



## INFRASTRUCTURE

# Rochdale Schools, EDIT Department

The EDIT team of Rochdale Metropolitan Borough Council are responsible for providing IT services to over 15,000 network users at 83 schools spread across the Lancashire towns of Rochdale, Heywood, Littleborough and Middleton

## THE CHALLENGE

### Upgrading a Dated Network Infrastructure with State of the Art Networking Systems

The schools' existing IT systems had been in place for a number of years and the infrastructure was beginning to show its age. The EDIT team were concerned that the performance of these systems would no longer be able to fulfil the requirements of a modern school curriculum and, as such, needed to be upgraded to provide improved functionality.

The EDIT team engaged Phoenix Software to design and implement a new network infrastructure based on the latest available technologies. The following key objectives were identified for the network design:

- The new systems must provide centralised administration of all servers and network users in a single directory
- Email and Internet access to be provided via a centralised Internet connection and email servers



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- Each school's network must be secured against access from another school's users
- All students to be allowed access to internal email, but denied access to Internet email
- Student email to be delivered via a browser-based client
- Internet bandwidth is to be maximised via the use of tiered content caching

## THE SOLUTION

### Windows & Exchange 2003

Each school had previously been served by a separate Windows NT4 domain with a single domain controller and up to 200 client machines. A 64Kb ISDN line provided each school with a link to the Internet for Web browsing and POP3 email. The EDIT team had already decided to upgrade the schools' network communications infrastructure by extending the existing council WAN to incorporate all the school sites. This would link all the schools together into a single network for the first time and enable the overall networking systems to be redesigned from the ground up.

As with many IT support teams, the EDIT staff had developed a high level of skill in supporting the existing environment, but did not have a great depth of experience in planning and implementing a new network infrastructure. Steve Frost, the EDIT team's project manager, decided to contact Phoenix to discuss the best options for upgrading the network.

## THE PLANNING PHASE

The initial scope of the engagement was for Phoenix to provide EDIT with a comprehensive report detailing the major design decisions that had to be taken, along with the pros and cons of the available options and overall recommendations of how the new systems should be implemented. This would deliver a clear roadmap for the implementation of the new systems and enable EDIT to make informed choices at every stage.

The final stage of the planning phase was a project kick-off meeting where the design decisions were finalised and project responsibilities agreed. Windows 2003, ISA Server and the recently released Exchange 2003 were chosen for the core systems at the central site, with Windows 2003 and ISA Server deployed at each school to deliver the required network security and Web caching.

The unique requirements of the Rochdale schools' environment meant that it was ideally suited to Windows 2003 and Exchange 2003. The Global Catalog caching capability of Windows 2003 coupled with the enhancements to Outlook Web Access in Exchange 2003 delivered significant benefits over the previous versions of these systems.

## THE IMPLEMENTATION PHASE

As the EDIT team had limited experience of working with Windows 2003 and configuring Active Directory, Phoenix Software was engaged to set up the central server infrastructure and the pilot schools' sites. Once the overall Active Directory, Exchange 2003 and the pilot schools' servers had been completed, the configuration was fully documented and the project was handed over to the EDIT team for completion. This approach enabled the EDIT team to take time out for valuable Windows 2003 training while the majority of the project was completed by experienced technicians. The EDIT team were then able to perform the remaining schools' server installations themselves using the detailed build documentation and best practice advice provided by Phoenix, thus reducing the overall cost of the project.

## WINDOWS 2003 AND EXCHANGE 2003 DETAILS

A single Active Directory was created with a separate Active Directory Site for each school. This minimises replication traffic between the domain controllers while enabling each school's workstations to logon to a local domain controller.

The installation of ISA Server at each school provided localised Web content caching and advanced security capabilities.



