

The Sun Solaris™ Operating System on AMD Opteron™ Processors

World-class OS reliability meets industry-leading multi-core performance



Sun and AMD: Bringing Together the Best of Both Worlds

The Sun Solaris™ Operating System (OS) running on AMD Opteron™ processors offers an ideal solution for enterprises of all sizes that seek a dependable, scalable, and secure computing platform to serve their current and future needs. The product of a longtime collaboration between Sun and AMD, this powerful solution features a reliable, stable OS that has been specifically optimized for the AMD Opteron processor platform. The result: outstanding performance and new levels of power and functionality for real-world applications.

Highlights

- Powerful processor and OS solution for x64 systems
- Proven, with leading-edge OS performance on a widely deployed processor platform
- Mission-critical reliability with fault management and other advanced features
- Designed for system scalability and easy technology transitions
- Outstanding consolidation platforms supporting multiple virtualization options
- Free, open-source OS, fully supported by Sun
- History of collaboration between AMD and Sun
- World-class, trusted technology partners committed to excellence in customer satisfaction

Delivering Reliability, Scalability, Security, and Performance for Today's Enterprise

When you run the Solaris OS on AMD Opteron processor-based systems, you get the capabilities of a truly mission-critical operating system. AMD and Sun have invested five years in collaboration to tune the AMD Opteron processor to fully capitalize on the innovations in the Solaris OS – and to tune the Solaris OS to achieve outstanding performance on AMD's x86 architecture. That investment makes this solution the optimal choice for a fully integrated enterprise-class system.

Rock-Solid Reliability

The Solaris OS provides a robust feature set that works to ensure uptime for mission-critical applications, even in the event of hardware and application faults or during planned downtime. And for continued high availability, the Solaris Fault Management Architecture tracks and diagnoses system errors and failures, helping system administrators to respond to problems before they adversely impact business.

Massive Scalability

The Solaris OS offers proven scalability, as the AMD Opteron processor scales from two cores to 32 (for eight-socket, quad-core systems) in a single architecture. Together, they support systems in environments ranging from small and medium organizations to large enterprises, running applications from the edge of the network to the data center. The scalability of the combined solution allows you to standardize and streamline IT support requirements with the growing demands of your business.

Proven Security

Leading-edge security features in the Solaris OS can help reduce the risk of intrusions, keep applications and data secure, and control user access to critical resources. The Solaris 10 OS—the latest version of the Solaris OS—extends its proven security

to x86 systems with Solaris Trusted Extensions, a feature that makes it possible to securely host thousands of applications and multiple customers on the same system.

Designed for High Performance

The Solaris 10 OS on AMD Opteron processor-based systems has set performance and price/performance records on a range of benchmarks covering a variety of x86 workloads. The high-performing Solaris 10 OS has also been tuned for optimal memory placement, enabling a solution that takes full advantage of the AMD Opteron processor's large and unique distributed memory architecture.

Protecting Existing Technology Investments

To help you protect your investments in technology, the Solaris OS running on AMD Opteron processors allows for smooth technology transitions.

Consistent Processor Technology Across Systems

To help minimize the cost and disruption of transitions and to maximize investments in hardware, software, and personnel, AMD x64 technology and the common core strategy are consistent across one-, two-, four-, and eight-socket systems and with previous generations of AMD Opteron processors. The processor architecture is designed to evolve in a planned way, providing compatibility among processor generations. The transitions from one generation to the next are integrated into the Solaris OS, ensuring simple migration as the processor and platform technologies evolve.

Timely OS Support for Processor Innovations

As new features are introduced in the AMD Opteron processors, new functionality is quickly added to the Solaris OS, helping to ensure that customers always have rapid access to the latest processor capabilities.



Broad Application Support

Your software application investments are protected by the combination of Sun Solaris and Java™ development environments running on AMD Opteron™ processors. These systems can currently run thousands of the most popular applications; for the future, Sun and AMD plan to continue to make it simple for ISVs to port new applications.

