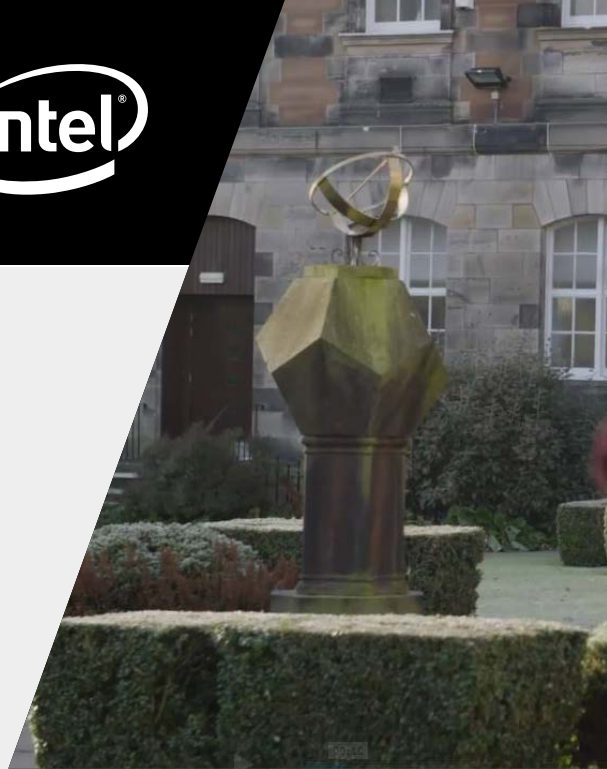# DELL EMC

intel

THE POWER OF DIGITISATION IN EDUCATION

The University of Dundee drives academic innovation while giving students fast, stable web access across campus with a transformational network solution

University of Dundee

Higher Education | Scotland

Business needs

The University of Dundee needed to replace its switching infrastructure and establish a foundation on which to deliver its One IT Strategy, a plan to support academic-led innovation with robust enterprise systems. Furthermore, the university wanted a financing solution that enabled predictable, monthly payments for its IT.

Solutions at a glance

- Networking
- Network Security
- Modular Infrastructure
- Servers powered by Intel® Xeon® processors
- Storage

Business results

- Improves student experience through better network performance

- Drives digitisation and enables development of new study programmes

- Raises satisfaction rates with improved wired and wireless network speed

- Gains affordable solution to support transformational IT project

100%

reliability with single points of network failure cut to zero

Reduces

network complexity and management time

"We're at a point of huge technological change in education. IT is transforming the way people form relationships and interact. We need to build on that," says Jonathan Monk, director of IT at the University of Dundee, which has been named Scottish University of the Year in The Times & Sunday Times Good University Guide 2017. It has also been voted one of the top 10 universities in the U.K. by students taking part in the National Student Survey.

To maintain its standing, the university has developed the One IT Strategy. At the heart of the strategy is a plan to drive academic innovation through enterprise IT systems. Comments Monk, "The network is central to delivering our One IT Strategy. You can't overestimate the value of our wired and wireless infrastructures in delivering education services."

But the network was becoming a barrier rather than an enabler. Students found it challenging to use study facilities such as the library because the WiFi network didn't offer the capacity to connect their devices. In addition, the IT team found it time consuming to manage hardware because of the network's complexity, which meant that specialist skills were increasingly required.

Future scalability is key

The university looked to upgrade its campus network, replacing the ageing border gateway routers, core/distribution, data centre and access layer switches. But it wanted to spread payments over a number of years and avoid any significant upfront costs. Monk says, "Our aim was to create a network solution that we could easily scale to meet our IT goals. But, just as importantly, we wanted to work with a solution provider that had financing capabilities."

Finding support that steps up to the mark

The University of Dundee had a long-standing relationship with Dell EMC, which provided the university's server and storage solutions. These ranged from Dell EMC Storage SC 9000 Series arrays to Dell EMC PowerEdge servers with Intel® Xeon® processors, Dell EMC PowerEdge FX and Dell EMC PowerEdge VRTX modular platforms.

