

BT supports 20 million customers with IBM System z9 and IBM System Storage



BT (www.bt.com) is one of the world's leading providers of communications solutions, serving customers in Europe, the Americas and Asia Pacific. Its principal activities include networked IT services, local, national and international telecommunications services, and broadband Internet products and services. In the UK, BT serves more than 20 million business and residential customers with more than 30 million exchange lines, as well as providing network services to other licensed operators.

Overview

■ The Challenge

Reduce software licensing costs through server consolidation; free up floorspace and reduce power requirements in data centres; enhance disaster recovery capabilities; reduce total cost of ownership for mainframe environment

■ The Solution

Consolidating mainframe environment from four machines in four data centres to two IBM System z9 Enterprise Class servers in each of two data centres; four IBM TotalStorage DS8300 enterprise disk systems for mainframe data storage; IBM Extended Remote Copy (XRC) and OMEGAMON software

■ The Benefit

Single vendor for mainframe servers and disk storage; estimated 20 per cent improvement in price-performance through data-centre consolidation; estimated 10 per cent improvement in price-performance for mainframe systems; greater capacity and more flexibility for the future

BT relies on mainframe technology to support its core billing and customer information systems. Many other major systems used by the company exchange data with the mainframe systems, which are directly responsible for around 60 per cent of BT's revenues.

Aiming to reduce costs, free up data-centre floorspace and improve its disaster recovery capabilities, BT is consolidating from four data centres to two, each with two IBM System z9 Enterprise Class servers and two IBM TotalStorage DS8300 enterprise disk systems.

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COO for Mainframe Products at BT*

and more effective disaster recovery capability. IBM was uniquely able to provide the full solution – mainframe systems, enterprise-class storage and software tools – and the technical expertise to help us make it a success.”

The heart of business operations

BT’s mainframe systems are the focal point of a large and complex IT infrastructure which has more than 20,000 servers in total. The most important mainframe application is CSS, the core billing system for the company’s UK customer base. Telephone calls are tracked by the exchanges, and data on the calls passes through various pricing systems into CSS, where it is processed, aggregated and finally output for billing.

As the primary store of customer data, CSS also interfaces with around 700 other systems, dealing with customer queries, order handling, fault reporting, maintenance scheduling and more.

Says Fretten, “Our mainframe applications are inextricably linked with almost everything we do. For instance, when a customer logs in to his Internet account and changes his Friends & Family discount numbers, that data is stored in CSS.”

Protecting business-critical systems

The business-critical nature of CSS and other mainframe systems makes it particularly important for BT to ensure that they are well protected against failure. Prior to the new IBM solution, BT had three production mainframes in separate data centres, each in a Parallel Sysplex configuration, with an additional mainframe in a fourth data centre for disaster recovery purposes.

This arrangement was unsatisfactory, as Alan Fretten explains: “The fourth mainframe was also used for test and development, so in the event of a disaster at one of the production sites, the development team would have lost its key working environment. What’s more, there simply wasn’t enough capacity on the backup machine to take over all operations: in the unlikely – yet possible – event of two or more simultaneous disasters, we would not have been able to restore everything immediately.”

IBM worked with BT to design a new dual-centre architecture for BT’s mainframe systems in which each centre has enough available capacity to run the entire workload, including all test and development. The key enabler for the solution is the new IBM System z9 Enterprise Class (EC) server – the latest generation of mainframe technology.

The z9 EC can scale to 54 processing engines, and builds on the classic strengths of the mainframe: high availability and security, non-disruptive scalability and outstanding data-processing capabilities.

“The z9 EC servers gave us the capacity to make the dual-centre architecture a reality,” comments Fretten. “The business is now much better protected against disaster, and it’s easier to manage two centres than four. Price-performance has improved: we estimate that each new engine can do 10 per cent more work than the previous generation, and we have ample room for growth. In addition, moving to just two data centres cuts our Parallel Sysplex costs considerably, and we are looking to have a single Geographically Dispersed Parallel Sysplex across both sites, for further cost savings.”

Keeping data safe

The move to a dual-centre architecture with full disaster recovery in either direction meant that BT needed to boost its mainframe storage capacity. The company was working with another vendor for its mainframe storage, and asked IBM to make a competitive bid for this part of the solution.

Says Fretten, “Our incumbent vendor proposed a solution that would mix old and new storage systems. We preferred the IBM approach – based on all-new hardware – and we also saw a clear advantage in having both elements of the solution from a single vendor. The new DS8300 systems offer superb performance and scalability, while the Extended Remote Copy and OMEGAMON tools will help us to enable reliable, high-speed disaster recovery.”

IBM installed four DS8300 enterprise disk systems in the two remaining data centres, with Extended Remote Copy (XRC) for future cross-site mirroring and OMEGAMON software for network monitoring.

Innovation in migration

BT is now steadily migrating systems from the old machines to the new z9 ECs, aiming at all times to keep risk and disruption to a minimum.

The internal team handles all migration work, using plans developed by BT in conjunction with IBM, as Fretten explains: “Our team has already saved two months from the schedule by identifying ways to accelerate the migration. As we become more confident and skilled, we have been able to increase the number of systems that we migrate in one go.”

He adds, “Working on a project of this scale has really invigorated the mainframe team. Their response has been highly enthusiastic, and the team continually finds innovative ways to improve the migration processes.”

IBM continues to support BT with a dedicated team of mainframe and enterprise storage specialists. “We’re delighted with the support from IBM for what is a complex and potentially risky project,” says Fretten. “During the design phase, IBM was able to provide a technical expert with 37 years’ experience in mainframe technology. The ability to draw on that kind of know-how is helping us to minimise risk and to keep business-critical systems running normally during the migration.”



IBM United Kingdom Limited

PO Box 41
North Harbour
Portsmouth
Hampshire
PO6 3AU

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