

# SIEMENS

**Microsoft Exchange 2003 on EMC Clariion CX700:  
A Case Study in the Innovative Enterprise**

## A Leader in the Innovative Enterprise

At Siemens, innovation has been a centerpiece of its tradition for more than 150 years. Since it was founded in 1847, Siemens has been a global innovator and market leader in Telecommunications, Electronics and Healthcare. Today with global annual revenues of \$ US 90 billion and over 450,000 employees worldwide, this tradition for innovation is still evident.

In order to remain innovative, Siemens Business Services introduced a global strategic initiative called **Any4 Vision**: communication to **Any** one, **Any** time, **Any** place on **Any** device. This initiative envisioned the creation of a global messaging infrastructure that would allow any Siemens' employee access to communicate at the speed of business around the world.

In keeping with Siemens' long-standing **Think Globally, Act Locally** philosophy, Any4 Vision was conceived as a regionally-scaled effort at 4 appointed locations around the globe. In Latin America, the initiative was named **Project Babylon**.

When Siemens Brazil installed the first marine telegraph cable linking Rio de Janeiro to Montevideo in 1872, they were also laying the groundwork for future generations to conceive and implement next-generation communication technology.

It was clear that Antonio Lima, Sr. Technology Planner of Siemens Brazil, understood the founders' vision when he set out to develop **Project Babylon**.

The design goals of Project Babylon were set against four central initiatives: **Storage Consolidation, Performance Scalability, High-Availability, Business Continuity & Data Protection**.

## Solution Profile:

Microsoft Windows 2003  
Microsoft Exchange 2003  
Microsoft Majority Node Set Cluster  
Microsoft Active Directory  
Microsoft Volume Shadow Copy Services (VSS)  
EMC<sup>2</sup>Clariion CX700  
EMC<sup>2</sup> Snap Clone/Snap Shot  
EMC<sup>2</sup> Snap View Replication Manager/SE (RM/SE)  
EMC<sup>2</sup>MetaLUN Architecture

## Customer Perspective:

*“Given the strategic importance and visibility of this global initiative, we chose Royer Systems Integration, as the solution provider... ..on the delivery of this solution. “*

*Antonio Lima, Siemens  
Sr. Technology Planner*

### **The Challenge, The Opportunity**

With 16,600 employees spanning 16 countries, the messaging infrastructure was highly decentralized. In this fractured state, the Exchange versions of the messaging environments were inconsistent causing discrepancies in the service levels across the enterprise-wide organization.

#### **Challenges**

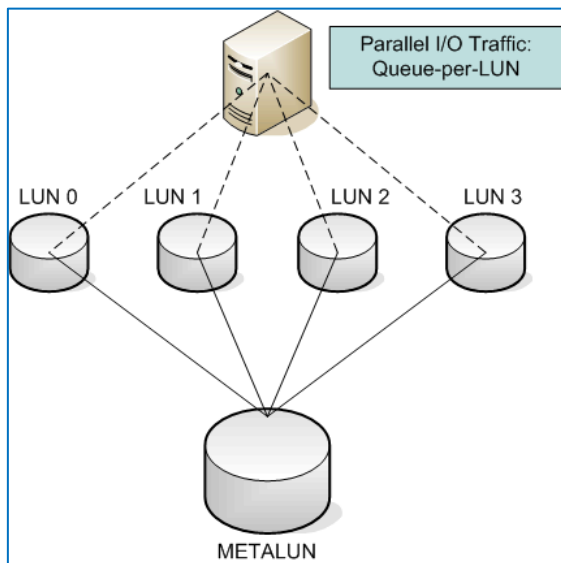
- **Fractured Site Topology**
- **Lack of Version Control**
- **Lack of Change Management**
- **System/Application Build Inconsistencies**
- **Administrative Redundancy/Inconsistency**
- **High Unplanned Downtime**

#### **Opportunities**

- **Storage consolidation and capacity optimization**
- **Reduce complexity of data management**
- **Business Continuity/Disaster Recovery Plan**
- **Lower TCO through centralized management and reduced unplanned support and disaster recovery efforts**
- **Enhance server, application and network performance**

## Performance:

Using the elegant MetaLUN architecture of the Clariion, Siemens was able to extend the I/O subsystem across traditional RAID disk boundaries. The striping effect of the MetaLUN balanced read/write intensive workload across the quad-bus topology of the CX700 back-end I/O channels:



The result of this increased read/write performance translated into faster and more responsive communication between organizations within Siemens Latin America. “In the past, people experienced delays when sending or receiving e-mails with large attachments as performance could be too slow.” says Lima. “Today people have the peace of mind and confidence of knowing e-mails will be received across the organization in a reliable and timely manner. This has meant more efficient coordination of projects and closed deals.”

