



Greyhound-Data *Dog Racing Site* *Relies on the Speed of MySQL*

Greyhound-Data (www.greyhound-data.com) is the world's most popular greyhound racing web site. It is the de facto web site for greyhound fans in worldwide who follow the results of the 'big tracks' in the United States, Ireland, United Kingdom, and Australia.

Founded in 1999, Greyhound-Data is a non profit organization with the goal of providing freely accessible information about greyhounds. The highlight of the site is that even very complicated race statistics across millions of records are calculated in fractions of a second due to the optimized MySQL backend.

In addition to being a web site for greyhound racing, Greyhound-Data also acts as data warehouse for several greyhound organizations and for more than 100 greyhound adoption organizations worldwide.

The Greyhound-Data site is an excellent example of an organization's ability to dramatically reducing hardware investments by carefully choosing the right software stack.



"MySQL's speed and our ability to extend its source code so easily allowed us to reduce our hardware investment by more than 80%."



Holger von Boehn
CEO, Greyhound-Data

Choosing the Right Software Stack

When Greyhound-Data first launched, it used a proprietary database system on its back end. Although it served its purpose in the beginning, as Greyhound-Data grew, it faced very complicated scalability issues. Greyhound-Data looked for alternatives and evaluated and benchmarked several databases — two commercial and two open source.

The benchmarks and extensive testing showed that:

Key Features of the Web Site:

- ◆ Live statistics on millions of race results
- ◆ Live searches on over a million pedigree sets
- ◆ Searchable archive of full-text indexed newspaper articles
- ◆ Searchable greyhound picture database with more than 40,000 pictures
- ◆ Searchable video archive of thousands of race videos, growing by more than 1,000 each month
- ◆ Live video channel for special events

- ◆ MySQL stored data in the most compact way
- ◆ MySQL had the best performance

In addition, two other factors influenced Greyhound-Data's decision. MySQL was inexpensive. For a non-profit organization, this was a big plus. By choosing MySQL, Greyhound-Data could save in two ways. First the software stack has an incredibly low Total Cost of Ownership (TCO). In addition, Greyhound-Data could save a great deal of money on hardware because MySQL had much better performance than the proprietary database.

In addition, the open source nature and extendibility of MySQL was a key factor in Greyhound-Data's decision process. In just a few days it was able to add some pattern matching functions, which are not part of the SQL specification and which are not available in a proprietary database. By moving these functions from the web application to the database, Greyhound-Data was able to achieve a 500% performance increase, greatly reducing the number of servers required to run the site.



"MySQL is available for just about any hardware. We started with Intel-based hardware which we later replaced with PowerPC. This was a very easy change as MySQL runs so well on many platforms."

Holger von Boehn
CEO, Greyhound-Data

The MySQL Advantage

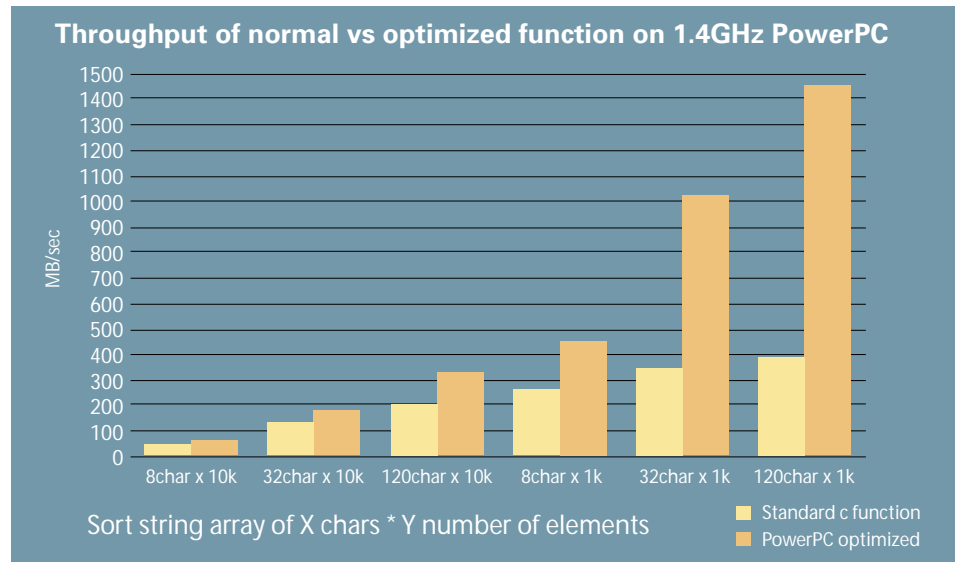
Holger von Boehn, CEO of Greyhound-Data said, "MySQL was fast to learn and easy to use. MySQL's expandability was a very big plus for our experienced developers in-house. In addition, its high performance was very important. Our users run millions of queries on our database per day. MySQL is able to run very complicated summaries over millions of records in a fraction of a second."

