

London Stock Exchange gets the facts and dumps Windows for Linux

by David M Williams
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Microsoft's marketing arm excitedly churned out a case study in 2005 when the London Stock Exchange (LSE) rolled out a C# stock exchange ticker system on Windows Server 2003 and SQL Server 2000. Four years later the LSE has scrapped the whole system in favour of a Linux-based solution instead.

The London Stock Exchange was established in 1801 and employs hundreds of people. It has a fast-moving atmosphere and has a crucial need for reliability, accuracy and high performance. It is the most international equities exchange in the world.

During its "Get the Facts" campaign Microsoft produced a case study documenting the LSE's adoption of a C#, SQL Server 2000 application to facilitate real-time stock information prices. About 40% of the LSE's revenue came from sale of such information and consequently the application had the potential to deliver real value, provided it was up to the task.

Previously, the LSE disseminated data through the London Market Information Link (LMIL), a COBOL application running atop a Hewlett Packard Tandem environment.

This architecture was noted as being extremely reliable and with a full 100% availability record. Despite this, it was not known for its agility. Any development or scaling took time to design and implement.

The LSE thus sought a new system which would retain reliability but with greater capacity and be cheaper to manage.

Several proposals were reviewed with Microsoft and Accenture having the winning tender in the form of Infolect, designed to handle more than 15 million real-time messages per day through a network of 120 HP ProLiant servers across multiple data centres. These messages were distributed to more than 107,000 trading screens in over 100 countries.

Although the volume of messages is massive, Infolect is, according to Microsoft, "100% reliable on high-volume trading days." At a cost of 40 million pounds or \$USD 65 million you would certainly hope so.

The LSE Chief Technology Officer (CTO) at the time said the decision to implement Infolect on a Microsoft architecture "was a high-visibility to customers of the importance placed on reliability and support."

Infolect went live on September 19, 2005 with big boots to fill. In the preceding six years there had been no production outages at the LSE. It was critical the new Microsoft-based platform prove to be just as reliable.

Although Infolect was not replacing a Linux system Microsoft still touted this case study as an example of Windows Server being chosen over Linux for reliability reason. Microsoft used this claim as the headline for the first issue of "The highly reliable times."

Of course, nothing in the case study makes any reference whatsoever to Linux, unless it is assumed that one or more of the potential architectures reviewed was Linux-based. (It's not uncommon, it seems, for the "Get the facts" case studies to have sensational titles which are not supported by the story.)

Nevertheless, fast forward to today and the London Stock Exchange is writing off its huge \$USD 65m development, looking instead to Linux. What happened?

Windows happened. Famed for "blue screen of death" errors, and with many a systems administrator practicing cautionary weekly or monthly reboots, it appears Windows Server 2003 was not up for the task.

The previous platform used by the LSE had an enviable 100% availability reputation. It stands to reason the C# application could have modifications tested and rolled into production more swiftly than the COBOL software but betting on Windows for high reliability requires quite a degree of faith.

Sure enough, Infolect suffered connectivity failures on November 7 2007 which embarrassed the LSE after promoting its systems as a model for other exchanges.

Worse, on the fateful day in September 2008 when the U.S. Government came to the rescue of Freddie Mac and Fannie Mae trading at the LSE ceased at 9:15am GMT due to a "software-related" fault. The outage lasted six hours and 45 minutes.

Reuters reported the words of one trader who said, "We have the biggest takeover in the history of the known world ... and then we can't trade. It's terrible."

Computerworld ascribed the critical downtime directly to the Microsoft/Accenture software, while citing anecdotal comments from traders about how slow the system could get.

This month the LSE announced its acquisition proceedings for MillenniumIT, a Sri Lankan development company with expertise in reliable, scalable production systems.

David Lester, the exchange's Director of Information and Technology said, "The new technology is a lot lighter, nimbler and easier to install."

Ironically, Lester added, "It will also enable faster releases" with Infolect still requiring three to six months between releases despite the problem of change management being one of the original driving factors to switch in the first instance.

This acquisition of a vendor is a remarkable shift in the LSE's technology strategy which previously outsourced as much as possible.

The new platform, produced by MillenniumIT, will be based on Linux and Solaris with an Oracle back-end database. A Norwegian exchange will also migrate to MillenniumIT, while the New York Stock Exchange adopted Linux two years ago.

It is expected the new deployment will take 18 months and offer trading speeds six times greater than that permitted by the Microsoft architecture, from 2.7 milliseconds to 0.4 milliseconds.

In an industry where milliseconds really can mean the difference between profit and loss it's small wonder the stock exchange has decided to cut its losses, abandoning the \$USD 65m Infolect system after only four years.

In a further blow to Microsoft the LSE also predicts moving to Linux will save a further 10m pounds (or \$USD 14.7m) through reduced hardware requirements, licensing costs, technical staff and related items.