



Server virtualisation project enables increased business agility and assured business continuity

A proactive approach to service improvement by BT under a ten-year outsourcing agreement has increased application performance and improved business resilience for the City of Edinburgh Council

Benefit	Outcome
Lower hardware overheads and support cost	Requires fewer physical servers
Improved utilisation of resources	Increases CPU usage
Enhanced application performance	Optimisation enables faster application response and availability
Improved business resilience	Centralisation makes management, backup and recovery easier
Improved business agility	Faster response to new or changing requirements

Server virtualisation delivers a wide range of benefits

Executive Summary

In 2001 the City of Edinburgh Council entered into a 10-year IT outsourcing partnership with BT. Under the £100 million contract, BT has taken full responsibility for the day-to-day operation and evolution of the Council’s networked IT infrastructure. BT inherited a diverse array of equipment and operating systems, running a wide variety of applications. By 2005 it had become apparent that the Council’s server infrastructure was in need of substantial overhaul.

Servers were not centrally hosted but distributed throughout the Council. Support costs were escalating and concern was growing about the longevity and resilience of the estate. BT decided that in order to safeguard service it needed to implement greater control and consolidate the server estate into a centralised data centre environment. A server virtualisation approach was adopted: enabling greater utilisation of server resources, lower support costs and increased resilience by reducing potential points of failure.

The programme extended over a 14-month period during which all 19 selected applications had been successfully migrated into a hosted virtual server environment, with zero unscheduled downtime. Applications now run much more quickly, are more reliable, and are available at all times. The virtualisation project has also enhanced resilience and assured business continuity. The City of Edinburgh Council reaffirmed its confidence in BT by extending the outsourcing partnership until 2016, and a second phase of the virtualisation project is now being planned.

“The whole project was managed very smoothly by BT and most users of our applications have been completely unaware of the transition. But what all of our people have noticed is that applications now run much more quickly, are much more reliable, and are available at all times.”

Andrew Unsworth
Head of IT
The City of Edinburgh Council

Case study

The City of Edinburgh Council

“The second phase of the project will embrace even more complex consolidation involving for example SQL, Auto CAD, Oracle and Business Objects applications. Given the success of the first phase we have absolute confidence in BT’s capability and ability to execute.”

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Marketplace

Edinburgh’s high standards of amenity and environment, together with its many cultural and heritage assets, make it an attractive place in which to live and work. Each year the City of Edinburgh Council receives over £1.2 billion from the Government and council tax payers to provide services for the City’s 440,000 residents, businesses, and organisations.

The Council is determined to become one of Scotland’s top performing local authorities. It is well on the way to achieving this and already operates with 24 per cent fewer staff per 1,000 citizens than other comparable local government organisations. The Council’s ‘Smart City’ vision is a service improvement programme that recognises the critical role of technology-based solutions to providing services as cost effectively as possible.

Business opportunity

In 2001, to help deliver the Smart City vision, the City of Edinburgh Council entered into a 10-year IT outsourcing partnership with BT. Under the terms of the £100 million agreement, BT has taken full responsibility for the day-to-day operation and evolution of the Council’s networked IT infrastructure. Around 150 former Council employees have been successfully transferred to BT, while maintaining existing staff terms and conditions of employment in keeping with TUPE (Transfer of Undertakings, Protection of Employment) regulations.

A key strand of the IT outsourcing arrangement is the execution of a service improvement programme. The objective is to create a strategic enabling IT infrastructure to allow the utilisation of leading edge technology-based solutions to transform the way services are delivered. This in turn will improve customer service, productivity, and efficiency while reducing IT support costs. Successful IT transformation projects had already been implemented in functions such

as payroll, procurement, planning, housing, and benefit payments. However, it had become apparent that the Council’s server infrastructure was in need of substantial overhaul. Support costs were escalating and concern was growing about the longevity and resilience of the estate.

Andrew Unsworth, Head of IT at the City of Edinburgh Council, explains: “BT had inherited a diverse array of equipment and operating systems, running a wide variety of applications. Servers were not centrally hosted but distributed throughout the Council, sometimes in inappropriate environments. The network had also been allowed to grow in an uncontrolled manner to support standalone applications.”

