The Department of Education demands that we provide an adequate level of filtering from external threats," says Morton. "Because we take cyber security extremely seriously, we chose SonicWall. We knew we were getting a strong firewall with a fantastic filter behind it, plus it all came under the Dell EMC umbrella, and could be centrally managed."

The school's new data centre is based on Dell EMC PowerEdge R730 and R630 servers and Dell EMC Storage PS6100X arrays. "My previous experience with Dell EMC is that the build quality has always been excellent," says Morton. Three Dell EMC PowerEdge R630 servers run the school's mission-critical applications, while seven PowerEdge R730 servers are used for the school's cloud client-computing infrastructure, with the virtual desktops being stored on the PS6100X arrays.

The school also later added Dell EMC PowerEdge R730XD and T630 servers in a remote location within the school as targets for replicated backup.

A hit with staff and students

Morton says, "Using a cloud client-computing model is a good way to ensure that data stays within the school where we know it's safe. If a laptop goes missing or is damaged, we know that data won't get lost permanently or fall into the wrong hands." To provide staff and students with secure, mobile access to systems, the school chose a range of devices. Staff were given Dell Latitude 5550 notebooks so they could work from home and pick up exactly where they left off in the classroom. "Teachers and other staff have a much better work/life balance now that they're using Dell laptops as thin clients," says Morton.

Classrooms have been equipped with a mixture of Dell Wyse 7000 series thin clients and Dell Wyse 5212 all-in-ones. The 7000 series has accelerated graphics and multimedia capabilities, which means it's perfect for art or design and technology classrooms. Morton and his team also feel the benefits from a management perspective. Morton says: "Because the Dell Wyse devices have no moving parts, they're robust and reliable. Previously, we might have had five PCs out of 30 being repaired at any one time. Now, all the devices work all the time so students don't need to share."

Audenshaw School protects its environment with Nviron support services. Nviron Service Desk proactively monitors all the critical components of the new infrastructure and provides regular on-site health checks. Patching is also applied regularly to ensure systems are secure. "Nviron takes a proactive approach to ensuring our systems are up-to-date and running smoothly. To date we have had no service outages," says Morton. This is further underpinned by ProSupport Plus, which provides Morton and his team with access to a dedicated technical account manager. "So far we've used ProSupport twice," says Morton. "A couple of drives failed on our PS Series storage and we were told that an engineer was coming before we even knew there was a problem. It's exactly the type of support we wanted, and it means we've got one less thing to worry about."

Three-way partnership eases complex installation

Morton believes that the design and the implementation expertise from Nviron was crucial to the project running smoothly and within budget.

He says, "The project was even more successful than I expected it to be. The fact that Nviron is a Dell EMC Premier Partner with Microsoft Gold accreditation proved invaluable from project conception right through to support. We all shared a vision for better learning outcomes, which gave me the confidence that we could manage such a large, complex installation."

An extra hour of productive time

"Everything we do in IT at Audenshaw School is for the benefit of teaching and learning," says Morton. "Teachers and students now have the latest software and hardware, and can access resources at any time through any device. They can be working on something in class, then continue it once they get home. Teachers can now go into a classroom and know the systems are ready for them. Before, they would switch on a PC and then have to wait for minutes while it booted up. As a result, we've recovered a lot of lost teaching time. Teachers gain an extra hour a day with our Dell EMC environment."

Ten-year plan pays off

When assessing the solution at the beginning of the project, Morton had to compare the cost of refreshing the existing infrastructure with the cost of employing more technicians to maintain and update an alternative. "One of the reasons I chose cloud client-computing was the longevity of the thin clients and the lower management overheads. I'm 100 per cent certain that over a 10-year period it will be more cost-effective," he says. "We were fortunate enough to have a visionary head teacher and a supportive governing body that shared our goals. We're delighted with the whole project — we have a fantastic solution implemented by a wonderful team of professionals. It's benefitting our students and staff greatly."

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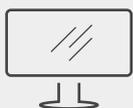
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