

Sun Systems for MySQL x86 Performance

Speed, savings and simplicity on Sun Systems with Intel Xeon Processor 5500 Series

You can achieve the performance of the biggest network players when you deploy your Web-based application. And you can simplify deployment, and scale to meet demand — it's just a matter of deploying with the right Web infrastructure.

You already know the biggest network players use MySQL — including Google, LinkedIn, Wikipedia, and Facebook. MySQL software's combination of power, scalability, flexibility, and open-source price simply can't be beaten.

But you need results: to get your application up and running on the

parts. Flash technology actually provides up to 65x better response time running the SysBench benchmark on MySQL 5.1, and 7x better throughput over HDD.

And now that Sun x86 servers come with the Intel Xeon Processor 5500 series inside, our solution provides the flexibility of running Linux, Windows, or the Solaris OS, with greater performance than ever — up to 3x the performance of the Intel Xeon Processor 5400 series. And because Sun and Intel have collaborated on engineering and design, you can get performance, efficiency, and reliability benefits unique to the Solaris OS.

Using this solution, Sun has helped companies tune their MySQL database performance an additional 50%, driving superior price/performance, while reducing costs.

Highlights

- Get a tuning performance boost by up to an additional 50%
- Flash-driven systems deliver up to 65x better response time, 7x better throughput
- Get the benefit of Sun and MySQL engineers working together under one roof to create an integrated, optimized solution
- Take advantage of the new Intel® Xeon® Processor 5500 series in our x86 servers for up to 3x performance boost compared to the Intel Xeon Processor 5400 series
- Speed time to market and simplify deployment of your Web-based application
- Enjoy the cost structure and flexibility of open source, with the enterprise-grade support and expertise of Sun

network fast, and you need maximal performance when you launch.

Sun can help. We're the people who bring you MySQL software, but we offer much more than just the database itself. Our Sun Systems for MySQL x86 Performance is an end-to-end solution that delivers maximal performance out of the gate, with a tuned database and simplified deployment. With a MySQL Enterprise™ subscription, a Sun Fire™ x86/x64 server, Sun Open Storage, and Sun Professional Services™, it delivers all the performance and price benefits of an open-source solution and the right Tier 1 expertise and support you need.

Our servers and storage also leverage robust new Flash-based solid-state drives (SSDs), which offer maximum performance while minimizing space and power requirements — and all with no moving

Using this Sun solution, companies have boosted their MySQL database performance by up to 50%, with up to 13x better price/performance, at up to 53x less cost.

Sun's enterprise-class, open-source offerings — are dramatically changing the economics of delivering. And our partnership with Intel demonstrates that we continually improve through collaboration and innovation.

So there's no reason to let the economic slowdown impact your plans and your momentum.

Welcome to the first day of the rest of your business.

Case study: LinkedIn — better performance from a smaller database

As a leading Web 2.0 Web site and the preeminent business networking destination, LinkedIn was facing explosive growth in membership and page views — its 25 million members were approaching 200 million downloads every day. Database synchronization was suffering, and LinkedIn was having difficulty maintaining the service levels that members had come to expect. That's when it came to Sun.

LinkedIn had always used Sun servers, the Solaris OS, and the MySQL database, in an infrastructure that also includes ORACLE™ databases.

To improve performance, Sun Professional Services worked with LinkedIn to upgrade the database and optimize it for performance. The new system was in place within two weeks. A three-year subscription to MySQL Enterprise Platinum ensured that LinkedIn's version of the database stayed up to date, its performance levels were maintained, and all issues were resolved quickly.

The result? LinkedIn experienced a 54% improvement in performance while tuning its database deployment. It has increased reliability and scalability as well as site responsiveness and is well positioned to accommodate future traffic growth.

Extreme efficiency, intelligent scale

All Sun x86 servers with Intel Processors now feature the Intel Xeon Processor 5500 series, the latest processor from Intel. It delivers up to 3x better performance than the previous generation of processors, along with greatly improved energy efficiency and reliability.

But the chip itself is just the beginning. For two years, Sun and Intel engineers have been working together to integrate the Intel Xeon Processor 5500 series and the Solaris OS, so you'll find advantages you won't find on any other x86 platform. For one thing, Sun systems running the Solaris OS can leverage Intel QuickPath Interconnect, Turbo Boost, and Hyper-Threading Technologies to boost performance and scalability. And Sun has integrated the innovative Power Aware Dispatcher (PAD) into OpenSolaris to maximize performance while minimizing power consumption.

Together, the Solaris OS and the Intel Xeon Processor 5500 series have achieved new world-record benchmarks in a variety of applications. After all, just because you're the fastest doesn't mean there isn't room for improvement.

Develop ahead

Even before you deploy your application, Sun can help you speed up your development cycle with a broad array of tools, support, and environments designed for companies such as yours.

- MySQL software training — A comprehensive set of MySQL software courses, our program gives you a competitive edge in building world-class database solutions.