The university requested proposals for the campus network and Dell EMC Premier Partner Circle IT responded. Circle IT delivered a joint response with Dell EMC that highlighted the close working relationship between both parties. The university awarded the network project to Circle IT and Dell EMC Networking experts, to design a solution. "We found that Dell EMC and Circle IT really listened to what we wanted to achieve," says Monk. "What's more, we were able to focus our resources on operational expenses by working with Dell Financial Services."

Affordable solution ensures transformational IT gets the green light

The university could maximise its budget by working with Dell Financial Services (DFS). It was able to deploy the Dell EMC solution it required while overcoming any constraints on its existing resources. In addition

> "*We can advance our distance study programmes and develop courses for life-long learning through our project with Dell EMC and Circle IT.*"
>
> Jonathan Monk, director of IT, University of Dundee

stakeholders could link the lease agreement with the lifecycle of its Dell EMC solution to protect against obsolescence and reduce the cost of future refresh cycles. "We got more out of our IT budget by working with DFS while improving our capabilities to enhance the network over time," says Monk.

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Flattening, simplifying and improving the network

A team from the university and Circle IT visited the Customer Solution Centre in Limerick to see a demonstration of the Dell EMC servers with Intel® Xeon® processors, as well as the Dell EMC Networking technologies proposed for the campus and wireless environment.This was carried out using the centre's own live wireless network. The solution was based on a Dell EMC Campus Reference Architecture. The design follows a leaf-spine topology where multiple interconnects between the access layer and distribution layer help avoid latency issues and data bottlenecks. The Dell EMC solution featured:

- Dell EMC Networking Z Series at the core

- Dell EMC Networking S Series at the distribution layer

- Dell EMC Networking S Series in the data centres

- Dell EMC Networking N Series at the access layer

As part of the solution, Circle IT installed Dell EMC Z Series switches at each of the university's two data rooms. The two Z Series switches are configured as a virtual link trunking core and interconnected with 4x 40 Gigabits per second (Gbps) links configured as a 160Gbps aggregated link. The Dell EMC Networking S Series switches act as the distribution and access layers in the leaf-spine topology, providing scalability, high availability and low latency access across campus to applications and resources. Dell EMC Networking N Series switches are used at the access layer.

In addition to the wired solution, Circle IT installed a converged wireless solution, including 2x Dell EMC Networking W-7205 Master Wireless Controllers, plus 3x Dell EMC Networking W-7220 Local Wireless Controllers, which in turn control and manage more than 3,000 Dell EMC Networking Access Points. The entire solution is managed through Dell EMC Networking W-Series ClearPass and Dell EMC W-Series AirWave.

DELLEMC

One IT Strategy becomes a reality

The deployment of the network is ongoing, but the university is well on its way to delivering a transformational IT project based on Dell EMC Networking and servers with Intel® Xeon® processors, which will underpin its One IT Strategy. Comments Monk, "The network is the first in a series of important IT initiatives to help the university develop in line with increasing digitisation. We can advance our distance study programmes and develop courses for life-long learning through our project with Dell EMC and Circle IT."

Raised satisfaction rates for network

Students can work more effectively thanks to the Dell EMC network, as well as enjoy their leisure time more. There are no longer WiFi capacity issues in the library because the network provides fast web access for everyone. Students can also use their games consoles and personal devices at the halls of residence. "We're delivering the same great experience on both wired and wireless networks through the Dell EMC solution," says Monk.

100 per cent reliability

The university isn't affected by problems with its switching infrastructure, and the IT team doesn't spend time replacing the old switches as it once did. "The Dell EMC switches just work. Because we've centralised management, we can easily control the entire solution through Dell EMC ClearPass Access Management and Dell EMC OpenManage Network Manager. It saves us a lot of time and effort," says Monk.

IT staff are now more customer-facing

With improved reliability, the IT team dedicates more time to working with students and staff face-to-face. It allows them to add value to the university. "People don't always realise the number of services we can offer to help with research or study programmes. We can provide a more visible service thanks to our Dell EMC network and help people gain the full transformational impact that IT offers in education," says Monk.

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