



Scale your Web-based applications with speed, simplicity, and savings

Sun Open Network Systems for Internet Infrastructure

Albert Einstein is credited with having said, "Insanity is doing the same thing over and over again, but expecting different results." If you are struggling to meet exploding scalability demands with the same architectural approach you used to deploy your first Web application, Sun offers a different way to help you achieve better results.

Sun Open Network Systems for Internet Infrastructure is a proven reference architecture that can help you massively scale your MySQL™ database deployment with speed, simplicity, and savings. Built on open standards and open systems, it's easy to implement into your existing environment, so you can take Web infrastructure scalability, flexibility, and compute density to new levels.

The ease to scale fast

This no-compromise Web design combines the massive throughput of Sun Blade™ systems based on CoolThreads™ technology and the new, dual-node Sun Blade X6270 server module powered by the groundbreaking Intel® Xeon® Processor 5500 series. Install them in the Sun Blade 6000 chassis, connect them with the new Sun Blade 6000 Network Express Module (NEM), and add a MySQL Enterprise™ subscription, the Sun GlassFish™ Portfolio, and Sun's Open Storage, and you can get up to three times the throughput, even as you're radically reducing maintenance and networking requirements, and cutting storage costs by up to 75%.

Highlights

- Easily scale to over 1M users
- Cut storage costs by up to 75%
- Processor and OS choice
- Get up to 3x throughput
- Radically simplify management
- Reduce database TCO by up to 90%
- Reduce cabling up to 90%
- Web Services Definition Workshop

Sun Open Network Systems for Internet Infrastructure is a proven reference architecture that can help you massively scale your MySQL deployment with speed, simplicity, and savings.

If you need to deploy as fast as possible, Sun™ Rapid Solutions can build and implement an end-to-end solution for you based on this architecture. It takes all the guesswork out of your multitier deployment, enabling you to maintain the highest possible performance levels even as you reduce complexity. So you can go from one user to millions — quickly, powerfully, at the lowest possible cost, and with complete peace of mind.

Together with the Sun GlassFish Portfolio and Sun Open Storage, you can get up to triple the throughput while radically reducing maintenance and networking requirements.

As a result, you can scale to meet demand — any demand — without taking on unnecessary costs, and without sacrificing performance. Which means your Web service or application can handle all the traffic it can draw.

Using free and open virtualization technology such as Solaris Containers and Logical Domains (LDom), you can increase throughput by up to three times, reduce power consumption by as much as 83%, drive down data-center costs, and launch new Web services much more easily. Sun's chip multithreading (CMT) technology-based servers can transform an unwieldy, resource-hungry database solution into an optimized, eco-efficient one.

Your choice, your scale, your way

At the heart of this reference architecture is the Sun Blade 6000 chassis — the world's most flexible blade chassis — which provides massive amounts of compute power, ease of administration, and leading power and cooling efficiency.

The chassis provides extreme OS flexibility — Sun Blade server nodes can be separately provisioned to run the Linux, Solaris™, or OpenSolaris™ operating systems. Or mix and match as your needs require — you can migrate nodes from one OS to another as needed. You can also select your processor type — the astounding power of UltraSPARC® processors with CoolThreads technology, or industry-standard processors by AMD® or Intel®. Whatever you choose, you'll benefit from twice the memory of competing blade servers and extreme I/O throughput — 142 Gb/sec — all while consuming 21% less power than competing blades.

Certain combinations will deliver superior results: For example, the new Intel Xeon Processor 5500 series achieves nearly triple the performance of the previous generation of Intel Processors. And because Sun and Intel have worked together for the past two years as the Intel Xeon Processor 5500 series was developed, combining the Solaris OS with the new processor enables reliability, efficiency, and *observability* benefits unavailable on any other platform.

If you need maximal throughput to scale your Web service, take advantage of the massive computing power of UltraSPARC processors with CoolThreads technology. They deliver incomparable performance and radical energy efficiency to support the most demanding computing, communication, and media services.

If you opt for new Flash-ready modules — directly integrated onto the blades — and solid-state drive (SSD) storage systems, you can boost performance even further. Replacing traditional hard disk drives with SSDs not only reduces energy consumption and cooling requirements, it improves response time up to 65x, while doubling throughput. Because it utilizes no spinning disks, it also reduces complexity, power consumption, and maintenance.

Because no one loves cables

Cabling requirements and networking administration can also be dramatically reduced with this reference architecture. The Sun Blade 6000 Virtualized Multi-Fabric 10 GbE NEM is an integrated networking solution — part of the Smart Link family — that delivers 10 GbE while radically simplifying wiring architecture for Web applications. By connecting blade servers with up to 90% less cabling, it enables you to reduce both the costs and complexity of installation, and eliminates management and interoperability problems by removing an entire management layer from the network. It also comes with a distinct cost advantage over traditional blade switches.

