Tralix Delivers High SLAs and Extreme Performance with MySQL

Database: MySQL Embedded
OS: Debian Linux
Hardware: HP purpose-built appliance, Intel processor
Language: Java 1.6

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Roberto Bargagli, CIO
Tralix

Tralix Overview

Tralix Corporation started business in 2001 as an interactive e-mail marketing company and has since grown to be the e-marketing market-share leader in Mexico. Tralix's e-marketing success is based largely on its ability to micro-segment and intelligently target customers with varying calls to actions determined by users' responses. In 2005, Tralix leveraged the architecture behind its interactive marketing service to create one of the first and most complete e-invoicing solutions for the rapidly expanding Mexican e-invoicing market where Tralix now has a commanding lead. Tralix's solutions are comprehensive and flexible enough to meet the needs of customers who range from some of the largest companies in Mexico, such as Citigroup Banamex, Televisa, Telmex, and Google Mexico, to some of the smallest, sole-proprietor shops.

Business Opportunities and Challenges

Invoicing in Mexico

In an effort to deter tax evasion, the Mexican government has issued a series of strict and complex invoicing regulations. Initially, all invoices had to use what became known as "sacred paper" -- unique, traceable forms available only from government-authorized businesses. Invoicing records had to be physically archived and stored for at least five and up to ten years. This was a daunting task for large businesses that generate hundreds of thousands of invoices each month. In 2005, Mexico introduced new -- and very welcome -- regulations that would allow electronic invoices to be used as an alternative to the "sacred paper." One of Tralix's customers, a very large cable company, asked if Tralix could create an e-invoicing solution capable of batch processing its 600,000 monthly invoices in under four hours. With MySQL as the database in all of Tralix's e-invoicing products the answer was "yes". And, unlike other e-invoicing providers, Tralix offered a complete e-invoicing solution capable of generating, validating, archiving, storing, retrieving, and receiving invoices. It could even connect and work in conjunction with any ERP system.

E-Invoicing Made Mandatory

In January 2011, a new Mexican law will come into effect mandating that invoices over MXN 2000 (~USD160) are electronic. There are 3.5 million businesses in Mexico with tax ID numbers and approximately 35,000 of those, or just 1%, currently use electronic invoices. As the e-invoicing market leader, Tralix was well positioned to benefit handsomely, but only if they could scale their business operations and product capabilities in less than seven months to meet the meteoric rise in demand. Tralix determined this was possible if they had:
1. Business partners; 2. An appliance-based version of their product to meet both the security and scalability demands of larger organizations; and 3. The ability to deliver extremely high SLAs (service level agreements).

In June 2010, Tralix announced partnerships with HP and Intel to create and distribute the new XML Signature Appliance, "XSA by Tralix-HP", and with Ingram Micro to scale its sales operations. Tralix next focused on the appliance and its database: "We have offer high SLAs because our customers' income depends entirely on their ability to process their invoices," said Roberto Bargagli, Tralix CIO. "We had to ensure that the XSA database could provide the performance, scalability, stability, and reliability necessary to deliver those SLAs from within a zero-admin appliance."

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The MySQL Solution

Selecting MySQL

Roberto and his team decided to evaluate both MySQL and PostgreSQL, two databases they were already familiar with. From the beginning, they had successfully used MySQL in all of their products and knew it could perform. They had used PostgreSQL for some internal installations and wanted points of comparison with MySQL as a product database.
"We soon realized that PostgreSQL had limited HA capabilities. Clustering and replication were difficult with PostgreSQL – they just weren't well supported while the opposite was true for MySQL. And, PostgreSQL couldn't match MySQL's performance," said Roberto.

For the evaluation team it soon became a "no brainer" decision for Tralix to use MySQL for XSA and all of Tralix's products. They also decided to deprecate support for PostgreSQL: "We didn't want to use a database that doesn't have clear HA capabilities or is not fast enough for our customers," said Roberto.

MySQL Technical Benefits

Easy Replication for HA

As an invoicing solution, XSA must be highly available. Using a pair or XSA appliances and MySQL's replication, Tralix created a master-and-slave architecture with near instantaneous failover. "We know all of our customers will want a redundant system over time. With MySQL's replication, it's easy for them and for us. And even with extremely high transaction volumes we have never had any problems, MySQL continues to replicate in real time," said Roberto.