BT solution

BT decided that in order to safeguard service it needed to implement greater control and consolidate the server estate into a centralised data centre environment. A server consolidation programme was born as part of the overall Council Service Redesign Project. BT initiated and managed, this included other projects such as a refresh of desktop equipment.

BT decided to adopt a server virtualisation approach. Server virtualisation involves the “masking” of server resources – including the number and identity of physical servers, processors, and operating systems – from server users. This is accomplished by using a software application to divide individual servers into multiple virtual environments. Logical hard disk divisions are created so that it is possible to have different operating systems on the same server. This gives the appearance of separate hard drives for file management, multiple users, or other purposes. It ensures greater utilisation of server resources, lowers support costs, and increases resilience by reducing potential points of failure.

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A total of 30 servers were to be consolidated into the virtual hosted environment. It was determined that some services running on those servers were no longer required, and the final scope of the project was that a total of 19 services were to be consolidated into a full production infrastructure. Those services included front and back office systems such as cash receipting, benefit fraud investigation, homeless management, trade waste collection and HR systems supporting all of the Council's six departments.

Virtualising a legacy estate, with some operating systems and application versions that are well beyond their supported life is fraught with potential difficulty. The migration therefore needed to be carefully orchestrated. Initially a test and development environment was created to ensure the integrity of the new virtualised infrastructure and provide an environment for the validation of individual applications prior to transfer. The work needed to be executed in collaboration with third party application suppliers, with BT taking prime responsibility for vendor liaison to ensure compatibility and interoperability within the new standard operating environment.

Results

The programme extended over a 14-month period during which all 19 selected applications had been successfully migrated into a hosted virtual server environment, with zero unscheduled downtime. Andrew Unsworth says: "The whole project was managed very smoothly by BT and most users of our applications have been completely unaware of the transition. But what all of our people have noticed is that applications now run much more quickly, are much more reliable, and are available at all times."

All this has been accomplished without incremental cost to the City of Edinburgh Council because under the terms of the outsourcing partnership BT finances the service improvement programme. The server consolidation project required an investment by BT of around £470,000. This will generate support savings over the next five years of over £760,000 and deliver payback in less than 3 years.

The virtualisation project has increased business agility, enhanced resilience, and assured business continuity. The data centre approach now also provides a development, testing, and staging environment to enable the rapid validation of application enhancements or new application development.

The relationship between BT and the City of Edinburgh Council is going from strength to strength and the Council reaffirmed its confidence in BT by extending the outsourcing partnership until 2016. A second phase of the consolidation project has now commenced involving a further 20 servers that were initially considered too complex for consolidation.

Andrew Unsworth concludes: "The second phase will embrace even more complex consolidation involving for example SQL, AutoCAD, Oracle and Business Objects applications. Given the success of the first phase we have absolute confidence in BT's capability and ability to execute."

Why BT?

- BT is the City of Edinburgh Council's strategic IT services outsourcing partner under a contract that has been extended to 2016
- BT has extensive knowledge and experience in creating and operating data centre environments, both for itself and its customers
- The City of Edinburgh Council had confidence in BT's ability to execute a server consolidation programme that would improve public service delivery

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Technology blueprint

Virtualisation allows for the consolidation and secure partitioning of data from separate servers onto a single platform. It brings greatly improved usage of processing power while leaving sufficient headroom in terms of unused capacity to ensure optimised operation. For the customer it ensures reduced power and space requirements and confers lower total cost of ownership.

The BT server virtualisation solution for the City of Edinburgh Council uses x86 server systems and VMWare ESX Server virtual infrastructure software. VMWare ESX Server abstracts processor, memory, storage,

and networking resources into multiple virtual machines, giving greater hardware utilisation and flexibility. Production-proven at thousands of customers of all sizes, ESX Server delivers the highest levels of performance, scalability, and flexibility.

Under the solution BT provides and manages the hosting environment, the server hardware, patch management, and application upgrades. To maximise security BT also hosts a fully managed firewall at the data centre and manages many of the support contracts with individual third party application providers.

Main BT products and services

- IT Outsourcing
- Fully BT Managed Server virtualisation hosted within a data centre environment, using VMWare ESX Server virtual infrastructure software

Offices worldwide

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