Overview

SICOOB (Sistema de Cooperativas de Crédito do Brasil) is one of the leading financial institutions in Brazil. A cooperative organization with over 3 million members, SICOOB operates 15 branches across the country, with a further 529 cooperatives and more than 31,000 employees. Offering banking, credit, insurance and investment services as well as pension plans, the company reports total assets of USD 17 billion.

Challenge

SICOOB is growing its customer base at an extraordinary rate. Thanks in part to the country’s booming economy, SICOOB now has over 3 million members with high expectations of their financial services provider. With demand for online and mobile banking solutions greater than ever, SICOOB aims to deliver on-the-go, 24/7 digital banking services.

Claudio Kitayama, IT Infrastructure Analyst at SICOOB, said: “Both our customer base and our range of services were growing quickly, putting enormous pressure on our IT infrastructure.”

To ensure high availability and performance for its resource-intensive core banking applications, SICOOB relied on a distributed server landscape of more than 300 x86 processor-based servers. Demand on its systems was growing fast, and launching the new digital banking solutions was projected to further increase the requirements.

Claudio Kitayama recalled: “Our existing infrastructure was difficult to scale out cost-effectively, which was becoming an increasingly severe issue. To support our new digital banking solutions, and to accommodate larger business volumes as we win new customers, we found ourselves continually adding new physical servers. As well as adding to the complexity of managing our servers, switching on new machines dramatically increased our requirements for power and cooling.

“We can process double the number of check images per day with 40 percent fewer mainframe cores with the SUSE solution.”

CLAUDIO KITAYAMA
IT Infrastructure Analyst
SICOOB

Case Study

SICOOB at a Glance:
The largest cooperative financial services company in Brazil, SICOOB (Sistema de Cooperativas de Crédito do Brasil) offers banking and credit services to over 3 million members across the country.

- Industry and Location
  Financial Services, Brasília, Brazil

- Product and Services
  SUSE Linux Enterprise Server for System z
  SUSE Linux Enterprise Server for x86_64

- Results
  + Saves USD 2.5 million a year thanks to a huge increase in available processing power
  + Accommodates a 50 percent increase in business volumes with 40 percent fewer mainframe cores
  + Enables faster, easier system management with built-in configuration tools
This drove up our operational costs, and threatened to erode the financial benefits of business growth.

“Along with software licensing and server maintenance, the average cost of running our IT infrastructure was over USD 230,000 per month. To ensure we were able to accommodate thousands of new daily transactions from our new digital channels, we wanted to increase our compute resources in a cost-effective way.”

SICOOB’s growing data center footprint was also a threat to the company’s environmental targets. “One of SICOOB’s many social initiatives is reducing carbon emissions. For that reason, energy efficiency was a key criterion in our search for a new server platform.”

Solution
To obtain the targeted scalability, availability and manageability for its server platform, SICOOB decided to consolidate its core banking applications to IBM z Systems servers running SUSE Linux Enterprise Server for System z.

Claudio Kitayama said: “We selected IBM z Systems because it is renowned for its high availability, scalability and performance. Although we considered implementing Red Hat Enterprise Linux as our operating system, we felt that the SUSE support and development services for SUSE Linux Enterprise Server for System z were a better fit for our specific business requirements.”

SICOOB consolidated more than 300 physical x86 servers on two IBM zEnterprise 196 mainframes running SUSE Linux Enterprise Server, with an additional, geographically remote IBM System z10 server for its disaster recovery and development environments.

Today, the company operates over 600 virtual machines running SUSE Linux Enterprise Server for System z in its production environment on the z Systems hosts, with even more z Systems workloads in its development environment.

SICOOB currently runs all of its core banking, monitoring and business intelligence systems, databases, JBoss and IBM WebSphere application servers on one IBM zEnterprise EC12, one zEnterprise 196 M80 and one IBM zEnterprise 196 M49. Together, these IBM servers provide SICOOB with 5.2 TB of memory for its production environment. SICOOB’s IBM zEnterprise 196 M49 server is located at a secondary site and hosts the development environment, providing a failover option in the event of hardware failure at the company’s primary data center.

