

Sun Blade 8000 Modular System

SPECjAppServer2004 Benchmark



Fortifying its position as a leader in providing best-of-breed solutions, Sun Microsystems posted a new world record on the SPECjAppServer2004 benchmark. The Sun Blade 8000 Modular System, outfitted with ten Sun Blade X8420 server modules and running the SolarisTM 10 Operating System (OS), produced a record

breaking result that showcases the performance of BEA WebLogic Server 9.2 software running on Sun's high-end enterprise x64 platform and demonstrates the ability to run the entire application server tier of SPECjAppServer2004 benchmark within a single blade server chassis.

In the recent years, the concerns for Data Center space, power, and cooling have been at the foreground with many large enterprise customers. This highest performing SPECjAppServer2004 benchmark result, clearly demonstrates that even the largest application server farms could be consolidated effectively without an impact on performance or application throughput.

Highlights

- New world record result of 7174.56 SPECjAppServer2004 JOPS@Standard using the Sun Blade 8000 Modular System and BEA WebLogic Server 9.2 software at the application tier*
- The Sun Fire E6900 server, equipped with 24 UltraSPARC IV+ processors, and powerful IBM DB2 data server software, running on Solaris 10 OS, delivered the database transactions needed to support the world record result
- The Sun Blade 8000 Modular System, with 80 processing cores, demonstrates exceptional performance in less space while reducing power and cooling costs
- The BEA WebLogic Server 9.2 offers leading performance and enterprise class features for business critical applications
- The Sun Fire X8000 Modular System and Sun Fire E6900 server duo delivered an unprecedented service level that allowed over 43,000 concurrent simulated benchmark users to access the J2EE-based application workload

SPEC Java Application Server Benchmark

The Standard Performance Evaluation Corporation (SPEC) is a non-profit organization dedicated to developing standard benchmarks and has evolved to the de-facto industry standard for measuring standard workloads across disparate systems. The SPECjAppServer2004 is a multi-tier benchmark for measuring the performance of Java 2 Enterprise Edition (J2EE) technology-based application servers. SPECjAppServer2004 is an end-to-end application which heavily exercises all parts of the underlying infrastructure that make up the application environment, including hardware, JVM software, database software, JDBC drivers, and the system network. Software and hardware vendors, like Sun, IBM and BEA, regularly post benchmark results on SPECjAppServer2004 as an aid for customers to understand the platform capability under heavy load.

The record breaking result of 7174.56 SPECjAppServer2004 JOPS@Standard on the Sun Blade 8000 Modular System showcased unprecedented performance by running the entire application server tier within a single blade server chassis.

The benchmark configuration consisted of the following major components:

Hardware

- Sun Blade 8000 Modular System
- Sun Fire E6900 server
- Sun StorageTek[™] 3510 FC arrays

Software

- Solaris 10 OS
- BEA WebLogic Server 9.2

- Java 2 Platform Standard Edition Development Kit 5.0 Update 10 (32-bit)
- IBM DB2 8.2.6 (64-bit)

Sun Blade 8000 Modular System

The Sun Blade 8000 chassis accommodates up to ten 4-socket AMD Opteron-based server modules, each supporting up to 64 GB of memory, two hot-swappable SAS or SATA



Figure 1: Sun Blade 8000 Modular System
HDDs, and six PCI Express interfaces. This combination can pump out 1.92 Tbps of I/O throughput in a single 19U chassis, besting the throughput and density of traditional blade servers. The flexible architecture of the Sun Blade 8000 Modular System is based entirely on externally accessible hot-pluggable components—I/O, processing, system management, and chassis infrastructure. All

critical components are hot-swap and redundant. Grid-redundant power supply modules with independent fans, and chassis fan modules with dual fans, keep it running cool. The Sun Blade 8000 system's focus on high-end x86 computing enables server consolidation and virtualization, business applications, large-scale HPC deployments and high-requirement databases in Solaris, Linux or Windows to benefit from modular efficiency and serviceability.

Sun Fire E6900 server

Powered by up to 24 high-performance UltraSPARC® IV+ processors, the Sun Fire™ E6900 server delivers maximum scalability and productivity to address demanding workloads in the datacenter. It's an ideal solution for business processing, databases, data warehouses, IT infrastructure, application serving, compute-intensive scientific engineering, and more. The server's balanced system architecture, combined with PCI-X technology and twice the memory capacity of previous systems, delivers real performance and throughput gains. The Sun Fire E6900 server also enables you to run mixed generations of UltraSPARC III, IV, and IV+ processors seamlessly—even in the same server—which prevents costly migrations, and its five-year lifecycle helps lower total cost of ownership significantly over competitors' offerings.