## Consolidation: A Message of Unification

One of the central goals behind the project was to consolidate the decentralized user base across Siemens’ operations presence in 16 countries in Latin America. Early on in the project, it was decided to provision a 200MB mailbox to each of the 16,600 users in the organization to optimize end-user productivity. The outcome of this decision resulted in 24TB of raw storage capacity allocated within the EMC CX700 array in a highly optimized RAID 10 architecture.

## Business Continuity & Data Protection

Siemens Latin America is a 24/7 worldwide operations which cannot tolerate any downtime or data loss. At Siemens Latin America, the cost of downtime per minute and lost data can be measured in the hundreds of thousands of dollars. “There was a complex internal sales and negotiation process that was presented to the various business units within the Latin American organization. The need to protect sensitive and valuable data ranked as one of the most pressing concerns and priorities.”

Using the powerful combination of EMC’s Replication Manager/Scheduler for Exchange with Microsoft’s Volume Shadow Copy Services, the Siemens team were able to schedule the creation of Business Continuity Volumes (BCV) using VSS to create point-in-time copies of data from the source LUN’s.

According to Lima, “With EMC SnapShot technology and the Replication Manager/SE integrated module, we had the ability to simplify the complex process of acquiescing all of the I/O activity to the Exchange stores to a consistent state where we could offload our Exchange servers and meet our backup

windows as we could schedule backups to take place in fixed intervals during production hours.”

### **High-Availability**

With 16,600 users distributed across multiple geographies and time zones, the importance of 100% uptime is underscored. SBS selected Microsoft’s Majority Node Set cluster to leverage the multi-node active/passive architecture. Using a 4A/2P configuration, an Exchange Virtual Server environment could be created with 3000 users distributed across each of the active node.

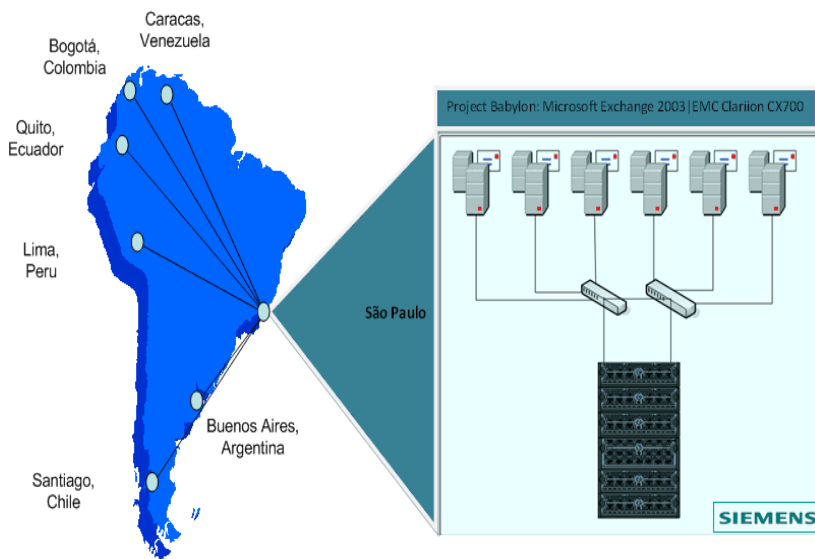
## Project Babylon: Pre-Consolidation State

- Consolidation of 16,500 Exchange mailbox users throughout Latin America
- EMC CX700 Platform
- 40 TB allocated MS Exchange 2003 Cluster
- Large-scale Active Directory Migration
- MS Majority-Node Cluster Architecture
- 299 LUN's, 64 MetaLUN's and 128 RAID Groups
- Backup-to-Disk solution using SnapView technology
- Replication Manager/SE with Exchange 2003
- Prototype Showcase for Global Solution Blueprint



## Project Babylon: Post-Consolidation State

- Consolidation of 16,500 Exchange mailbox users throughout Latin America
- EMC CX700 Platform
- 40 TB allocated MS Exchange 2003 Cluster
- Large-scale Active Directory Migration
- MS Majority-Node Cluster Architecture
- 299 LUN's, 64 MetaLUN's and 128 RAID Groups
- Backup-to-Disk solution using SnapView technology
- SIME Integration with Exchange 2003
- Prototype Showcase for Global Solution Blueprint



## Conclusion

Siemens Business Services is a forward-thinking organization that has used innovative technology as a way to solve unique business challenges and has built a platform to enhance enterprise-wide productivity. Using an innovative approach that incorporated the use of next-generation technology, Siemens has made the Any4 Vision concept a reality.

