



# SGI<sup>®</sup> Altix<sup>®</sup> UV: Industry Standard System With Enterprise Class Capability and Performance

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## 1. Introduction

Most firms today are drowning in data, looking for ways to extract actionable intelligence and operational excellence from the massive data flows in back office IT systems. Until recently, computing platforms that could handle these problems were limited to high cost proprietary hardware and operating environments. New technology is breaking these barriers with the introduction of scalable systems based on standard processors and open source operating systems. Running off-the-shelf software and standard x86 processors from Intel®, Altix UV can dramatically change the ROI equation for enterprise server workflows.

## 2. Advanced Data Analysis Capability Drives Competitive Edge

The ultimate goal of corporate decision-support efforts is real-time decision intelligence for better reaction to dynamic business conditions. Organizations are installing new server technology to:

- Expand business analytics capabilities
- Make critical decisions quickly
- Accelerate time-to-results
- Add services for employees and customers

Benefits include everything from new product discovery and design, where development processes can shrink from months to hours, to fraud detection, where real-time feedback enables operators to intercept transactions before damage is done. Entirely new go-to-market strategies are enabled by real-time mass customization. Tremendous ROI is possible using these new servers.

## 3. Historical IT Dilemma: Expensive and Proprietary vs. Cheap and Standard - and with insufficient processing power

Years ago, a corporate mainframe or a proprietary enterprise “RISC” server were the only choices to perform large-scale business computing tasks. As the performance of industry standard server processors (also known as ‘x86’) increased and new architectures appeared, organizations began moving away from those older systems for certain applications, but retained the so-called ‘big iron’ for their most data-intensive workloads. The innovative global shared memory Altix UV, based on the Intel® Xeon® processors 7500 series has now come onto the scene, with a combination of leadership performance and enterprise-class reliability with the affordability of x86 and off-the-shelf OS.

Performance of the Altix UV in standardized benchmarks as compared to SPARC64 VIII based systems, the latest large system from Oracle. The following charts show the superior performance of the Altix UV on a variety of standardized benchmarks. This clearly shows the performance advantage of using industry standard processors

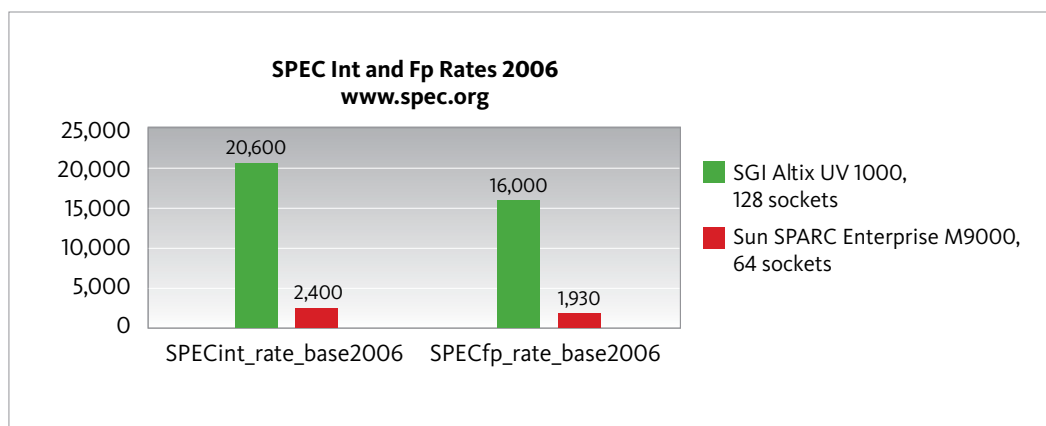


Chart 1: Comparison of the Altix UV 1000 based on Intel® Xeon® processor 7500 series to the Oracle/Sun SPARC Enterprise M9000.

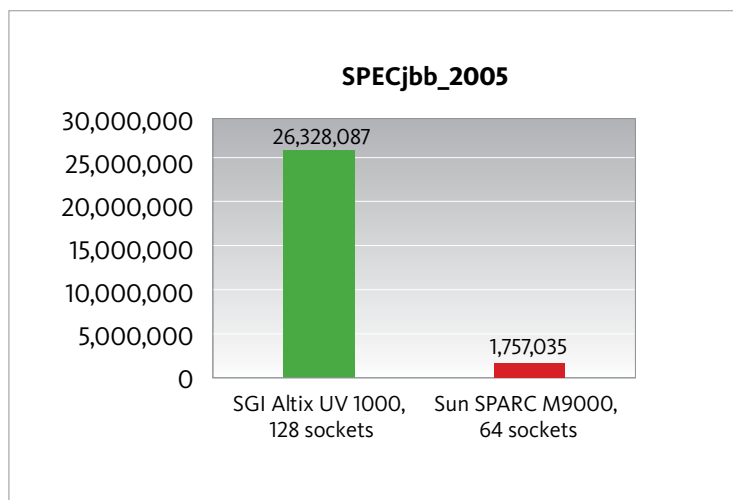


Chart 2: Comparison of the Altix UV 1000 based on Intel® Xeon® processor 7500 series to the Oracle/Sun SPARC Enterprise M9000.

Software developers have explored ways to take traditional ‘big iron’ applications and distribute them among a number of smaller servers in the hopes of reducing hardware costs and vendor lock-in. Some of these efforts have been successful, but they could not meet all the performance demands of large, ever-growing and more complex datasets. Simply put, they did not overcome the fundamental data-handling limits of the underlying distributed server architectures where access to data outside of memory takes thousands of times longer than in-memory references.