Sun StorageTek 3510 FC array

Good things sometimes come in small packages, but if they are from Sun, you can expect class-leading price/performance and flexibility. Sun storage solutions provide you with comprehensive hardware, software and services to solve your business challenges enterprise-wide.

The powerful Sun StorageTek 3510 FC array uses a high port count modular, building-block approach to help reduce SAN costs by thousands of dollars. With its highly intuitive management interface, this array is extremely easy to deploy, configure, manage and monitor. Using cost effective expansion trays, a RAID array can be scaled to 108 drives, that's over 51TB of raw capacity when combining both FC and SATA expansion trays within a single centrally managed configuration.

Solaris 10

Solaris 10 incorporates more than 600 new features, such as DTrace, Predictive Self-Healing, Solaris Containers, and ZFS, that make it the most efficient, secure, and reliable operating system ever built. Solaris Containers, a server virtualization feature available in Solaris 10, provides a logical isolation for an application or software service — a separate, virtual Solaris environment within a Solaris instance. For deployments of large application server farms running BEA WebLogic Server on Solaris, Windows, or Linux environments, customer's can leverage the Sun Blade 8000 Modular System, along with Solaris 10 and Solaris Containers to consolidate their environments while maximizing system resource usage and with optimal performance.

BEA WebLogic Server 9.2 Application Server

BEA WebLogic Server is the rock-solid J2EE foundation for enterprise applications and SOA services. It's design, built for reliability and performance, and it's meticulous adherence to Java standards has elevated WebLogic Server to best in class for J2EE application servers. The latest version, BEA WebLogic Server 9.2, is designed to increase productivity, help reduce cost of IT projects, and includes zero downtime features. In addition to the application server, BEA offers an entire spectrum of application infrastructure products to help enterprises develop and maintain Java applications and Web services.

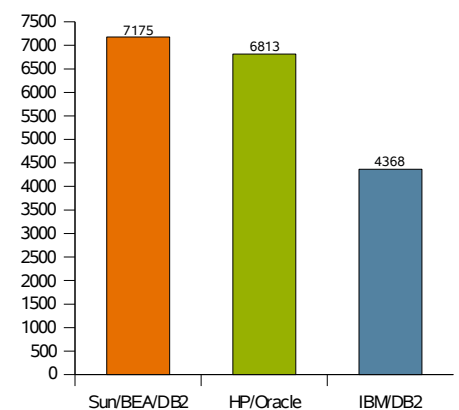
IBM DB2 Data Server

IBM DB2 data server delivers higher reliability, performance, and self management to achieve a lower cost of ownership. IBM DB2 Information Management is designed to provide customers with flexible infrastructure which can be adjusted quickly to meet changing business demands across many different platforms and in conjunction with many third party software applications. The IBM DB2 Information Management portfolio on Solaris

plays a critical role in this infrastructure. In addition to DB2 data server, all other elements of the portfolio, such as business intelligence software, enterprise content management, data management tools and information integration software offer our customers tightly integrated, dependable and scalable solutions flexible enough to meet any business need. Dedicated engineering teams work relentlessly to help ensure that IBM's DB2 Information Management portfolio is finely tuned, highly optimized for superior scalability and takes advantage of the Solaris Operating Environment for optimal system performance.

The Right Choice

SPECjAppServer2004 JOPS@Standard



More and more businesses are considering performance benchmark results as an important criteria in making application infrastructure purchasing decisions. This result, coupled with Sun's proven track record of delivering best-of-breed solutions, demonstrates superior performance while cutting the overall cost of running enterprise applications.

For more information on the Sun Blade 8000 Modular System, please visit <http://www.sun.com/blades>. For benchmark details, visit: <http://www.sun.com/servers/blades/8000/benchmarks.jsp>

SPEC, SPECjAppServer registered TM of Standard Performance Evaluation Corporation. Results as of 1/17/2007. For the latest benchmark results visit <http://www.spec.org>.

**Sun Blade 8000 (80 cores, 40 chips) and Sun Fire E6900 (48 cores, 24 chips): 7174.56 SPECjAppServer2004 JOPS@Standard. 11 x HP rx3600 servers (44 cores, 22 chips) and HP 9000 Superdome (64 cores, 32 chips): 6812.79 SPECjAppServer2004 JOPS@Standard. 20xIBM xSeries BladeCenter HS20 blades (40 cores, 40 chips) and IBM eServer p5 570 (16 cores, 8 chips): 4368.02 SPECjAppServer2004 JOPS@Standard.*