

Itaú Unibanco



EXECUTIVE SUMMARY

Challenge

Build a data center SAN infrastructure that inspires confidence and creates a flexible foundation to support massive growth

Solution

- Brocade DCX 8510-8 Backbones for open and FICON storage environments
- Brocade DCX 8510-4 Backbones for open and FICON storage environments
- Brocade 6520 Switches for open system storage environment
- Brocade Network Advisor with MAPS and Flow Vision for efficient and simple management
- Brocade Fabric Vision technology for simplifying SAN management

Results

- Reduced equipment ports and simplified future scalability through innovative Brocade UltraScale Inter-Switch Link (ISL) technology
- Achieved energy-efficient, high-performance, long-distance (400 km) replication and backup using FX8-24 over 10 GbE for mainframe as well native Fibre Channel 10 Gbps through a DWDM metro-area network
- Improved IT productivity through simplified management and automated functions

Taking on Global Expansion with a World-Class SAN

Itaú is the largest Latin American bank, with 96,000 employees and operations in 20 countries throughout the Americas, Asia, and Europe. Headquartered in São Paulo, Brazil, Itaú provides financial services for individuals, businesses, and institutional investors.

Growth and Expansion Strain the Data Center

The bank's existing data center was located near headquarters in São Paulo. Data center infrastructure supports everything from business-critical credit card capture and processing to retail systems, data warehouses, and business intelligence applications. Growth and global expansion was straining its data center infrastructure and the SAN in particular. Over time, individual SANs had been deployed to address specific business requirements. As a result, the bank now had multiple SAN "islands" that hindered scalability and made management unnecessarily complex. Not only did the bank need a larger facility and more capacity, a growing infrastructure demanded more power than was available in its São Paulo location.

"We began planning a new data center environment to support growth and help us achieve other important objectives," said Jorge Luiz Viegas Ramalho, IT Director at Itaú. "We wanted to deploy a leading-edge IT infrastructure that would deliver maximum reliability for

bank services, enable high availability for customers, and inspire shareholder and investor confidence."

Defining Foundational Requirements

Plans called for a new data center building to be built 500 km from São Paulo. The facilities would house six separate data centers with multiple SAN fabrics and all of the banking applications would be migrated to the new location. The existing São Paulo data center would become the bank's disaster recovery site.

Itaú began an extensive evaluation process to identify the best solutions for its new data center. Scalability was a critical requirement, as the bank must be able to accommodate rapid growth in a diverse range of services. The new infrastructure also needed to support an open-system SAN and a mainframe Fibre Connection (FICON) SAN in a multivendor storage environment. One significant challenge was finding a solution that enabled the bank to efficiently connect the new and existing data centers over a long distance with sufficient capacity.

WHY BROCADE

"Since 2003, we have relied on Brocade equipment in our data center. It has worked without interruption to this day. We look forward to maximizing the new Brocade capabilities we have deployed and to continuing our strong relationship."

— Jorge Luiz Viegas Ramalho,
IT Director at Itaú



Bank executives and technical teams evaluated their options carefully over two years, and they made multiple visits to vendors' Executive Briefing Centers. Brocade executives and technical teams helped the bank identify alternative data center designs, evaluate multiple options for enabling 16 Gbps SAN connectivity, and simplify connections between the data center core and edge. Based on its previous experience with Brocade® SAN switches and the close working relationships Brocade has with the bank's other partners, such as IBM, EMC, and Hitachi Data Systems, Itaú chose Brocade solutions.

Uncovering New Efficiencies

The bank had deployed a mixed environment of 60 percent of its Fibre Channel ports on Brocade SAN backbones and 40 percent on Cisco equipment. Itaú chose Brocade DCX® 8510 Backbones with Gen 5 Fibre Channel switching technology for 100 percent of its new SAN infrastructure for multiple reasons. First, the bank has had an exceptional experience with the existing Brocade infrastructure's reliability. The Brocade team also helped the bank

identify ways to significantly improve SAN efficiency and performance.

"We have had a successful partnership with Brocade and benefit from their market-leading technology," said Ramalho. "Our new Brocade SAN meets our requirements for reliability, robustness, flexibility, and ease of use."

The bank deployed Brocade DCX 8510-8 and Brocade DCX 8510-4 Backbones with Gen 5 Fibre Channel technology in its new data center. The Brocade DCX 8510 Backbones provide exceptional hardware and software reliability to consistently deliver six-nines availability. Brocade Gen 5 Fibre Channel technology unleashes the full potential of high-density server virtualization, cloud architectures, and flash storage, giving Itaú powerful 16 Gbps SAN connectivity. The Brocade DCX 8510 family supports up to 16 Gbps Fibre Channel, FICON, and 1/10 Gbps Fibre Channel over IP (FCIP), which enabled it to support the bank's Fibre Channel and FICON SANs with EMC VMAX, Hitachi VSP G1000, IBM System Storage DS8870, IBM TS7700, and Oracle StorageTek Virtual Storage Management System 6.