Depending on the complexity of the queries, the MySQL server is able to create between 50-2,000 dynamic pages per second. The web server currently serves traffic peaks of up to 4 GB per hour.

Of course, the cost-saving was very important for Greyhound-Data. It could build its site and data warehouse with less hardware. In fact, a single server can run a fully dynamic web site with 100 million hits.

In addition to these advantages, Greyhound-Data is able to provide an API for other organizations to use its database. More than a hundred web sites use this feature.

von Boehn said, "Without the extendibility of the MySQL source code, we would not be where we are now."



Technical Environment

Greyhound-Data uses one Pegasos PowerPC server, from MySQL partner Genesi, as a web server and one Pegasos PowerPC server as database server. Two more servers are used: one as replicated backup system and one for testing and development.

Greyhound-Data could also compile some of its functions to make use of PowerPCs ALTI-VEC feature. With ALTI-VEC, Greyhound-Data was able to significantly accelerate certain operations, increasing speed up to 200-400% in certain fields.

The database and web server both run GNU/Debian Linux. It uses an open source web server, MySQL, and PHP. PHP is used for most of the web front-ends. For a web server,

Greyhound-Data has now moved to the Lighttpd open source web server that provides noticeably higher performance than the previous Apache server. In its environment, the switch to Lighttpd gives approximately a 30% performance increase. In addition, Lighttpd provides much greater scalability so that Greyhound-Data can serve many more simultaneous users than ever before.



Technical Specifications

OS: Debian GNU/Linux

CPU: PowerPC 7447A

Web Front-end: PHP

Database Size: ♦ 4 GB
♦ 40 million rows
♦ 80 tables

"We chose MySQL because it is by far the fastest database we could find."

Holger von Boehn
CEO, Greyhound-Data

About MySQL

MySQL AB develops, markets, and supports the MySQL database server, the world's most popular open source database. With over six million active installations, MySQL has quickly become the core of many high-volume, business-critical applications.

Major corporations such as Yahoo!, Sony Pictures Digital Entertainment, Lucent Technologies, Motorola, NASA, HP, Xerox and Cisco rely on the ultra-fast, highly-reliable MySQL database. MySQL is available under the free software/ Open Source GNU general public license (GPL) or a non-GPL commercial license.

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



The World's Most Popular Open Source Database

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MySQL Worldwide Offices

North America Headquarters

Cupertino City Center Building
20400 Stevens Creek Blvd.
Suite 700
Cupertino, CA 95014
+1-425-390-0154 Sales

Seattle

2510 Fairview Avenue East
Seattle, WA 98102 USA
+1-425-743-5635

Worldwide Headquarters

Bangårdsgatan 8
S-753 20 Uppsala
Sweden
+46-730-234-111 Sales

Spain, Portugal, Latin America

+1-425-373-3434

Finland

+358-(0)-9-2517-5553

France

+33-(0)1-43-077-099

Germany, Austria, Switzerland

+49-(0)7022-9256-30