Ongoing Application Compatibility

With the Solaris OS running on AMD Opteron processor-based systems, older applications can run unchanged, and can even take advantage of new, advanced Solaris features. Plus, binary compatibility between Solaris releases allows existing applications to run unmodified during transitions.

Reaping the Rewards of Collaborative Innovation

AMD and Sun engineers have been working to optimize the AMD Opteron processor for the Solaris OS since 2003. The ongoing collaboration between AMD and Sun has led to a growing number of innovations to increase system performance and help reduce operating costs.

Improved Power Management

The combination of Enhanced AMD PowerNow!™ technology and the Solaris OS allows you to implement server power management schemes that can help reduce system power usage while maintaining high system performance. This can contribute to reductions in power consumption that can be especially significant in data centers that run large numbers of server systems.

Advanced Multi-Core Support

Five years of collaboration between Sun and AMD have resulted in exceptional multi-core processing performance and scalability. More than a dozen AMD Opteron processor-based Sun x86 systems run the Solaris OS, and many Solaris 10 OS features have been specifically engineered for multi-core AMD processor-based systems running multi-threaded applications.

Multi-Platform Compatibility

The Solaris OS running on AMD Opteron processor-based systems delivers the same exceptional features on multiple hardware systems. In fact, the Solaris 10 OS works with many different AMD processor-powered systems. It's compatible with 900 x64/x86 systems from technology partners like Sun, Dell, HP, and IBM, as well as many others.

Outstanding Virtualization

To simplify and optimize operations in the next-generation data center, Sun offers the Sun™ xVM infrastructure – which addresses both individual server virtualization and unified management of both physical and virtual assets throughout the data center. Collaboration between Sun and the Xen open-source community has also enabled the full use of hardware-assisted AMD Virtualization™ (AMD-V™) technology extensions supported in Xen to help improve virtualization performance, resource utilization, and scalability.

The AMD Opteron™ Processor: Building on a Proven Platform

Leading companies around the world trust AMD Opteron processor-based platforms for their most demanding enterprise computing needs. And AMD has increased its advantages with quad-core technologies and advanced innovations that further enhance energy efficiency.

Quad-Core AMD Opteron processors are designed to leverage the native x86 instruction set that enterprises trust. AMD's enhancements provide significant advantages, including industry-leading performance-per-watt and x86 virtualization, translating to low total cost of ownership. And the ability to upgrade existing Dual-Core to Quad-Core AMD Opteron processors within the same power and thermal envelope as previous generations of AMD Opteron processors enables more powerful servers within existing data center footprints.

AMD's Direct Connect Architecture features multiple cores on a single wafer, with those cores directly connected to each other, the memory, and the I/O subsystem. In addition, the memory controller is built directly onto the processor die. Quad-Core AMD Opteron processors can provide much higher levels of performance in the same power and thermal envelopes as Dual-Core AMD Opteron processors, providing easy upgradeability from dual- to quad-core so you can leverage existing IT equipment.

The Solaris OS: Proven OS Performance and Open-Source Innovation

Designed specifically for multiprocessing and 64-bit computing, the Solaris OS delivers proven results. It delivers a consistent computing environment for everything from departmental servers to massive, clustered servers with hundreds of CPUs, running applications from mission-critical databases to high-performance Web farms.

The Solaris 10 OS is specifically engineered and optimized for multi-core systems running multi-threaded applications, with integrated 64-bit support and features like memory placement optimization to help improve data throughput. It also provides improved support for Enhanced AMD PowerNow!™ technology, contributing to better power management.

The OpenSolaris™ OS is an open-source release of the Solaris OS, providing a stable, consistent, easy-to-use environment for developing new applications. It combines open-source innovation with the assurance of proven, extensive testing and worldwide support.

Get the Details

To learn more about the Sun Solaris OS on AMD Opteron processor-based systems, visit: <http://developer.amd.com/solaris>

Download the Solaris OS

To give the Solaris 10 OS a try, visit: sun.com/solaris

Find out more at <http://developer.amd.com/solaris>

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