## 4. Available Today: Ground-breaking Capability and Industry Standard Too

Today's newest industry standard microprocessors have the capability to deliver the combination of performance, data-handling capacity and reliability that meet the demands of enterprise computing. However, pure processor performance is not always enough – also critical is an architecture that can tightly and reliably integrate these processors in numbers large enough to handle the massive amount of information that has become critical to daily business operations.

SGI has an answer today for this critical capability - to quickly process vast datasets in a standard 'x86' system running off-the-shelf software. The SGI Altix UV combines up to 256 Intel® Xeon® processor 7500 series processors to act like a large, single system with up to 16 Terabytes (TB) of memory for the fastest data access possible from a single server. SGI worked closely with Intel® to take advantage of the Intel® Quick Path Interconnect architecture to create a system that scales to new heights in the fastest possible manner. Most notably, the Altix UV technology now exceeds the capability of proprietary enterprise servers. The number of cores that a single instance of the operating system can control is 2048 in the Altix UV. This is significantly greater than what Solaris can control on the Sun Enterprise M9000. Servers based on proprietary architectures such as the SPARC64 VII based Sun Enterprise M9000 can only address 4 TB, which is 4 times less than the Altix UV. Chart 3 shows the differences in how many cores the SSI can address for the Altix UV vs. the Oracle/Sun Enterprise M9000 system. Chart 4 details the amount of Global Shared Memory that can be address on the Altix UV 1000 compared to the Oracle/Sun Enterprise M9000 system.

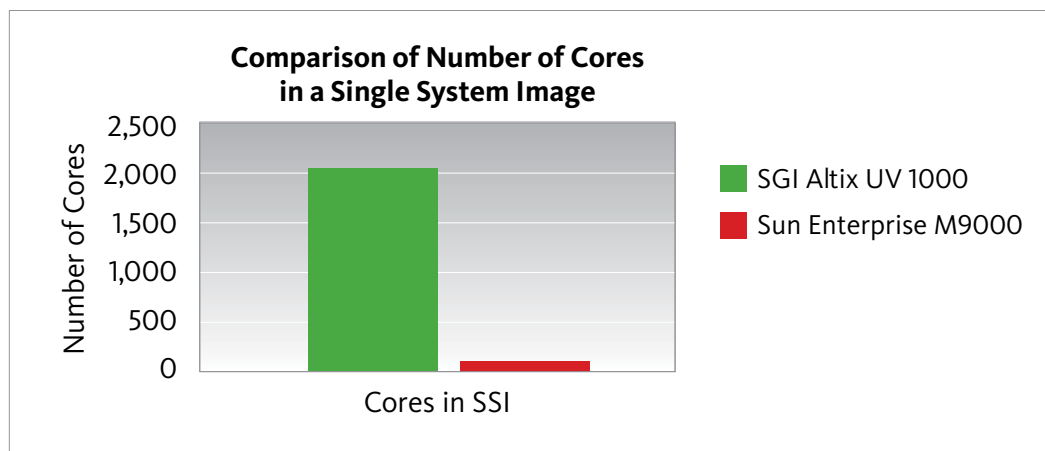


Chart 3: SSI Differences between the Altix UV 1000 based on Intel® Xeon® processor 7500 series and the Oracle/Sun Enterprise M9000.

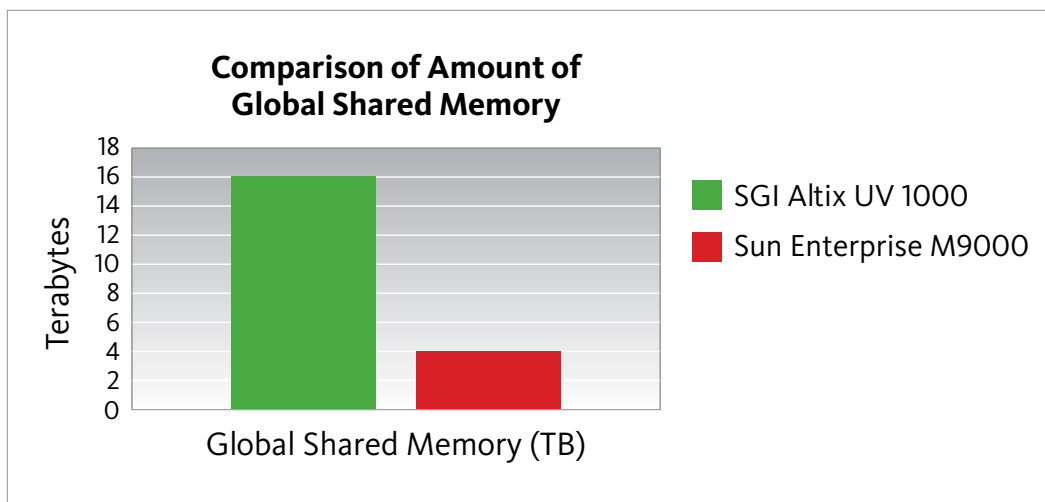


Chart 4: SSI Differences between the Altix UV 1000 based on Intel® Xeon® processor 7500 series and the Oracle/Sun Enterprise M9000.

These servers run operating systems including Linux® and Windows® and off-the-shelf software. Implementation cost is decreased by utilizing software available from a number of suppliers. In addition, when industry standard hardware and software are used in combination, more application choices become available and the promise of innovation increases.

## 5. Summary

Expensive, proprietary server platforms are no longer necessary when it comes to handling the massive datasets and demanding processing requirements that corporations are grappling with today. By keeping costs down with industry standard microprocessors and software, SGI Altix UV systems allow organizations to eliminate cost and vendor lock-in, while they make better, faster decisions in R&D, sales, security or operations.

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