- The Sun Developer Expert Assistance program — A dedicated online support service, the Sun Developer Expert Assistance program provides technical assistance for coding, answers to programming questions, and diagnostic advice.
- DTrace technology — A debugging tool that helps investigate performance issues and debug systemic problems for developers working in the Solaris 10 OS, DTrace gives you a system-level view across the entire software stack, even when different layers are implemented in different languages. What's more, DTrace has been integrated with Intel PowerTOP to enable administrators to monitor power use, diagnose watt waste, and improve efficiency.
- Solaris ZFS™ File System — A 128-bit, state-of-the-art file system, with end-to-end error checking and correction, a simple command-line interface, and virtually limitless storage capacity, the Solaris ZFS File System was named Best File System of 2008 by *InfoWorld*. And the Solaris ZFS File System provides unparalleled data integrity, capacity, performance, and manageability for the new Intel Core Microarchitecture, resulting in more reliable and available data subsystems.
- Integrated Lights Out Manager (ILOM) — An integrated hardware and software management tool, ILOM can help you provision, monitor, patch, and manage Sun systems running MySQL.
- Sun Web Stack — A collection of some of the most commonly used open-source applications, optimized for the Solaris OS platform, Sun Web Stack reduces your time to service and enables you to enjoy the best levels of performance from your system.

- Sun Web 2.0 Kit — A sample Web 2.0 calendar application implemented using three different technology stacks — Java™ Enterprise Edition, PHP, and Ruby on Rails (RoR) — the kit enables you to test workloads with a high level of user interaction, evaluate the differences in the various implementations and stack components, and compare the performance of the various technologies, so you can speed up the development process.
- Advanced Intel Xeon Processor 5500 series performance features for developers — The Solaris OS exposes the new Intel SSE4.2 instruction set built into the new Intel Xeon Processors. And because the instructions are implemented in hardware, rather than by software, you get faster execution and a reduced load on the CPU.

Top performance, fast and easy

Your goal is clear: Deploy your application and achieve maximal performance as quickly as possible. Sun offers a range of services, packages, tools, and resources to help you tune your database before you launch, to get it up to speed, and to monitor and maintain it on an ongoing basis at the level you require. Properly optimized, it can support millions of users running thousands of concurrent transactions per second.

MySQL Enterprise Gold is a comprehensive subscription offering that provides production support, monitoring tools, and MySQL database software for optimal performance, reliability, and security, as well as maximal uptime.

It includes:

- Monthly rapid updates and quarterly service updates, so you always have the most up-to-date version of MySQL Enterprise Server
- Enterprise monitor to oversee database applications, minimize security vulnerabilities, and optimize performance
- Remote troubleshooting to diagnose and solve problems as they arise
- Problem resolution for an unlimited number of incidents, including 24x7 phone consultations, Web-based case management, and emergency hot fixes if you discover a business-critical bug for which no known patch exists
- Best practices, straight from the engineering source, that enable you to configure for performance and high availability on Sun systems

MySQL services provide customized expertise and onsite analysis, tuning, and training to help you get the performance you need. And our services come at a set price with no hidden costs, so they're easy to budget for and easy to buy — and they deliver results quickly.

- MySQL Performance Tuning and Optimization will help you pinpoint and resolve bottlenecks, improve your architecture, reduce downtime, and fix performance issues. Typical performance improvements range from 50% to 100%, and some customers see performance improvements of up to 10x.
- MySQL Scale-Out, High Availability, and Replication Jump-Start will analyze your current database infrastructure; identify potential issues and limitations; and fine-tune MySQL to boost performance, scalability, and availability.

- Detailed technical guides and articles can help you analyze performance data and tune your application.

Pedal to the metal

What you're interested in is achieving maximal performance and scale of your MySQL implementation on whichever OS is right for you. Sun's Flash-driven x86/x64 servers, now with the Intel Xeon Processor 5500 series, deliver the goods by combining world-record performance with innovative power and cooling efficiency.

The only question is which class of Sun x86/x64 server best suits your needs. Choose between:

- **Small and dense:** Sun's compact, highly dense, and highly affordable x86/x64 servers are perfect for high-powered computing on a budget. Rack them, stack them, and watch them perform with up to two sockets and up to four cores.
- **Powerful and scalable:** Sun's powerhouse servers deliver extreme capacity, flexibility, and scalability, in addition to unbeaten energy efficiency. If you're looking for unmatched performance in a single rack unit, you simply can't do better.
- **Blade systems:** Sun's blade servers deliver twice the memory, storage, and I/O bandwidth of most competing blades, so you can add capacity on the fly, and mix and match architectures in the same chassis.

Storage that's wide open

You're building your application with open-source systems and software, so why not keep your storage open too? Low cost, high performance, and massively scalable, Sun Open Storage combines open-source software with industry-standard hardware, enabling you to save up to 90% off the price of proprietary storage solutions while avoiding vendor lock-in. So you have the flexibility to scale, reconfigure, or repurpose your storage infrastructure to meet new or changing needs.

See what you think

We make it easy to get started with a performance-scale MySQL software solution. Try it risk-free for 60 days through our Try and Buy program. With twice the MySQL Enterprise evaluation period of the standard trial, this program enables you to really put the system through its paces. And there's no way to lose — if you're not satisfied for any reason, we'll pay to ship it back. Check out the discounts that are available on both MySQL Enterprise subscription and the Sun hardware if you choose to keep the trial system.

Our Startup Essentials program is another option for young companies. It provides servers at rock-bottom prices, with free support and training, free and discounted software, discounted storage, and even discounted hosting from Sun partners.

Get the most from your MySQL software solution

When performance is what you need, Sun delivers it by bringing together the MySQL database and MySQL Enterprise subscription, tuning and optimization expertise, a choice of powerful servers now featuring the Intel Xeon Processor 5500 series, total operating system flexibility, and game-changing storage.

With a Sun Systems for MySQL x86 Performance solution from Sun, you can develop and deploy your application to network scale quickly and efficiently, achieving the results you need out of the gate.

And that means there's no limit to how fast or how big you can grow.

sun.com/mysqlsystems
sun.com/storage/flash/performance.jsp

