



SPEECH DESIGN Delivers Next Generation Call Completion Services with MySQL Cluster



Telecommunications

OS: Redhat Enterprise Linux

Hardware: HP Proliant Servers

Database: MySQL Cluster
Carrier Grade Edition

“MySQL Cluster delivers carrier-grade levels of availability and performance with linear scalability on commodity hardware. It is a fraction of the cost of proprietary alternatives, allowing us to compete aggressively, and enabling operators to maximize their ARPU”

Jan Martens

Managing Director,
SPEECH DESIGN Carrier Systems GmbH



SPEECH DESIGN Overview

SPEECH DESIGN is a leading European provider of messaging and mobility solutions for the corporate and carrier markets. More than 130,000 companies and millions of individual users benefit daily from SPEECH DESIGN's added-value communications solutions delivered by their partners: Europe's premier suppliers of enterprise and public networks. SPEECH DESIGN was founded in 1982 and is headquartered in Germany.

The Business Challenge

Communications Service Providers (CSPs) are continually seeking innovative approaches to deliver revenue-generating “Value-Added Services” that can be layered above conventional wireless voice access. In addition to improving ARPU (Average Revenue Per User), these services can also become as indispensable as the voice access they support, and as a result, can reduce customer churn while providing the environment to up-sell additional Value-Added Services in the future.

It is generally recognized that around 40% of all calls placed over wireless networks are not connected directly to the receiving party. The recipient may be on another call, they may have their wireless device turned off, or they may be in an area of poor network coverage. Despite voice mail, the impact of delayed communications still causes frustration to the caller and recipient, and in a commercial context, potentially reduces staff productivity and impacts customer satisfaction. For network operators, each call that fails to be connected represents a potential loss in revenue from their voice service.

Recognizing these challenges, SPEECH DESIGN has developed the innovative Thor Application Platform. Layered on top of OpenCall Media Platform, HP's media gateway solution, the Thor Application Platform offers Call Completion with its Revoco solution and Next-Generation Messaging services. Collectively these services enable operators to maximize revenues from their wireless networks.

The Call Completion solution is designed to send SMS (Short Message Service) messages to users who have either missed a call from another party, or who have voice mail waiting in their inbox. With the “Call Back after Busy” feature, the party that placed the call can decide to be automatically contacted by the application when the called party becomes available again, or the called party will receive an SMS containing a “call back request”. This solution is designed to accelerate user communications, as well as recover lost revenue for the operator. It can also reduce network load as the need for users to retrieve messages via IVR (Integrated Voice Response) is mitigated.

MySQL Cluster Carrier Grade Edition Delivers Key Value-Added Services

The solution also provides a “visual mailbox” to a user’s voice mail, directly accessed on any MMS (Multi-Media Messaging Service) capable wireless device or IMAP client. The client’s user interface enables a user to view voice mail messages in much the same way as they view email messages in their in-box. They can browse all of their messages before prioritizing which to listen to first and easily replay messages, without having to navigate complex IVR menus. This solution is designed to enhance subscriber productivity, and is increasingly regarded as an essential tool to manage the information overload most users face everyday!

As a result of its innovative capabilities, the Thor Application Platform has attracted major attention from the largest wireless operators across the EMEA (Europe, Middle East and Africa) region, with a number of live deployments and Proof-of-Concepts in progress.

User adoption of these types of services is always dependent on a number of factors – first and foremost is the “valued added” capabilities they deliver to the end-user. In addition, the service has to be priced at a level that represents great customer value, but which also maximizes ARPU and margin for the operator. The service also has to exhibit the same carrier-grade levels of reliability, performance and scalability that operators and their subscribers demand of any service deployed onto the network.

As a result of these factors, CSPs must carefully select partners, such as SPEECH DESIGN, who can deliver compelling applications at the lowest possible cost point, while delivering proven, carrier-grade capabilities.

The MySQL Solution

The database layer is a key component of SPEECH DESIGN’s product suite.

