

Sun™ Cool Stack for the Solaris™ Operating System

An optimized AMP stack and more



Highlights

- Sun Cool Stack optimized open-source software stack provides an optimized AMP stack (Apache, MySQL™ database software, and PHP/Perl) for the Solaris™ Operating System (Solaris OS).
- Cool Stack binaries are compiled and optimized with Sun Studio 12 compilers, resulting in a 30- to 200-percent performance improvement over standard binaries compiled with GCC.
- Cool Stack binaries allow organizations to deploy an optimized AMP stack on both x86 and SPARC® systems running the Solaris OS.
- Sun's acquisition of MySQL AB implies a significant R&D infusion, and global enterprise support for the MySQL database means that organizations worldwide can take advantage of Sun and MySQL community innovation — with less risk.

➤ Open-source software has benefited companies from small consulting shops to the largest multinational corporations. The ease and speed with which open-source solutions have helped enable Web-tier services in particular has had profound effect, quickly creating some of the largest connected communities, business opportunities, and new ways of sharing information. The LAMP stack (for Linux, Apache, MySQL™ database, and PHP/Perl) is at the root of many of these successes — letting organizations rapidly build and scale intelligent network software infrastructure without proprietary constraints and high costs.

AMP'ing up open-source deployments with the Solaris™ Operating System

There is no doubt that the LAMP stack and other open-source software has had a drastic positive effect on the ways that organizations deploy Web-tier applications, present information, and connect communities. At the same time, open-source environments have brought challenges for some organizations, as they have worked to build, optimize, and protect their infrastructures by integrating the various components of a cohesive software stack. For many, integration and support are key issues for adoption of open-source software.

Fortunately, one of the true benefits of open-source applications is the ability to rapidly migrate to more compelling operating system and hardware platforms, as needs change or as opportunities present themselves. While the AMP portion of the stack provides key functionality, the open-source nature of its component parts allows organizations to examine the stability, security, and compelling and innovative enterprise feature set of the open-source Solaris™ Operating System (Solaris OS). To help streamline this effort, Sun provides the Cool Stack optimized software stack — a collection of the most commonly used free and open source applications, pre-optimized for the Solaris OS.

Optimized with Sun Studio 12 compilers

Sun Cool Stack binaries are optimized using the latest Sun Studio 12 compilers, a set of record-setting, high-performance, optimizing compilers. Sun engineers have done considerable work to explore appropriate compiler options that produce the most significant results for the MySQL database and other open-source elements of the AMP stack. The result is Cool Stack binaries that deliver a 30- to 200-percent performance improvement over standard binaries compiled with GCC. Best of all, Cool Stack binaries are available for both Solaris SPARC® and x86 platforms — on qualifying hardware from any vendor.

Putting a billion dollars behind the “M” in LAMP

Sun today is the world's largest vendor of free and open source software, and Sun's commitment to the open-source community is increasing. Together with the acquisition of MySQL AG, Sun is committed to providing the open source community with the fastest and most stable tools available. Sun will build on the strengths of the MySQL database, already the most popular open-source database software on the planet. Sun has announced considerable new R&D investment in the MySQL database as well as global enterprise support — easing adoption.

Cool Stack components

In addition to performance improvements, Cool Stack components help organizations reduce time to service by providing packages that can be added quickly and simply to Solaris systems. For example, the components of the AMP stack are packaged together to provide a more streamlined installation, and are pre-configured to work together. Current Cool Stack components include:

- *CSKamp* — Comprised of *CSKapache2*, *CSKphp5*, and *CSKmysql32* integrated together (the *CSKmysql32* package includes client-side support to with PHP).
- *CSKruntime* — Containing core runtime libraries
- *CSKmysql* — Containing a 64-bit version of MySQL 5, recommended as a database server for the use of larger caches to deliver improved performance for large databases
- *CSKperl* — Containing perl5, including optimization and several perl extensions used by popular applications
- *CSKphlibsbundle* — Containing libraries required by various PHP extensions
- *CSKmemcached* — Containing memcached, a distributed object cache system
- *CSKruby* — Containing ruby, rubygems, and rails
- *CSKsquid* — Containing the Squid Web Proxy Cache
- *CSKtomcat* — Containing Apache Tomcat
- *CSKlighttpd* — Containing an increasingly-popular light-weight http server

The contents of Cool Stack are subject to change with new revisions. Please see the Website for the latest available binaries.

The Solaris™ 10 OS and Open Solaris

The Solaris 10 OS — available now as open source through the Open Solaris project — includes many innovative features that can make the critical difference for enterprise deployments:

- *DTrace* is a comprehensive dynamic tracing framework for troubleshooting systemic problems in real time. With DTrace, administrators and developers can tune applications for performance, yielding operational insights not typically available — all with little or no performance impact.
- *Solaris Containers* isolate software applications and services using flexible, software-defined boundaries. Each application can be given a private environment, virtually eliminating error propagation, unauthorized access, and unintentional intrusions.
- *Solaris ZFS* offers a dramatic advance in data management with an innovative approach to data integrity, tremendous performance improvements, and a welcome integration of both file system and volume management capabilities. A true 128-bit file system, Solaris ZFS removes all practical limitations for scalable storage, and introduces pivotal new concepts such as virtual storage pools to de-couple the file system from physical storage.

In addition, the Solaris OS incorporates advanced security features designed to provide protection from external and internal attacks.

Learn More

For more information on how to build with a better open source Web stack, go to:

sun.com/samp

For more information on related Sun products, please see:

sun.com/x64

sun.com/coolthreads

sun.com/servers/blades

Deploying the AMP stack on Sun

As the world's largest contributor of code to the open source community, Sun is committed to providing performance and scalability for the MySQL database and other key open-source software — no matter what the platform. The Solaris OS and Sun's own hardware platforms remain a key focus for delivering the best performance possible. Sun remains active optimizing the AMP stack and the MySQL database for the Solaris OS, as it provides global support for the MySQL database and continued R&D investment for the open source community.

Sun's broad family of Sun Fire™ rackmount servers and Sun Blade™ modular systems support the fastest Intel™ Xeon™, AMD Opteron™, and UltraSPARC® processors available. In addition, Sun's innovative UltraSPARC T2 chip multithreaded (CMT) servers offer the ability to run up to 64 threads on a single server — providing massive scalability the AMP stack and other software.