Easy to Develop

Tralix developers found MySQL easy to use for three reasons: They were already familiar with MySQL; they liked the fact that MySQL is not a 'black box', that the InnoDB engine is open, flexible and robust; and, they have been able to get able to get answers to every one of their questions through MySQL's extensive community and collection of on-line documentation.

Performance and Scalability

Tralix knew from experience that MySQL could perform and scale. For XSA, they especially valued the ability to fine-tune the InnoDB engine to meet the varying requirements of their products. "This is one of MySQL's biggest advantages: if you know how to tune your engine, MySQL is phenomenal," said Roberto.

Easy Administration

Tralix needed to deliver a plug-and-play product. They didn't want to ship tools or require that their customers do anything more than the most basic maintenance. With MySQL, they can.

High Quality

"The MySQL InnoDB storage engine is clean and robust; MySQL is simply one of the best databases around," said Roberto.

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MySQL Business Benefits

SLAs Met

"With MySQL, XSA can meet our large customers' business-critical requirements to close paid invoices and issue new invoices in huge batches within just a few hours. And, we can keep our service level agreements, which is absolutely essential for our business," said Roberto.

Faster Time to Market

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Better TCO with MySQL

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Tralix's and Customers' Needs Met

Summing up Tralix's experience with MySQL, Roberto said:, "From the beginning, we have successfully used MySQL in all of Tralix's products, including in a hosted e-invoicing installation for a customer with over five terabytes of data, housed in 118 tables, each with 120 million records. The same customer now has all of that data in our e-invoicing appliance's MySQL database, and still can easily batch process over 600,000 monthly invoices in less than four hours. We have confirmed that MySQL is stable, with high performance and reliability, and the ability to handle large amounts of information with great response time."

MySQL Database for OEMs, ISVs, and VARs

MySQL Server is a full-featured, easy to use database that over 2000 ISVs, OEMs, and VARs rely on to make their products more competitive, bring them to market faster, and lower their COGs (cost of goods sold).

These ISV and OEM customers choose to use MySQL as an embedded database for its:

- **Low-Cost,** up to 90% less than Microsoft SQL Server with features that ensure COGS remain low throughout an application's life cycle. Lower database costs allow vendors to offer their products at a fraction of the cost of competing solutions and the flexibility to appeal to more price-sensitive customers.
- **Cross Platform Flexibility** with support for over 20 platforms providing the freedom to ship products on multiple hardware and operating system combinations and into more markets.
- **High Performance, Reliability and Scalability** to meet the requirements of the most demanding applications, such as Telco and Network management, 24x7. Including a full-featured RDBMS helps to make products more competitive initially and over time as customers' data needs inevitably increase.
- **Ease-of-Use** with fast installation, configuration and integration so developers can focus on application development, reducing costs and time to market.
- **Zero-Administration**, eliminating the need for customers to hire a dedicated DBA or spend any cycles on database administration, and reducing or eliminating costly database-related support calls.

MySQL Database is Ideally Suited for:

Software Applications

- Network & Performance Management
- Monitoring Systems
- Educational Software
- Email, Anti-spam software
- Telecommunications & VoIP
- Healthcare & Practice Management
- Biotech

Hardware Appliances

- Networking Equipment
- Routers & Traffic Controllers
- Security Appliances
- Retail Kiosks
- Point-of-Sale (POS) Systems
- Diagnostic Instruments
- Sensory Devices
- And more...

About MySQL

MySQL is the world's most popular open source database software, with over 100 million copies of its software downloaded or distributed throughout its history. With its superior speed, reliability, and ease of use, MySQL has become the preferred choice for Web, Web 2.0, SaaS, ISV, Telecom companies and forward-thinking corporate IT Managers because it eliminates the major problems associated with downtime, maintenance and administration for modern applications.

Many of the world's largest and fastest-growing organizations use MySQL to save time and money powering their high-volume Web sites, critical business systems, and packaged software, including industry leaders such as Adobe, Alcatel-Lucent, Facebook, Google, Nokia, Symantec, Twitter, and YouTube.

- Learn more about MySQL at: www.mysql.com
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