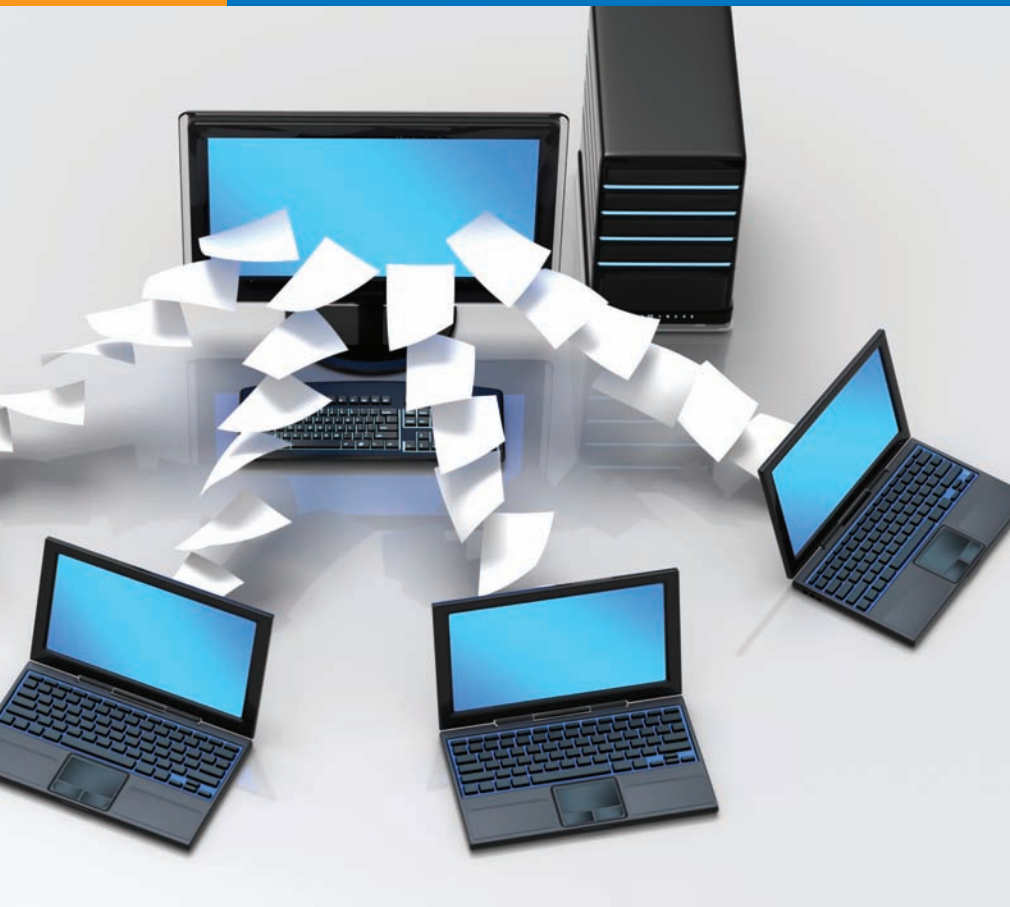
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**STEVE FROST,**  
PROJECT MANAGER  
ROCHDALE SCHOOLS, EDIT TEAM



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The central site has three Exchange 2003 Servers to provide email facilities for 15,000 network users, with a central ISA Server to perform general Web content caching. Two central Active Directory domain controllers support the FSMO (flexible single master operations) roles and control replication from the central site to each school's site. A centralised backup solution was designed by Dell, providing two dedicated Network Area Storage boxes for disk-based backups, each with a high speed LTO drive (linear tape-open) for committing these backups to tape.

## PROJECT CONCLUSION

The project was completed on time and within budget prompting Steve Frost, EDIT team project manager, to comment:

"Faced with the challenges of meeting local and national demands for the use of ICT in education with limited resources, the EDIT Team sought to maximise the benefits of schools' investment by the introduction of a wide area network. This would allow learning and other resources to

be shared effectively and facilitate managed broadband Internet access while keeping the costs of ownership as low as possible. The use of Windows 2003 and Exchange 2003 features provided solutions to many of the problems anticipated but, given the small size of the team and the demands placed upon it in supporting existing systems, a partner in the development of the system was sought.

"As the LEA already had links with Phoenix, they proved to be the ideal partner in the development of systems to meet schools' needs. Phoenix has worked closely and creatively with EDIT staff from the development stages through to the implementation of a system that is transparent, robust and supportable.

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