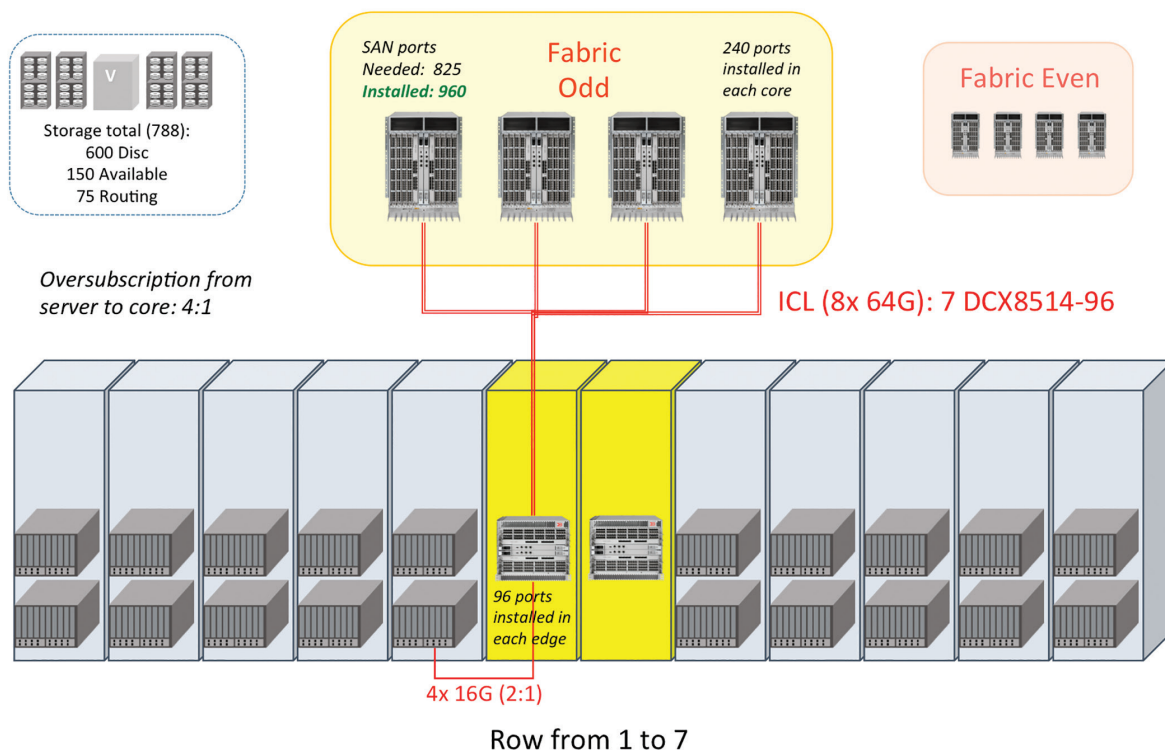


Figure 1: Itaú New Data Center SAN.

High cabling costs associated with the other vendor's switches were reduced through the use of Brocade UltraScale chassis connectivity in the Brocade DCX 8510. Using optical Inter-Switch Links (ISLs), the bank can connect up to eight 16 Gbps ports per ISL trunk to create a 128 Gbps per ISL trunk to optimize link usage by evenly distributing traffic and significantly reduce congestion. Brocade ISLs dramatically reduce cabling, space, and complexity while enabling massive infrastructure scalability. The Brocade solution simplified the number of connections between devices, which reduced the cost of the overall solution.

Overcoming the distance between data centers for backup and replication was simpler with the Brocade DCX 8510 Backbones because they provide native 16 Gbps Fibre Channel transport over metro or WAN links. The competitor's Fiber Channel over Ethernet (FCoE)

solution required a larger data center footprint and cost more because of the high number of connections required.

Itaú also implemented Brocade Fabric Vision™ technology, which maximizes uptime, optimizes application performance, and simplifies SAN management through innovative diagnostic, monitoring, and management technology. Brocade Network Advisor's Monitoring and Alerting Policy Suite (MAPS) offers an easy-to-use solution for policy-based monitoring, alerting, and customizable health and performance dashboards, allowing the technical team to configure one or more fabrics at once with common rules and policies or customize policies as needed. Brocade Fabric Vision technology integrates with Brocade Network Advisor and helps the bank pinpoint problems faster and simplify SAN configuration and management.

"The Brocade solution proved to be the best approach because it uses less equipment and also offers better performance and scalability," said Ramalho. "It also offers a much simpler interface."

Confidence in the Future

The bank's 13-year relationship with Brocade and Brocade DCX Backbones has resulted in a high level of trust in the SAN infrastructure. That same level of confidence inspires stakeholders' and investors' trust in the bank, assuring them that the bank operates on a world-class, reliable network.

Increased Staff Productivity

Great SAN efficiency reduces the management burden on the bank's IT team. The total number of ports is smaller and each port is more efficient, which saves time. Features such as Brocade Flow Vision and MAPS identify



and analyze specific application flows, providing an easy solution for proactive monitoring and alerting.

"Simpler administration allowed us to automate a number of tasks," said Ramalho. "Automation simplifies deployment and management even further. Today, we can have smaller teams manage a large portion of the infrastructure."

Savings All Around

Brocade Gen 5 Fibre Channel technology features allowed bank to reduce the number of devices deployed, as well as cabling. The Brocade solutions require less space and less power but offer massive scalability for future demands. The bank estimates that lower power requirements of the Brocade equipment enabled them to reduce energy costs.

What's Next?

The bank's technical team is evaluating the use of in-flight compression and encryption features that are part of the Brocade DCX 8510 Backbones' ISL capabilities. These features improve data transfer efficiency by preserving bandwidth and enhance data security between sites.

"Since 2003, we have relied on Brocade equipment in our data center," said Ramalho. "It has worked without interruption to this day. We look forward to maximizing the new Brocade capabilities we have deployed and to continuing our strong relationship."

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