



Solaris™ 10 OS on AMD Opteron™ Processor-based Systems

Highlights

- Supports the latest generation of AMD x64 processors
- PowerNow! enhancements provide additional power management capabilities
- Remote client display virtualization
- Solaris Trusted Extensions optimizations for better interoperability and security

> A powerful combination for your business

Sun and AMD take x64 computing to a new level with the breakthrough performance of AMD Opteron™ processor-based systems combined with the Solaris™ 10 OS — the most advanced operating system on the planet. By combining the best of free and open source software with the most powerful industry-standard platforms, customers can take advantage of the most robust and secure, yet economical Web, database, and application servers.

A unique partnership

Coengineering and technology collaboration

Sun and AMD software engineers work jointly on a range of codevelopment efforts including future development of HyperTransport, virtualization, fault management, compiler performance, and other ways Solaris may take advantage of the AMD Opteron architecture. Solaris 10 5/08 also includes support for the latest generation of AMD x64 processors and UltraSPARC CMT systems.

Growing the Solaris™ OS ecosystem for AMD64

Sun and AMD are working together with key target ISVs, system builders, and independent hardware vendors (IHVs) to fuel growth of the Solaris 10 ecosystem around AMD64. By jointly pursuing partners, AMD helps strengthen the value proposition for partner engagement, lending additional credence to the Sun x64 strategy. Additionally, Sun delivers a source code guarantee for Solaris assuring that if you develop and successfully compile C and C++ applications to run on SPARC® platforms, these applications will successfully compile and run on x64/x86 platforms.

Engaging the community

Leveraging open source developers, Sun and AMD work jointly with the community to define and promote interoperability standards and best practices. Additionally, the two companies invite IHVs to participate by offering support for their x64 drivers through various communications and joint campaigns.

Price/performance

World-record performance

Leveraging more than 20 years of Symmetric Multiprocessing (SMP) expertise, Sun has tuned and optimized Solaris 10 for the AMD Opteron platform to deliver exceptional performance and near-linear scalability. For enterprises with demanding compute, network, and Web applications, the combination of Solaris 10 and AMD Opteron processor-based systems is often an ideal fit. Dozens of performance and price/performance world record benchmarks demonstrate this exceptional combination. Solaris 10 has set more than 50 world records, employing various industry-standard benchmarks or workload scenarios on AMD Opteron systems.

Improve application performance

Optimizing C, C++, and Fortran compilers in Sun Studio 11 boosts runtime application performance. A series of industry-standard benchmarks referred to in this document are related to Sun Studio tools for use on AMD Opteron processor-based systems. And AMD PowerNow! enhancements mean additional power management capabilities for the latest versions of the AMD processors.

Memory placement optimization

With memory placement optimization originally implemented in 1998 for UltraSPARC™ processor-based servers, Sun harnesses its existing expertise to provide this support to

AMD Opteron processor-based systems, improving overall system performance on systems with multiple dual-core CPUs.

Enabling data-intensive computing

Both the Solaris OS and AMD Opteron processors are built to enable data-intensive computing for large numbers of users or transactions, delivering a natural performance advantage.

Solaris for lower TCO

In a typical deployment scenario, the cost of obtaining support for Solaris is 20- to 40-percent less than obtaining it from Red Hat. A consumer Internet company specializing in highly customizable social networking environments shared key findings on why the Solaris OS was chosen to run its business. This TCO scenario is based on the cost of hardware, software, support and service plans, power, and cooling, as well as required space and system footprint. For this customer, the cost of supporting Red Hat was ten times more than Solaris on AMD Opteron processor-based systems. Visit sun.com/solaris/ning for details.

Product

Technology advancements in Solaris 10, and its ability to take advantage of AMD Opteron architecture, create unique advantages for the powerful pair. As Sun and AMD development teams continue to share roadmap information and collaborate in this space, additional optimizations will become available.

Multicore platform support

Solaris 10 features are not just fully supported, they are specifically engineered for multicore systems. For example, Solaris Containers can allow for fine-grain resource management at the core level. Additionally, the Predictive Self Healing functionality can automatically detect

failing cores and take them off line, without taking the entire CPU off line or affecting application availability.

Virtualization on x64

Building on a solid foundation of resource management functionality, Solaris Containers offer efficient application consolidation that helps reduce system administration complexity. With the inherent performance of AMD Opteron systems, customers can use Solaris Containers to consolidate multiple applications into a single system, while enjoying independent control over allocated resources. By isolating applications and faults, security is further ensured.

Built to scale

Today, 32-bit applications can experience increased performance by accessing maximum memory space on AMD Opteron platforms. As customers choose to move from 32-bit to 64-bit applications, they may immediately deploy these in the same environment, experiencing a seamless, risk-free growth path to 64-bit computing.

DTrace

System administrators, integrators, and developers can use dynamic instrumentation and tracing capabilities to really see what the system is doing, for both the kernel and user processes.

DTrace can be utilized on production systems without modification to applications. This unique, powerful tool gives a true system-level view of application and kernel activities, even those running in a Java™ Virtual Machine. Baseline data gathering reduces the time for diagnosing problems from days and weeks to minutes and hours, enabling faster data-driven fixes and an opportunity to unleash the full potential of the powerful AMD Opteron processor.

Learn More

Find out about the Solaris 10 OS and download it for free at sun.com/solaris.

Find out if Solaris 10 is supported on your x64 system at sun.com/bigadmin/hcl.

Learn to develop Solaris applications at developers.sun.com/solaris.

Find out more about the wide range of applications supported and world records achieved at Sun.com/AMD.

Predictive Self Healing

An innovative capability in Solaris 10, Predictive Self Healing automatically diagnoses, isolates, and recovers from many hardware and application faults. As a result, business-critical applications and essential system services can continue uninterrupted in the event of software failures and major hardware component failures, even software misconfiguration problems. To deliver fault management support for AMD Opteron processor-based systems, Sun worked closely with AMD.

Open source

For organizations that require access to the source code when choosing an operating system, the Solaris OS — millions of lines of code — has been released to the open source community via opensolaris.org. OpenSolaris gives developers and users a low-risk option for evaluating Solaris source, plus an excellent opportunity to participate in developing the Solaris OS. Additionally, 188 leading open source packages — like Apache, Tomcat and Samba — are included, precompiled and ready to go.