Deal Group Media *scales out online advertising with MySQL*

As broadband penetration and consumer online spending continue to rise rapidly, so does affiliate marketing as an essential channel for driving customer acquisition. In an affiliate marketing scenario, advertisers seek affiliates among the most trafficked websites, place banner advertisements and pay for click-throughs or closed sales arriving from this channel. Major advertisers have come to see affiliates as an extension of their own sales force, referring potential customers to their sites and building revenue from increased sales. In the United Kingdom, sales from affiliate network channels rose 100% between 2004 and 2005, a trend that continued during 2006.

Deal Group Media (DGM) started out in 1999 as the UK's first affiliate network provider, connecting advertisers to affiliates for mutual benefit. DGM specializes in helping customers define and deliver an optimal solution to help fulfill e-business objectives – whether those objectives consist of additional sales or leads, increased traffic, brand awareness, additional revenue, or an increase in return on investment (ROI). To meet the rapid growth of affiliate marketing, DGM has designed a banner delivery and tracking system for repeated scaling without compromising ultra-fast response times and high availability. DGM now also operates in South Africa, Australia and Spain.

"MySQL gave us simplicity, scalability and reliability. It certainly provided a more stable enterprise solution than its more illustrious and expensive peers."

Carl Davis
Chief Technical Officer, DGM

DEAL GROUP MEDIA

MySQL

Banners by the Billion

Initially DGM deployed a solution for serving banners using a central database. As the numbers of impressions and banners increased, stability of the existing system suffered and it was clear that a new system with better failover was needed. The goal was to develop a highly transactional, world class application to support billions of banner impressions, clicks, sales and redirects. Since failure to deliver would immediately affect revenue for customers and suppliers alike, high availability is a must and downtime is not an option. System specifications also addressed scalability for future expansion using cost-effective web serving and the ability to localize banner delivery for different regions. DGM wanted to move to a local database on each web server so there would be no single point of failure.

Deal Group Media already had in-house knowledge of MySQL and wanted to use MySQL for their delivery database on their existing Linux platform. MySQL met all the requirements for this task: small footprint, stored procedures, and ease of use. For DGM it made sense to try a LAMP (Linux-Apache-MySQL-PHP/Perl) solution for its tracking and serving application dgmPro™. Migration from the existing system was pretty straightforward. Data was exported to a CSV file, and after some transformation (like change of date time fields, removing quotes etc.) loaded into the MySQL database. The only challenge was to change stored procedures to the MySQL syntax as there are some differences in implementation of SQL in the databases.

DGM used a MySQL AB consultant to verify their implementation plan – the plan was approved with no major modifications needed, and no problems with the suitability of MySQL for this task were identified.

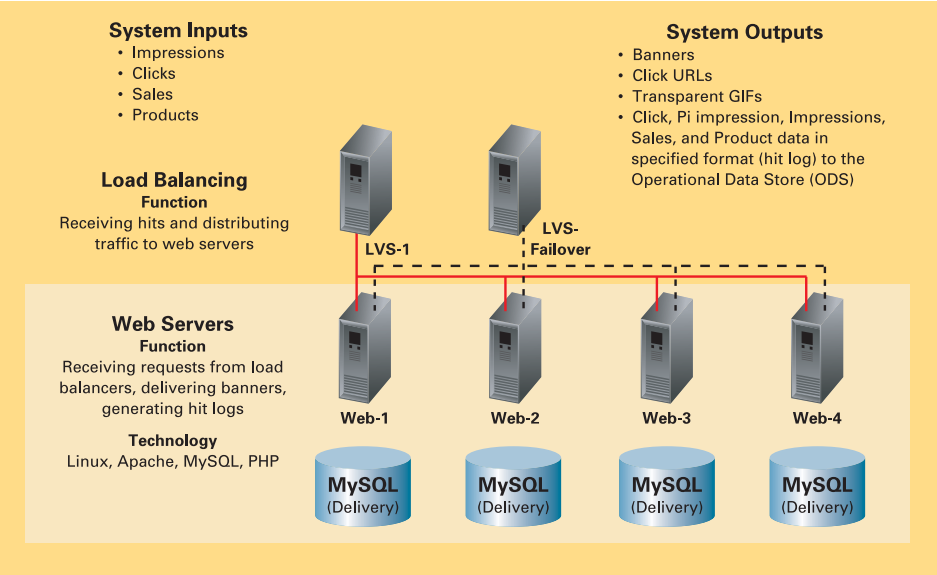
"Our challenge was to provide a cost effective scalable solution that could facilitate our growth as a company. We now have an application which will allow our company to challenge any of our major ad-serving competitors."

Carl Davis
Chief Technical Officer, DGM

Independent servers for high availability

"We decided to build self-contained LAMP web servers that could work independently of the rest of the architecture. This modular approach gives us the ability to distribute single or groups of web servers throughout the different regions of the world (using a distributed DNS system), increasing banner serving response times without affecting our architecture," said David Bell, Head of Development at Deal Group Media. "This independence allows us to have potential downtime or routine maintenance on one or more LAMP web servers without affecting our application or performance."

The application requests data from the MySQL database via a stored procedure which selects one row with a given criteria. Procedure response and MySQL caching enables minimal time delay returning result-sets. The browser is returned an HTTP response which can be a banner (image, flash, html etc.) or a redirection URL. Speed is of the essence as there might be several simultaneous requests for banners from the same web page.



The statistical analysis of data is centralized, meaning that each web server periodically sends its hit logs to the data store server for processing.

No complexity beyond necessity

Since MySQL leaves such a small footprint in memory, DGM developers have been able to bundle all ad-serving logic into a self-contained box. There are a number of separate LAMP environments with the ability to quickly add more.

"Simplicity in design is a key to our business success as banners need to be delivered quickly," said Robert Grzankowski, Developer/Linux System Administrator.

"We stabilized our platform. MySQL helps us to deliver our product well within the specifications of 99.9% uptime. Performance and scalability are excellent and MySQL hardly needs any administration. Once installed and configured, it simply works and doesn't need much maintenance."

Deal Group Media is currently considering the migration of more business systems to MySQL.

MySQL®

Technical Environment

Hardware: Dell Poweredge Xeon 3.2 GHz dual core servers with 2 GB RAM

Software: Fedora Core 4, Apache 2, PHP5 and MySQL 5.0

Number of Tables: 2

Number of Records in Largest Table: about 10 million

Size of Database: 3.5 GB

Number of Transactions: millions per day, this volume can increase by several multiples before requiring any server upgrades or server expansion. When further scaling is needed a new LAMP sever can be added in a matter of hours.

Average banner delivery response time: milliseconds

About MySQL

MySQL AB develops and supports a family of high-performance, affordable database products. The company's flagship offering is 'MySQL Enterprise', a comprehensive set of production-tested software, proactive monitoring tools, and premium support services.

MySQL is the world's most popular open source database software, with over 10 million active installations. 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!, Alcatel, The Associated Press, Suzuki and NASA.

With headquarters in the United States and Sweden -- and operations around the world -- MySQL AB supports both open source values and corporate customers' needs in a profitable, sustainable business.

For more information about MySQL, please go to **www.mysql.com.**

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