

Linux Accounts for Savings

Through the mainframe's virtualization capabilities, Banco do Brasil no longer makes deposits at the server farm **BY NEIL TARDY**

It was the one type of deposit that wasn't welcomed at Banco do Brasil. The bank, which has branch offices throughout Brazil and around the world, had been addressing its soaring growth by regularly depositing new servers into its datacenter. But rather than continuing to expand a massive server farm consisting of hundreds of Intel* and UNIX* boxes, Banco do Brasil turned to Linux* and the IBM* mainframe. Now with three IBM @server zSeries* servers doing the work of many Intel and UNIX boxes, Banco do Brasil relies on the mainframe's unparalleled virtualization technologies to simplify its development process, reduce administrative and licensing costs and shorten deployment time.

'Hungry' Servers

The history of Banco do Brasil goes back nearly 200 years and its inception predates even Brazil's independence. According to the bank's Web site (www.bb.com.br), Prince Dom João created Banco do Brasil shortly after his arrival in Rio de Janeiro from Portugal in 1808. When it began its activities on Dec. 11, 1809, Banco do Brasil was just the fourth issuing bank in existence.

Today, the bank offers an array of services ranging from retail banking to private savings to insurance and investments. Based in Brasilia, Brazil's capitol, it's present in about 3,000 cities worldwide. While most of its 3,241 branch offices are located throughout the South American nation, Banco do Brasil also reaches international locales like New York City, Miami, London and Tokyo.

In 2003, Banco do Brasil reported that 8.3 million clients received their income at the bank. That figure represented an increase of 16.2 percent compared to 2002.

To the world, Banco do Brasil was a thriving entity. But the accelerated growth rate posed daunting challenges to a 2,000-person IT department charged with serving a user base of about 70,000 employees.

Generally, the response was to add additional servers



ILLUSTRATION BY ANDY POWELL

to interact with the bank's legacy applications held on its zSeries 900 mainframes running z/OS*. The PC servers brought in spanned a range of providers—including IBM, Microsoft*, Dell and Sun* Microsystems—and operating systems (OSs)—including AIX*, Windows*, Solaris and Linux.

"Banco do Brasil was always hungry for new server boxes," says Ulisses de Sousa Penna, analyst/consultant, Banco do Brasil, who estimates that the datacenter houses 500 to 600 servers. "Every day, it seemed, we needed to deploy a new server for a new service," Penna says.

Server-a-Day No More

While the bank was reliant on its sprawling set of disparate servers, it realized that it didn't want its IT environment to get any larger. So last year, in an effort to escape the server-a-day approach, it investigated, negotiated and eventually chose to bring in three zSeries 800 mainframes running Linux and z/VM*.

Like Banco do Brasil's existing UNIX and Intel boxes, the "zLinux" mainframes communicate with legacy banking applications held on the zSeries 900 servers. But the difference is the new zSeries 800 servers do the job more efficiently, allowing the bank to bring its IT environment under control while continuing to support its constantly growing user and customer bases.

Now, rather than accumulate additional physical servers, Banco do Brasil carves out server power when needed through virtualization. Its three zSeries 800 models allow the bank to create as many as 10,000 virtual servers that can serve as many as 100,000 clients.

"The attractiveness of the zSeries servers running Linux is the virtualization capabilities," says Penna. "We can create virtual servers very quickly. We just copy a few files and modify them, and we have a new 'machine'."

The zSeries 800s also allow the bank to incorporate WebSphere* Application Server (WAS), rather than purchase additional Web servers based on Microsoft IIS, Apache or other technologies. WebSphere provides a more stable platform for interacting with call-center applications, while its support of Java* 2 Platform, Enterprise

Edition (J2EE) and Web services standards paves the way for the creation of new banking applications that support Java and Eclipse.

In addition, Banco do Brasil utilizes various other IBM technologies: MQSeries* helps enable connectivity between the new and existing mainframes; IBM DB2* Connect Enterprise Edition V8.1 and IBM Content Manager OnDemand V8.2 serve as the basis for a system that's designed to improve customer service through the Internet, branch locations and ATMs by providing customer financial information through multiple channels for multiple user groups; DB2 Universal Database* (UDB) Enterprise Server Edition V8.1 is used with the bank's stock exchange system; DB2 Content Manager Server V8.2 helps make check images available to both customer and client representatives via the Internet and Banco do Brasil's intranet; and Tivoli* Storage Manager V5.1.5 manages security and disaster prevention and recovery for the new mainframe systems.

Supporting Argument

Penna adds that the acquisition and implementation of the zSeries 800 servers took about a year, as Banco



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do Brasil introduced the servers as development boxes before gradually bringing them to production.

Nonetheless, the biggest obstacle encountered during the process, he says, wasn't a technological transition, it was the need to sell management on Linux. While Linux was already present in Banco do Brasil's environment (it ran many of the bank's Web servers), management had to be convinced that the open-source OS could be supported on a larger scale. While it could be plainly noted that implementing Linux saved the bank money on OS licensing fees, IBM support personnel also stepped in to help make the case by walking the bank's IT administrators through the process of creating virtual servers and providing performance and storage analysis.

"Our managers weren't confident about Linux," says Penna. "But with the support we got from IBM, they could

see how easy it was to create the image and how much disk space could be saved."

Saving Money and Time

By implementing Linux and the zSeries server, Banco do Brasil is no longer making frequent deposits to its IT server farm. But, like its customers, the bank is saving—saving money and saving time.

"That's the great benefit of the zSeries and Linux combination—the time-to-market is reduced compared to other architectures," says Penna. "We can develop faster, and we can deploy faster."

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