

SOLARIS™ 10 / x64 SYSTEMS SOLUTION BRIEFS

Solaris 10 and x64 Systems from Sun at work

Consolidation through Virtualization

Consolidating multiple applications onto a smaller number of servers helps IT organizations cut cost and complexity and do more with less. Sun offers server and virtualization solutions that enable numerous legacy server systems and their applications to be consolidated onto fewer x64 servers.

Virtualization technologies, such as Solaris Containers and VMware ESX Server, create logical partitions on a server, enabling multiple applications or application instances to share the same hardware without affecting each other's stability or compromising the boundaries of their security domain. This enables IT organizations to better utilize resources like CPU, memory, and network bandwidth, and dynamically adjust resource allocation as jobs dictate. It also gives them the flexibility they need to respond quickly to rapidly-changing workloads.

Database

Data centers and database technologies have become increasingly complex, especially at the enterprise level, as database administrators are tasked with managing workloads such as customer relationship management, data warehousing, and analysis and processing of an ever-growing range of data types. This makes database management a particular challenge for IT departments trying to provide their organizations with robust, efficient information processing capabilities while controlling IT costs.

Sun x64 solutions, powered by the world-class AMD Opteron processor, meet these challenges with simplified

architectures, horizontal scalability for handling growing requests and large data sets, support for multiple operating systems and database applications, and outstanding performance. DTrace, the unique diagnostics engine in Solaris 10, can improve database performance dramatically, and Solaris comes pre-optimized for popular solutions like Oracle and Sybase. Solaris also includes its own Directory Server as well as LDAP and MySQL.

Solaris Containers and virtualization technologies let resources be allocated to large database functions as needed while preserving stability for multiple databases on the same systems, while security and predictive self-healing functionality also helps to keep databases protected and available. Sun database management solutions maximize resource utilization in data-center environments; provide investment protection, and lower total cost of ownership.

Electronic Design Automation (EDA)

The electronic design automation (EDA) marketplace was one of the first to capitalize on the horizontal scalability of multiple small servers powered by grid-computing solutions. But increasingly complex designs, along with sprawling server farms, are driving a need for improved performance and capacity beyond the capabilities of the 32-bit x86 server architecture and operating systems supporting most EDA applications today.

Sun offers a smooth migration path to its scalable, 64-bit x86 AMD Opteron and factory-configured Grid Computing systems, enabling EDA organizations to preserve their investments in EDA

applications with simultaneous execution of 32- and 64-bit code at full speed. Sun's EDA solutions offer sufficient memory capacity for applications with large data sets and memory-intensive simulations, as well as high performance for IC, FPGA, and PCB layout and design. Additionally, Sun's large electronic design teams are heavy users of EDA technology and have long-standing relationships with key vendors, ensuring that the leading EDA tools are optimized for Sun platforms.

Mechanical Computer-Aided Engineering (MCAE)

Simulation of real-world problems, known as virtual prototype development (VPD) or mechanical computer-aided engineering (MCAE), has become standard practice among manufacturers worldwide. It helps them reduce costs and meet short time-to-market windows, while improving product quality, optimizing materials usage, and addressing increasingly stringent governmental safety and environmental regulations.

Sun's 64-bit AMD Opteron processor-based servers and workstations, combined with its Grid Computing technologies, have proved very popular in MCAE and other high performance and technical computing (HPTC) markets. The Sun systems offer outstanding performance, memory and scalability to handle complex models, data sets and 3D graphics. By dynamically allocating x64 resources using Solaris, jobs can be completed more quickly using larger data sets for higher quality simulations, faster time to market and a competitive edge. AMD Opteron processors support both 64-bit and 32-bit applications and a choice of



operating systems, enabling manufacturers to make the most of their existing MCAE applications while smoothing the path to 64-bit power.

Scientific Research and Visualization

Like everyone else, researchers are under pressure to accelerate results and time to value. At the same time, they need to adhere to the rigors of the scientific method, processing ever-larger amounts of data in increasingly sophisticated ways. As a result, the sciences have seen a dramatic increase in the demand for processing power, which has been met by Sun 64-bit workstation expertise for over ten years.

Sun's workstations with AMD Opteron processors are cost-effective systems that handle massive data sets in record time. They deliver fast performance, world-class graphics solutions, and the ability to deploy large data sets across multiple operating systems. Sun's x64 AMD Opteron systems for research and visualization also deliver unprecedented graphics performance on the workstation, as well as the industry's largest memory footprint. With performance, capacity, flexibility and interoperability unlike any other system, Sun solutions deliver the low-cost, high-performing environment required by researchers.

Security

Enterprises are relying more and more on the Internet and the Web for critical aspects of their business, making them vulnerable to a host of security threats that can affect productivity and revenue, and even destroy their brand. Sun and its partners provide a comprehensive set of defense-in-depth architectures and integrated solutions designed to prevent, detect, and quickly respond to any form of security threat, whatever its source.

Sun's AMD Opteron-powered servers are an ideal secure platform, and in combination with Solaris 10 hold the world record for secure web serving

performance. The AMD Opteron processor includes Enhanced Virus Protection to guard against buffer overflow exploits. Solaris 10 is secure by default and incorporates numerous security features, such as Containers, which help isolate applications from security threats. The Solaris Cryptographic Framework automatically encrypts network traffic. Single Sign-On, Process Rights Management and User Rights Management help ensure that access to information and systems is only given when needed, right across the infrastructure. Solaris Secure Execution monitors system integrity and automatically prevents execution of suspicious code. These capabilities are supplemented by the Trusted Solaris Extensions, which offer military-grade security where it's needed. Solaris also has the ability to run Sun's dedicated security and identity-management products, which together produces a scalable, end-to-end security infrastructure.

Software Development

For over 20 years, Sun has been delivering innovative, comprehensive, and cost-effective solutions for software developers, enabling them to keep up with business demands for faster delivery of code. And, to enable them to leverage the knowledge base and experiences of hundreds of thousands of their peers, Sun brings together a valuable community of software developers in the Sun Developer Network.

Sun x64 systems, powered by the world-class AMD Opteron processor, offer unmatched performance, with flexibility at the operating system level to enable integration with existing configurations. Development tools, such as Sun[™] Studio, Sun Java[™] Studio Creator and Sun Java Studio Enterprise, come pre-installed on the Sun Ultra 20 Workstation and deliver innovative features for programmers of all skill sets. From a single, high-performing workstation, developers can now code, compile, and deploy programs across multiple platforms.

Web and Application

As fundamental IT infrastructure elements that process data and transactions, Web and application serving environments have a tremendous impact on the scalability and price/performance of the applications they serve, not to mention the security of the organization's network and information. With Web server vulnerabilities growing each year, many organizations have come to rely on costly and complex network security add-ons rather than on improving infrastructure security.

Sun x64 systems, built on the industry-leading AMD Opteron processor platform and using Sun Java System software, offer a secure, high-performance, cost-effective Web application serving solution at every price point. In addition, they provide secure reverse-proxy services to shield existing Web application infrastructures from external threats, without the need to migrate or modify existing applications.

Solaris 10 features numerous capabilities that help ensure web and application servers stay available and reach optimal performance. To ensure availability, predictive self-healing overcomes hardware failure, while Solaris Containers let you host multiple sites and applications on a single system with full fault and security isolation. Process Rights Management limits the effect of a security compromise on your web servers. To boost performance, DTrace can produce dramatic results by optimizing your applications, even on production systems. And Solaris includes the fastest TCP/IP stack in the world with cache accelerators built in, for faster performance and a greater number of connections.