“We now manage all of our workloads and system images located on z Systems machines using SUSE Manager, which helps us to complete day-to-day management tasks such as kernel and system updates far more quickly and easily than before,” said Claudio Kitayama. “SUSE Manager gives us a 360-degree view of our entire environment, which further reduces the time we need to spend on server management.”

In addition, SICOOB takes advantage of automation from SUSE Linux Enterprise Server’s built-in configuration tools YaST® and AutoYaST. The company uses YaST to automatically configure its machines and install applications, and AutoYaST to re-image production machines when necessary.

SICOOB has been so satisfied with its SUSE solution that it recently upgraded the server platform for its checking clearance workloads from SUSE Linux Enterprise Server 10 SP3 to a current version of SUSE Linux Enterprise Server for System z, delivering greater optimization for the IBM z196 architecture for vastly improved I/O throughput and performance. With enhanced CPU node affinity support for z196 architecture, the new version of SUSE Linux Enterprise Server enables the Linux kernel scheduler to optimize its decisions based on the z196 processor topology and cache hierarchy. This results in a higher cache ratio, increasing performance and application workload density per system at SICOOB. A custom compilation flag in GCC unlocks these benefits: SICOOB simply recompiles its existing programs with GCC flag -march=z196, and the compiler ensures that the code is optimized accordingly.

“Our check clearance process now is 25 percent faster,” said Claudio Kitayama. “By migrating to the newer version of SUSE Linux Enterprise Server, we can perform check clearance using just nine virtual machines, with CPU and memory usage both at approximately 50 percent, compared to 13 servers with CPU and memory usage at 100 percent.

“In the past, we could process around one million check images a day; now we handle two million without breaking a sweat. Better still, we can process double the number of check images per day with 40 percent fewer mainframe cores with the SUSE solution. By optimizing the number of cores we use on our mainframes, we can handle increased business volumes while reducing our annual operational spend by USD 1 million.

“Support from SUSE has been excellent. The few technical challenges we have experienced have all been handled promptly and without any impact on our business.”
Results
Claudio Kitayama said: “SUSE Linux Enterprise Server for System z allows the strengths and reliability of z Systems hardware to shine through, while enabling us to obtain the benefits of an open-source server platform—an important component of our IT strategy.”

With the initial deployment of SUSE Linux Enterprise Server for System z 10 SP3 on IBM z Systems hardware, SICOOB reported saving more than USD 1.5 million a year in electricity costs alone—a reduction of 331 percent. By upgrading its operating system to the newer version of SUSE Linux Enterprise Server, SICOOB saves a further USD 1 million a year.

“By helping us to optimize our use of our IBM z System servers, SUSE Linux Enterprise Server has reduced our operational costs by a total of USD 2.5 million a year—a truly incredible saving,” said Claudio Kitayama. “The efficiency boost we have achieved with our SUSE solution has greatly reduced the company’s environmental impact—helping us to stay on track with one of our key social responsibilities.”

Based on the success of its migration to SUSE Linux Enterprise Server for System z, SICOOB is considering moving even more workloads to their IBM z Systems machines running SUSE Linux Enterprise Server to further boost system performance. “Our customers and business users are constantly asking for new services, and we are certain that our IT requirements will continue to increase as time goes on. Thanks to our SUSE solution, we have the ability to service that demand in a cost-efficient way.”

He concluded: “Our current SUSE solution provides us with outstanding levels of performance, stability and availability—giving us great peace of mind that we can offer our next-generation digital banking services 24x7.”
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IT Infrastructure Analyst
SICOOB

Contact your local SUSE Solutions Provider, or call SUSE at:

1 800 796 3700 U.S./Canada
1 801 861 4500 Worldwide

SUSE
Maxfeldstrasse 5
90409 Nuremberg
Germany