MySQL Delivers 50% Lower Database Costs as NetHawk Develops Network Monitoring Solutions to Improve Subscriber Experience

Telecommunications

OS: Microsoft Windows Server 2003

Hardware: Dell PowerEdge 2900 Servers

Database: MySQL Embedded Server Advanced 5.1

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Markus Weiland
Product Manager for Network Monitoring Systems, NetHawk

NetHawk Overview

With a mission to enhance the quality and user experience of converged communication networks, NetHawk provides state-of-the-art software-based network testing and monitoring tools and services for telecoms and VoIP equipment manufacturers and operators. Based in Finland, with nearly two decades of industry experience, NetHawk's products and services are used by hundreds of customers to ensure the highest levels of network subscriber experience.

The Business Challenge

The communications industry is a highly competitive market with incumbent operators now finding themselves competing against virtual operators, and increasingly "Over the Top" players from the world of the internet.

Ensuring the highest level of customer experience is a key differentiator for communications companies as it drives customer acquisition, and reduces customer churn. Price is also a key differentiator, and so operator costs must be reduced wherever possible to support higher levels of margin on both network access and value-added communications services. The ultimate goal for any operator is therefore to deliver the highest possible customer experience at the lowest possible cost.

Any communications experience starts with the network over which traffic – whether voice, data or multi-media – is carried. If the network is unreliable, so the customer experience suffers, and the operator loses revenue through the inability to deliver services, and ultimately through customer defections.

To minimize network risks, many operators are investing in increasingly advanced network monitoring tools to provide operational status of all of their networks, including performance and Quality of Service (QoS) data, expressed through Key Performance Indicators (KPIs). Raw data is collected via probes in the network and stored in databases along with the KPIs, which are then accessed via client applications in the Operations & Maintenance Center (O&MC) of the operator. The clients are responsible for analysis of the data, enabling them to efficiently and pro-actively trouble-shoot any issues that could impact subscriber QoS. The data also allows for the trend analysis of network performance, allowing for accurate capacity planning and network build out.

The MySQL Solution

Data is at the heart of any network monitoring solution, and so databases are needed to provide a range of critical capabilities for both the efficient storage and retrieval of network data. To diagnose network issues in real-time, NetHawk needed their database to deliver the highest levels of availability and throughput with the lowest response times, be massively scalable to handle ever increasing network traffic and subscriber volumes, and be flexible so that it could be structured to store and retrieve data over varying periods of time (ie one hour, day, week or month) for trend analysis by the operators.

As with any database solution, time to market is critical, and on-going management must be efficient. As a result, the database needed to provide flexible tools for development, debugging and database administration.

In addition, to address overall cost of the solution, NetHawk had to ensure database license and maintenance costs must be kept to a minimum, and the database had to run on commodity hardware.

As NetHawk began to develop its new network monitoring tools, they evaluated a range of potential database solutions. Their development team was able to easily download and install the community edition of MySQL. They received good technical support from the extensive range of forums and internet mailing lists dedicated to MySQL, enabling them to rapidly build prototypes of their network monitoring application.

"NetHawk evaluated proprietary database products, but found MySQL delivered higher levels of performance at 50% lower cost, while meeting our stringent requirements for 24x7 availability and scalability" said Markus Weiland, Product Manager for Network Monitoring Systems at NetHawk.

As a result of their evaluations, NetHawk purchased OEM licenses for MySQL Embedded Server Advanced. MySQL Embedded Server has over 2,000 ISV and OEM customers, many of them large, global telecommunications vendors with millions of subscribers. That fact, coupled with MySQL's excellent performance against NetHawk's internal tests gave NetHawk the confidence to rely on MySQL Embedded Server as part of their flagship product. By purchasing licenses, NetHawk had the flexibility to embed and ship MySQL as part of their commercial network monitoring system.

"MySQL handles 20,000 write operations per second from the NetHawk network monitoring system and generates up to 8 Tera-Bytes (TB) of data comprising 10-20 billion rows per month, all accessed by multiple client systems in the O&MC," said Markus. "MySQL Embedded Server's efficient partitioning of tables and indexes has enabled our product to better manage and perform with those massive data sets."

NetHawk and MySQL Embedded Server Solution Overview

- Real-time network monitoring solution to ensure Quality of Service
- Selected MySQL Embedded Server after extensive evaluation, including proprietary databases
- MySQL handles 20,000 write operations per second and 20 billion row of new data per month
- Simple download and installation, coupled with extensive on-line resources allowed fast time to market of new solution
- MySQL Enterprise Monitor and Query Analyzer enhances DBA productivity
- MySQL delivers higher performance at 50% lower costs than proprietary databases

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NetHawk also make extensive use of the MySQL Enterprise Monitor and Query Analyzer to reduce Database Administrator (DBA) and developer effort in managing the database and optimizing queries.

The Future with MySQL

NetHawk intends to continue the rapid enhancement of its network monitoring solution by serving large subscriber networks. NetHawk also wants to develop products on Linux to complement its current Windows-based offering, and as the "M" in the LAMP (Linux, Apache, MySQL, Perl / Python / PHP), MySQL will be the database of choice for all new developments.

MySQL Embedded Server for OEMs, ISVs, and VARs

MySQL Embedded Server is a full-featured, zero administration database that enables ISVs and OEMs to bring their applications and solutions to market faster. MySQL's small footprint, zero administration and support for 20+ platforms gives ISVs and OEMs ultimate flexibility to ship a highly reliable SQL-compliant, transactional database with just about any software application or hardware appliance.

MySQL Embedded Server enables OEM/ISV/VARs to:

- **Reduce COGS and improve profitability** by embedding a cost-effective database without artificial license restrictions on CPU, memory, and servers

- **Bring applications to market faster** by embedding a proven database rather than building and maintaining a proprietary database in-house

- **Deliver a differentiated solution** that can capture, store and report on data with speed and granularity by embedding a full-featured, relational database

- **Win competitive comparisons** using a SQL-compliant, relational database with superior performance and reliability

- **Deliver a zero-administration solution** so that their customers don't have to hire dedicated DBA resources

- **Make reporting and analysis easy** using a cost-effective open source reporting solution like Jasper for MySQL: OEM Edition.

MySQL Embedded Server is Ideally Suited for:

Software Applications

- Network & Performance Management
- Monitoring Systems
- CRM & ERP
- Educational Software
- Email, Anti-Spam Software
- VoIP & Online Messaging
- 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. Many of the world's largest and fastest-growing organizations use MySQL to save time and money powering their high-volume Web sites, business-critical systems and packaged software – including industry leaders such as Yahoo!, Google, Alcatel-Lucent, YouTube and Zappos.com.

For more information about MySQL Embedded Server, please go to **www.mysql.com/oem**

To contact MySQL online or via telephone, please go to **www.mysql.com/contact**

The World's Most Popular Open Source Database