A proprietary database had previously been used as the standard database component in earlier applications. However, for their new projects, SPEECH DESIGN began an evaluation of alternative database solutions.

SPEECH DESIGN & MySQL Cluster Solution Overview

- Value-Added Services for the Telecommunications industry
- Call Completion & Next Generation Messaging Services
- Replaced proprietary database with MySQL Cluster Carrier Grade Edition
- Improved developer productivity to accelerate time to market
- Decreased COGS due to reduction in database licensing costs
- Achieved 99.999% carrier-grade availability with millisecond response times
- Dynamic scalability to handle massive subscriber growth
- Geo-Replication to provide redundancy across multiple sites

The evaluation of alternative solutions concluded in SPEECH DESIGN’S selection of MySQL Cluster Carrier Grade Edition, the industry’s leading open-source, high availability real time database. SPEECH DESIGN’s development team were able to freely download MySQL Cluster Carrier Grade Edition to conduct their evaluations and start development, without the usual restrictions imposed by proprietary software.

SPEECH DESIGN is using MySQL Cluster Carrier Grade Edition as a key component of the THOR application platform. The MySQL database is responsible for core functions and services of the THOR Call Completion and Next Generation Messaging System. With the carrier grade availability and high throughput architecture, it ensures time-critical operations for message-transactions and notification events. The database also stores global service configurations and messaging rule sets, as well as logging all user activity via CDRs (Call Detail Records). These CDRs allow accurate billing, revenue assurance and network/service statistics via the operators OSS/BSS (Operations Support Systems / Business Support Systems) infrastructure.

As a result of their selection of MySQL Cluster Carrier Grade Edition, SPEECH DESIGN is taking advantage of a number of benefits offered by MySQL's high availability database:

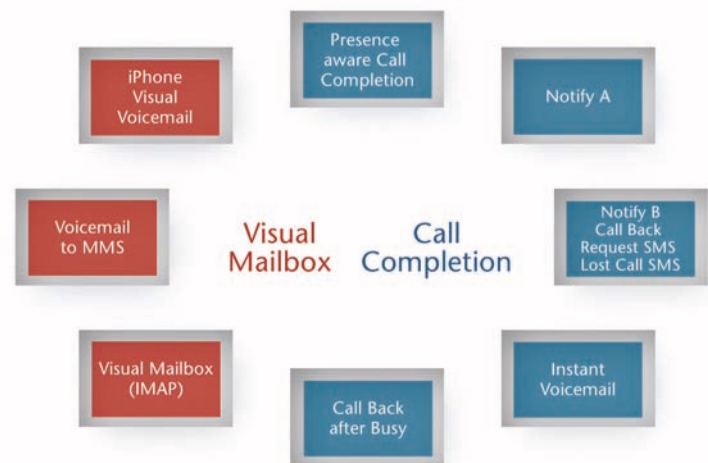
- **Reduced COGS and improved profitability** by standardizing on a cost-effective database
- **Platform flexibility**, with support for Red Hat Enterprise Linux, one of the standard operating systems used by operators in their core network infrastructure, further enhancing the attractiveness of their solution to the telecommunications industry.
- **Linear scalability** with automatic load-balancing and data partitioning across nodes within the cluster enabling SPEECH DESIGN to offer the scalability demanded by operators as service adoption grows, and to dynamically scale according to demand, without huge up-front investment in large SMP servers.
- **Carrier grade availability** with COTS (Common off The Shelf) systems. The shared-nothing architecture of MySQL Cluster, coupled with automatic synchronous replication of all data allows the SPEECH DESIGN application to achieve carrier-grade levels of uptime with 99.999% database availability. No special hardware such as shared storage, Fiber Channel or SAN arrays are required, further reducing the cost of the solution to both SPEECH DESIGN and to its customers.
- **Sub-second failover and self healing capabilities** of MySQL Cluster Carrier Grade Edition further ensure overall system reliability in the event of system failures.

