



## Data Integration works in partnership with The University of Reading to enhance secure communication for all

Anticipating significantly increased demands on the network from staff and students, in 2002 the University of Reading chose Data Integration for the complete refresh and development of its data network and security infrastructure. The old infrastructure has been replaced with what is now a resilient, highly available network in order to support the growth of the University.

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# University of Reading

The University of Reading is one of the top 20 most research-intensive universities in the UK, a major contributor to the knowledge economy, and internationally recognised for the excellence of its teaching on a broad range of Arts, Humanities and Sciences programmes. With a student population of more than 17,000, and a staff of 3,500, the University is based on three campuses, – the main Whiteknights parkland campus, and the campuses at Bulmershe Court and London Road, all within 15 minutes of Reading town centre.

Back in 2002, the University realised that its campus network was coming to the end of its life and would need to be upgraded in order to deliver a robust network that could underpin the University's desire to provide secure, highly available, flexible access to online information for all its members. The University IT Service carried out an OJEU procurement over the spring of 2002 and short-listed a number of equipment vendors to bid for the network upgrade project, one of which was Extreme Networks. Extreme recommended Data Integration as its preferred solutions partner to respond to the tender.

Following tough competition from the other contenders in the bid, Data Integration was finally selected as the integrator to undertake the project. Mike Roch, Director of IT Services at the University of Reading explains why: "Data Integration's proposals for the future development of our network demonstrated that they really understood what we required and what we were trying to achieve. The fact that they had previous experience of deploying these kinds of solutions in other university networks also gave us reassurance that our project was in safe hands."

The initial project saw the replacement of the core and distribution layer of the campus network with Extreme Networks' BlackDiamond, Alpine and Summit switches, creating a highly resilient, high-performance network core. Security at the University's JANET connection was enhanced with a Juniper Networks NetScreen firewall. The core network overhaul was carried out during the summer of 2002, with the new network core up and running for the start of the new academic year that September.

Data Integration was responsible for the design, testing, project management and installation of equipment as well as providing ongoing 24-hour support. A framework agreement was put in place to guarantee future pricing for further equipment and services that the University might require.

The halls of residence project, readingCONNECT, launched in September 2004, extended the campus network into the halls of residence, providing 100 Mbps connections into 5,000 rooms that had previously relied on slow dial-up access. With Extreme Networks' BlackDiamond 6808 core switches driving the halls of residence network, readingCONNECT has delivered fast services to

the University's students, allowing them to work more flexibly without compromising the security of campus resources.

In addition to designing and building the readingCONNECT network infrastructure, Data Integration provides readingCONNECT with a complete managed gateway security solution. This includes Juniper NetScreen 500s providing firewalling and QoS, Fortinet gateway anti-virus to provide high-performance scanning of SMTP and HTTP traffic (which augments the University's desktop anti virus protection) and Packeteer 6500s managing class of service and application usage. The Packeteer units are particularly important for controlling students' use of peer-to-peer applications. They ensure that sufficient bandwidth is available for academic requirements and help the University to manage its potential liability to copyright infringement caused by illegal music, video or software downloads.

Data Integration designed and manages the readingCONNECT network and handles all configurations and change control. The University IT Service offers user support through a dedicated helpline, website and readingCONNECT Assistants – students that provide first-line IT support to their peers using the readingCONNECT halls of residence network. By working to a standard set of procedures, which both Data Integration and the University follow, a smooth hand-off of issues between the two parties is assured. Data Integration also trains the new intake of readingCONNECT Assistants each year.

During the course of the readingCONNECT project, Data Integration's relationship with the University evolved from simply supplying and supporting networking equipment, to becoming a true extension of the IT Services department. Data Integration advises on network and security developments, provides 24x7 second- and third-line support for the readingCONNECT halls network and 24x7 third-line support for the campus networks. Reading's in-house network team cover second-line support of the campus network during office hours with Data Integration providing 'out-of-hours' second line support. In essence, Data Integration acts as a 'safety net' for the University's network team, providing advice on how to keep the network secure and maintain high availability, giving technical assistance in case of a network or security emergency and providing a buffer that enables the IT Services department to run as normal when in-house IT staff are on holiday or off sick.

The University's leading position as a centre for research enabled it to secure £13 million funding from the second phase of the government's Science Research Investment Fund (SRIF2). In 2005–6 this enabled IT Services to build on the initial core and distribution network installation and extend secure, resilient, gigabit QoS networking to buildings and 100 Mbps connections to the desktop of every

researcher on the Whiteknights campus.

A further project due for completion this year sees Data Integration extending the campus network into the refurbished Philip Lyle Building, which will give the University a new state-of-the-art Bioinformatics Research and Development facility.

In common with other universities, total cost of network ownership is very important to the University of Reading so it needed a network solution that delivered performance, without complex management and administration. With the solution based on a single hardware, software and management architecture managed using Extreme's EPICenter suite, Data Integration has provided a network that can be easily configured and managed from a central location.

"The Data Integration solution has enabled us to link together all the departmental networks within the University that were previously using their own equipment. Standardising the network has made it simpler to manage and support. We have 17,000 Extreme Networks ports currently spread across the network," said Mike Roch.

Data Integration also donated a high-speed wireless network for the University's new creative-thinking lab. *Innovation Works@Reading* is only the fourth facility of its type in the UK, and is the sole innovation lab in the Southeast. It offers a whole new approach to solving business problems and helping people think 'outside the box'. *Innovation Works* is an example of how the University is reaching out and forging closer links with the business community.

More recently, Data Integration has handled the firewalling and intrusion detection for the University's second JANET link, which will be installed over the summer of 2006 to provide increased bandwidth and resilience.

Mike Roch concludes: "The projects DI has assisted us with have enabled the University to raise standards of security, whilst enabling faster and more reliable access to online information. Through our success in securing funding and by working in partnership with Data Integration, we have been able to develop our communications infrastructure far beyond our original expectations. As a result of this collaborative approach, I believe we now have one of the best campus networks in the UK."

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