Radically simple storage

Massive scale requires massive storage, and Sun Open Storage provides an easier, faster way to handle large amounts of data. Based on industry-standard architecture and an open platform, it provides enterprise-class storage at a fraction of the price of proprietary storage, with powerful analytics and the industry's best self-healing capabilities for greater ease of use, real-time diagnostics and tuning, massive scalability, and break-through economics.

Sun™ Storage 7000 Unified Storage Systems are open-storage solutions ranging from entry level to large-scale installations, offering powerful real-time visibility features that enable easy analysis, optimization, and administration. The Sun Storage 7410 Unified Storage System — for organizations that need to scale big — contains four CPUs, has up to 128 GB of RAM, and holds up to 576 TB of data in either single- or cluster-node formation. Its hybrid architecture also reduces energy consumption for greater efficiency.

Open-source flexibility and costs

From data warehousing to e-commerce, analytics systems to business-critical transactional systems, MySQL software scales and performs to meet the demands of the highest-volume Web sites and applications in the world. With the MySQL Enterprise subscription, you can also get all the enterprise-class software, support, and services you need to reduce risk and ensure maximal uptime for your applications, while still reducing database TCO by up to 90% compared to proprietary solutions.

MySQL Enterprise is a streamlined, reliable database solution enabling fast, safe deployment and scaling, accelerating organizational innovation while eliminating vendor lock-in, so you can quickly respond to shifting market conditions with greater business agility. MySQL software's modular design and easy maintenance enable database administrators (DBAs) and developers to dedicate more IT resources to business requirements and spend less time on upkeep.

Well served

Sun Open Network Systems for Internet Infrastructure also includes the Sun GlassFish Portfolio, the most complete and cost-effective open-source Web application platform on the market. Together with MySQL software, the Sun GlassFish Portfolio provides the open-source software stack to build massively scaled Web applications on various operating systems.

The solution includes the Sun GlassFish Enterprise Server — the fastest open-source application server — and the Sun GlassFish Web Space Server, Sun's next-generation portal server platform, enabling businesses to pull together applications and content from a variety of Web-based and internal sources and present them as a unified, customizable portal on the Web. The solution also includes the Sun GlassFish Web Stack, a cross-platform portfolio of Apache/MySQL/Perl/PHP/Python (AMP) stack Web-tier components preconfigured and tested for optimal performance and compatibility, and a proven set of best practices for building your Web applications.

Sun™ Services

An array of Sun Services completes the package and helps ensure you receive maximal performance and value from your deployment:

- Web Services Definition Workshop offers an interactive workshop format to help you conceptualize your IT services and align them with business goals, then develop an action plan for implementation
- Sun Enterprise Installation Services (EIS) provide optimal and efficient system setup according to best practices, and help ensure proper configuration with all the latest patches and updates installed
- Sun Implementation Service plans and manages your transition, helping you avoid disruptions that could cost time, money, and business
- SunSpectrum™ services help you achieve high availability within your IT infrastructure with a portfolio of service plans that deliver proven expertise for systems, storage, and software

We also recommend these additional services to obtain the greatest possible value from your solution:

- MySQL Architecture and Design provides a review of your database application plans and an analysis of how to architect them for current and future requirements
- MySQL Performance Tuning and Optimization helps you pinpoint and resolve bottlenecks, boost performance, and reduce downtime
- Sun Single Point of Contact (SPOC) Service eliminates the need to make multiple calls to multiple vendors — just contact Sun when support is

- needed, and our experts will take on the responsibility of managing service contracts on behalf of your organization
- Sun Managed Services enhance the business value of your IT investment through improved operational efficiency and service levels
 - Sun Professional Services represent a broad array of consulting services to help you plan, implement, and manage an optimized IT environment

Sun Rapid Solutions make it easy

If you need to scale massively in the shortest possible amount of time, Sun Rapid Solutions can create a solution for you based on the Sun Open Network Systems for Internet Infrastructure reference architecture.

Because every business' requirements are unique, the process begins with an assessment workshop to understand your current system and define your needs. The Rapid Solutions team creates the architectural and implementation plans — then builds, integrates, and supports your optimal solution for using Sun IP and services, together with open hardware and software, following best practices and proven methodologies every step of the way, to ensure reliability. The result is a proven and tested Web infrastructure with maximal scalability and performance in minimal time, so you can meet your growing demand securely and with complete confidence.

Get ready for success

Success is a good thing, but to maintain success you need to be able to meet the challenges of traffic growth. Sun Open Network Systems for Internet Infrastructure provide rapid, radically simple scaling that can handle the most demanding requirements, reduce power consumption, and grow in a modular, integrated fashion.

Whether you implement the solution yourself or leverage Sun Rapid Solutions, Sun Open Network Systems for Internet Infrastructure provides the building blocks you need to scale your network services as demand requires. With this solution you can meet the challenges of success powerfully, easily, and within your budget.

For more information:
sun.com/internetarchitecture