“MySQL Cluster Carrier Grade Edition is a critical component of our application. As a result, it is vital that it delivers both the carrier grade availability and carrier grade performance demanded by our customers”

Jan Martens

Managing Director,
SPEECH DESIGN Carrier Systems GmbH

Revoco



All of these capabilities are standard features of MySQL Cluster Carrier Grade Edition, allowing SPEECH DESIGN's developers to concentrate on application development, without having to concern themselves with low-level mechanisms for availability, scalability or performance of the database. This has resulted in lower development costs, less application complexity and faster time to market. Following their initial evaluation of MySQL Cluster Carrier Grade Edition, SPEECH DESIGN contracted MySQL to deliver additional Professional Services consulting and training, enabling their development teams to further explore and use the rich feature set offered by the database.

One of the outcomes of these services was the adoption of the Geo-Graphical Replication feature of MySQL Cluster Carrier Grade Edition, which provides the ability of the database service to withstand site failures by replicating clusters across multiple remote locations. This capability has allowed SPEECH DESIGN to further enhance their own product offering.

The Future with MySQL

As a result of their successful experience with MySQL, SPEECH DESIGN have mandated the use of MySQL Cluster Carrier Grade Edition in all future projects. SPEECH DESIGN are also in the process of joining MySQL's partner program, allowing them greater access to MySQL's development and engineering teams, which in turn further accelerates the delivery of new SPEECH DESIGN applications to market, with even higher quality and customer satisfaction

MySQL Cluster

The Leading Open Source, High Availability Database for Real-Time, Mission Critical Applications

MySQL Cluster is the industry's only true real-time database that combines the flexibility of a high availability relational database with the low TCO of open source.

Carrier Grade Availability

MySQL Cluster features a "shared-nothing" distributed architecture with no single point of failure to assure 99.999% availability, allowing you to meet your most demanding mission-critical application requirements.

High Throughput and Low Latency

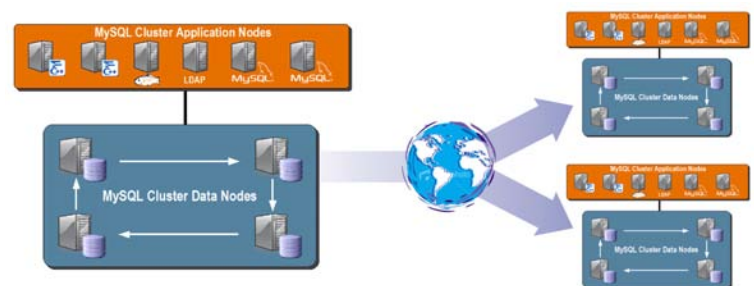
MySQL Cluster's real time design delivers consistent, millisecond response times with the ability to service tens of thousands of transactions per second.

Linear Scalability

Support for disk-based data allows almost unlimited database scalability. Automatically load-balancing and partitioning of data across nodes within the cluster enables users to dynamically scale according to demand, without huge up-front investment in large SMP servers.

MySQL Cluster Target Applications:

- AAA / Radius / Diameter Servers
- Broadband Access
- Hosting Services
- Identity Management
- IMS Application Services
- Intelligent Network Nodes
- IPTV
- Look to Book Systems
- On-Line Gaming
- Payment Processing and Validation
- Pre-Payment Systems
- SDP Service Execution Environments
- Session Management
- Softswitches
- Subscriber Databases (HLR / HSS)
- Value Added Services
- VoIP Systems
- Wireless Access Services



The MySQL Cluster architecture has been designed for 99.999% availability

About MySQL

MySQL is the most popular open source database software in the world. 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. At www.mysql.com, Sun provides corporate users with commercial subscriptions and services, and actively supports the large MySQL open source developer community.

For more information, go to www.mysql.com/cluster

To learn more about MySQL in the Telecommunications industry, go to www.mysql.com/communications



The World's Most Popular Open Source Database